



Boat bottoms should be maintained in designated areas away from the water.

Please Note

Marinas that provide commercial boat maintenance services where maintenance activities are exposed to stormwater are likely to require a National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit from the US Environmental Protection Agency (EPA). See Chapter 6 for a description of the program and the requirements for complying or call the EPA NPDES Program at (617) 918-1615.

4.1 Hull Maintenance and Cleaning

If not properly controlled, hull maintenance activities, including scraping, sanding, pressure washing, and painting, can put toxic pollutants into the marine environment. Where marinas do not provide these services, Do-It-Yourselfers and outside contractors may be performing this work on the marina's property. In all cases, this section provides you with tools to reduce the potential negative impacts from hull maintenance.

LEGAL REQUIREMENTS

The following laws apply to hull maintenance activities. If you perform or allow hull maintenance services and activities at your facility, please read the summary of these regulatory programs in Chapter 6.

- National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) for Industrial Activities
- Organotin Anti-Foulant Law
- Massachusetts Air Quality Program
- Massachusetts Hazardous Waste Regulations
- Massachusetts Industrial Wastewater Regulations
- Massachusetts Waterways Regulations

Best Management Practices

Hull Scraping, Sanding, and Washing

Hull scraping, sanding, and washing releases pollutants that are bound up in hull paint and exposes marine organisms to those pollutants. Employing the following BMPs will minimize the potential for pollutants associated with hull paint to reach coastal waters.

- ▶ **Designated Maintenance Areas:** Restrict all major vessel repair and maintenance work to designated work areas that are located away from the bulkhead. Activities that should be restricted to designated areas include abrasive blasting, pressure washing, hull scraping and sanding, and hull painting. Maintenance work such as painting, scraping, and hull cleaning should be done on land, not at marina slips or moorings. Underwater cleaning of hulls must be prohibited. The area should be provided with containment as outlined below.
- ▶ **Containment:** Maintenance areas should be designed and equipped to minimize the spread of pollutants by:
 - Containing all waste and wastewater generated from hull maintenance activities for proper treatment and disposal; and

- Covering the containment areas to prevent rainwater from entering these areas.

If covering the containment areas is not feasible, then all the stormwater collected within the containment areas must be handled as industrial wastewater generated from hull maintenance activities. Berms or curbs made of concrete or asphalt can be used to enclose the area and prevent runoff from entering or leaving the maintenance area. To prevent pollutants from seeping into the soil below, all maintenance areas should be located on top of a hard, impermeable surface, such as blacktop. These maintenance areas must be kept clean or covered to prevent rainwater from entering these containment areas and washing away the remnant pollution left over after work, or alternatively, the work area must drain to a storage tank for further recycling, treatment or disposal.

- ▶ **Pressure Washwater Management:** Pressure washwater is considered to be a “process” wastewater (or industrial wastewater). Therefore, discharge of pressure washwater to coastal waters, the ground, or a sewer system is illegal without a permit. To meet permit conditions, significant pretreatment of the wastewater prior to discharge would likely be required—regardless of the discharge option chosen. In addition, most pretreatment systems (for discharge) must be operated by staff properly certified by the state.

The significant investments in permitting, training, and operator certification for discharge systems likely make them cost prohibitive. Therefore, recycling systems that treat the wastewater for reuse as washwater without discharge may be a more viable option. The recycling systems without discharge need no operational permit if there is no hazardous waste involved. However, these systems will require periodic maintenance. No matter the disposal option selected, all pressure wash facilities must develop a system to collect the wastewater for treatment, recycling, or offsite disposal. For smaller yards that wash fewer boats, collecting all washwater for offsite disposal may be the most cost effective option.

The following practices should be considered when addressing pressure washing at marinas.

Collect Pressure Washwater: Pressure washwater must be collected for pretreatment prior to reuse, permitted discharge, or disposal. Vessels must be washed over an impervious pad that can collect all wastewater (process wastewater).

Handle Pressure Wastewater Properly: One of the following options must be selected for the management of wastewater from pressure washing operations. Facilities will need to consider many variables before selecting an appropriate management option. The number of boats washed (wastewater volume), site characteristics, sewer availability, staff technical ability, cost, and other factors must all be weighed before one of the following options is selected:

- Recycle washwater for reuse. No discharge permit is needed, but this may require periodic hauling for disposal of residual wastewater and solids.

Hazard Alert

Paint chips that are collected must be tested and confirmed as non-hazardous before disposal as solid waste. See Section 4.10 for more information on Hazardous Waste Management.

Please Note

EPA regulates the discharge of pressure washwater under the NPDES Permit Program. If you discharge any washwater to marine (or other surface) waters, you are required to obtain a NPDES Individual Permit for Industrial Discharges. This wastewater is not covered by the NPDES Multi-Sector General Permit for stormwater management.



Consider This

A dust free sander reduces unhealthy dust by as much as 98 percent, which makes for a healthier work area and cleaner natural environment. The dust free sanders are cost efficient as well. A report written by Martin Walter Co., Inc indicated that a marina manager in Missouri increased productivity by cutting sanding time by 30 percent, decreasing cleanup labor by 80 percent, and providing rental profit through weekend rentals to customers.]

- Haul wastewater to treatment facility. This activity will need an industrial wastewater holding tank compliance certification (DEP01) submitted to the Massachusetts Department of Environmental Protection (MassDEP).
- Discharge to sewer system. This activity may require a permit from the local sewer authority, sewage treatment plant, or MassDEP. In addition, a MassDEP certified operator may be required to run the treatment system.
- Discharge to surface waters. This activity will require a NPDES permit from EPA and MassDEP. In addition, a MassDEP certified operator may be required to run the treatment system.
- Discharge/Infiltrate to ground. This activity requires a groundwater discharge permit from MassDEP and a MassDEP certified operator may be required to run the treatment system.

LOCAL EXAMPLE

Parker's Boatyard in Cataumet, MA uses vacuum sanders because they are cost effective, cleaner, and more efficient than old sanding methods. Parker does not allow people to do their own bottom work at the boatyard for both environmental and economic reasons. Other yards, such as Manchester Marine, encourages Do-It-Yourselfers. They rent sanders to their customers, which has allowed Manchester Marine to pay off the cost of the sanders and make a small profit. Call Parker's Boatyard at (508) 563-9366 or Manchester Marine at (978) 526-7911 to find out how vacuum sanders have worked at their marinas.

- ▷ **Work Indoors:** Where practical, conduct vessel maintenance indoors or under temporarily covered areas where the rain cannot cause runoff. Sheet plastic shelters are widely used by many marinas.
- ▷ **Work Away from the Water:** At a minimum, always move each boat inland to the approved work area before scraping or power washing the hull. Do not allow anyone to perform hull maintenance activities on the launch ramp area or in the lift well.
- ▷ **No In-Water Bottom Cleaning:** Removal of seaweed and other marine growth on the bottom of boat hulls by divers must be prohibited. This practice is sometimes carried out by owners of sail boats before races in regattas to enhance boat speed. Cleaning of seaweed also removes anti-foulant paint and associated pollutants.
- ▷ **Dustless Vacuum Sanders:** Dustless sanders use industrial vacuum cleaners to trap dust created in the sanding process before it becomes airborne. As the sander removes paint, dust is drawn into several holes located through the sanding pad. The dust is then sucked into a vacuum container that can be emptied for disposal. Dustless vacuum sanders are one of the best ways to control paint dust before it can become a pollutant. Added advantages include keeping a clean workplace, reducing health risks to

workers, and reducing clean-up costs and time. If you choose dustless sanders as a BMP, require all staff, outside vendors, and Do-It-Yourselfers to always use this equipment. Train staff to use equipment and develop a user manual for Do-It-Yourselfers. See Appendix C for vendors of dustless sanders.

- ▷ **Tarps and Filter Cloth:** Use tarps and/or filter cloth to catch scrapings and other debris produced during maintenance work. Tarps and cloth are inexpensive “low-tech” methods to collect debris before it can be washed into coastal waters by stormwater. Filter cloths are better than tarps when boat work is expected to last longer than one day. Should it rain, the water passes through the cloth instead of washing the debris off the tarp. Have these items available to rent or sell to customers who do their own boat maintenance.
- ▷ **Clean Up Designated Areas:** Clean up the designated work area after scraping and painting. Leaving areas cluttered and messy will cause spills and allow pollutants to be tracked outside the work area.

Painting

Because hull paints contain toxic pollutants, they should be used with care. Consider the following BMPs when painting your boat.

- ▷ **Designated Maintenance Areas:** Restrict mixing of paints, solvents, and reducers, as well as the painting itself, to designated areas that are located on a hard surface and isolated from the weather.
- ▷ **Prohibit Spray Painting on the Water:** Sprayed paint can be difficult to control. Paint can be inadvertently sprayed into the water and expose marine life to toxic chemicals.
- ▷ **Clean Up Paint and Supplies:** Treat paint spills like oil spills. Clean up immediately with absorbent materials, paper, and/or rags. Since liquid paints are classified as hazardous material, dispose of paint brushes and paint properly (see Section 4.10). If your customers are permitted to paint their own boats, require them to clean up after themselves. Provide paint disposal areas for customers to use. Before disposal, all paint cans and worn out brushes and rollers should be allowed to air dry.
- ▷ **Appropriate Use and Storage of Hazardous Materials and Waste:** Make certain that all painting materials are used strictly according to manufacturers' instructions. Consult the Material Safety Data Sheets and Massachusetts hazardous waste regulations for proper product handling and disposal of waste. Refer to Section 4.10 for more information about hazardous waste disposal. Keep covers and caps on paints, thinners, and solvents to minimize the release of Volatile Organic Compounds (VOC). Outside contractors working in your marina must, under terms of your contract with them, comply to the same BMP and cleanup standards as adopted by your business.

Please Note

Spray booths may require a permit from the Massachusetts Department of Environmental Protection Air Quality Program.

- ▷ **Spray Booths:** A spray booth is a permanent shed or temporary enclosure erected around a boat during painting. Spray booths confine overspray and prevent drifting onto other boats, land, or water. Booths equipped with air filters reduce air quality impacts by filtering paint dust and particulates out of the air. Filters also help protect workers by drawing harmful fumes and paint overspray away from employees.
- ▷ **High Volume, Low Pressure (HVLP) Spray Guns:** HVLP sprays are the most efficient means for applying paint. Promote use of spray guns that are rated at 65 percent efficient paint transfer or greater. These spray guns direct more paint onto the intended surface and as a result, less paint gets into the air, and fewer VOCs are released. HVLPs also save money because less paint is used and clean up costs are reduced. Electrostatic spraying is another option that allows more paint to stay on the boat bottom. See Appendix C for companies that sell innovative paint applicators.
- ▷ **Traditional Paint Applications:** Use brushes and rollers where possible. Spray guns physically agitate the paint during application, which releases more of the chemical compounds into the air. Traditional applications reduce air emissions.
- ▷ **Water-Based Paints:** Use water-based paints wherever possible. Water-based paints are environmentally-preferable because they use small amounts of VOC solvents. Performance can be just as good as oil-based paints and cleanup is easier because brushes, rollers, and equipment can be cleaned in water, making paint thinners unnecessary.
- ▷ **Inform Do-It-Yourselfers:** Provide information to customers who work on their boats at the marina about the potential harm caused by uncontrolled release of paint products. Visible signs, clauses in customer contracts, fact sheets, and tips in mailings are all good ways to communicate this information. A Boater Fact Sheet on Hull Maintenance Activities is provided in this guidebook. Photocopy it and distribute it to your customers. For information about communicating clean boating practices to your customers, see Chapter 3.
- ▷ **Train Employees:** Train your employees to be on the lookout for hull maintenance activities by Do-It-Yourselfers that may be harmful to the coastal environment.

Useful Contacts

US Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Program - Call (617) 918-1615 or look online at <http://cfpub2.epa.gov/npdes/stormwater/msgp.cfm> for more information about the NPDES Multi-Sector General Permit.

Massachusetts Environmentally Preferable Products Procurement Program has information on acquiring recycled paints -<http://www.mass.gov/epp>.



HULL MAINTENANCE AND CLEANING

Complete this checklist if hull scraping, sanding, pressure washing, or painting occurs at your facility.

Activities that occur at the facility: Hull Scraping Sanding Pressure Washing Painting

Check either the “Yes” or “No” column to indicate if you are using each of the BMPs listed below. If the BMP does not apply (you are using a different BMP or the activity does not occur at your marina), put “NA” in the “Yes” column. In the “Action” box, list the next steps for all BMPs where you have checked the “No” column.

BMP	YES/NA	NO	Refer to Page	Action
*Designated Hull Maintenance Areas			4.3	
*Containment			4.3	
*Proper Pressure Washwater Management			4.4	
Work Indoors			4.5	
Work Away from the Water			4.5	
No In-Water Boat Cleaning			4.5	
Dustless Vacuum Sanders			4.6	
Tarps and Filter Cloth			4.6	
Clean Up Designated Areas			4.6	
*Designated Maintenance Areas for Painting			4.6	
*Prohibit Spray Painting on the Water			4.6	
*Clean Up Paint and Supplies			4.6	
*Use and Storage of Hazardous Material and Waste			4.6	
Spray Booths			4.7	
High Volume, Low Pressure (HVLP) Spray Guns			4.7	
Traditional Paint Applications			4.7	

BMP	YES/NA	NO	Refer to Page	Action
Water-Based Paints			4.7	
Inform Do-It-Yourselfers			4.7	
Train Employees			4.7	

***BMP will assist with regulatory compliance.**

NOTES:
