The New Jersey Clean Marina Program GUIDEBOOK For Partners

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This manual is an educational tool for boating support facilities, marina operators and boaters. It is not a complete reference to all relevant state, federal, or local laws and regulations. The official state regulations are found in the New Jersey Administrative Code (N.J.A.C.). Should there be any discrepancies between this document and the official version, the official version will govern.

Relying solely on the information in this book will not protect you legally. The contributing agencies, organizations, and individuals do not assume any liability for the accuracy or completeness of the information in this publication. Inclusion in this Guidebook is not an endorsement by the Department of Environmental Protection or the State of New Jersey of any product or company listed.

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NJDEP Coastal Management Office

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Foreword

The Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 require coastal states to develop Coastal Nonpoint Source Programs to address polluted runoff within the coastal zone. Nonpoint source pollution is a contamination of our waterways, ground water and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil and littering. With each rainfall, pollutants generated from these activities are washed into storm drains that flow into our waterways and ocean.

By their very nature, marinas, boat yards, and yacht clubs are on the frontline as potential sources of nonpoint source pollution. Unreflective or careless activities at these facilities can contribute to the degradation of our waterways. Marina operation is a complex business that involves diverse activities, many of which can contribute to pollution of the environment. Marina related sources of pollution include stormwater runoff from boatyards, drips from fuel docks, discharges from marine heads, and disposal of fish waste by recreational anglers.

Rather than address boating and marina related risk through additional regulation, New Jersey is implementing a Clean Marina Program, a statewide, voluntary, incentive-based initiative. We call on all marina, boatyard, and yacht club operators to embrace the challenge and join the Clean Marina Program to protect our clean water and fresh air.

Acknowledgments

This Clean Marina Guidebook is the result of the efforts of many individuals, groups, and organizations. Foremost, we gratefully acknowledge the contribution of the Maryland Department of Natural Resources Clean Marina Initiative. The Maryland Clean Marina Guidebook has served as the model upon which the guidebooks of many other states, including New Jersey, are based.

We would like to thank representatives from the following NJDEP offices who reviewed the Guidebook for regulatory accuracy: Air Compliance and Enforcement, Air Quality Permitting, Emergency Response, Hazardous Waste Compliance and Enforcement, Nonpoint Pollution Control, Pesticide Compliance, Pollution Prevention and Right to Know, Recycling and Planning, Release Prevention, Solid Waste Compliance and Enforcement, Underground Storage Tanks, and Water Compliance and Enforcement.

The following organizations deserve a special thanks for their hard work and dedication to the New Jersey Clean Marina Pilot Project: Barnegat Bay National Estuary Program, Marine Trades Association of New Jersey, Manasquan River Watershed Association, Jacques Cousteau National Estuarine Research Reserve, New Jersey Department of Transportation Office of Maritime Resources, and the New Jersey Marine Sciences Consortium.

In addition, we would like to thank the following marinas for their assistance and commitment to the New Jersey Clean Marina Program: Atlantic Highlands Municipal Harbor, Baywood Marina, Leamings Marina, Main One Marina, Ocean Gate Yacht Basin, and Silver Cloud Harbor Marina.

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Acronyms

BMP	Best Management Practice
CAFRA	Coastal Area Facilities Review Act
CFR	Code of Federal Regulations
CZARA	Coastal Zone Act Reauthorization Amendments of 1990
EPA	Environmental Protection Agency
MPPRCA	Marine Plastic Pollution Research and Control Act
MSD	Marine Sanitation Device
NDA	No Discharge Area
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PWC	Personal Water Craft
QAC	Quarternary Ammonium Compounds

RCRA	Resource Conservation and Recovery Act
RFA	Request For Authorization
SAV	Submerged Aquatic Vegetation
TCLP	Toxicity Characteristic Leaching Procedure
UL	Underwriters Laboratories, Inc.
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank

Introduction

Welcome. As a member of New Jersey's boating community, comprised of approximately 540 boatyards and marinas and approximately 200,000 registered vessels, you play an important and leading role in keeping New Jersey's beautiful water clean. The goal of the New Jersey Clean Marina Partner Program is to offer information, guidance, and technical assistance to marina operators, local government, and recreational boaters to facilitate the implementation of the most effective practices available to protect New Jersey's water resources, enhance fish and wildlife habitat, and promote environmentally sound boating practices. This Guidebook is an easy-to-use reference that will assist you in the day-to-day environmentally responsible operation of your marina, boatyard, or yacht club. In addition, it provides guidance for the long-range planning and operation of your business. By employing the best management practices (BMPs) and activities offered in this booklet, you and other marina and boatyard operators will contribute to the protection of the resources that draw boaters and fishers to New Jersey's waters. Additionally, improving the quality of New Jersey's waterways is a good business practice for your marina or boating supply facility.

The Clean Marina Partner Program is designed to assist marinas and boating support facilities to protect the resources upon which their livelihood depends: clean water and fresh air. These natural assets are essential features of the boating industry. After all, most boaters are drawn to the water and nature's glory. Ironically, activities such as boating and fishing associated with the enjoyment of natural wonders can have unintended consequences that lead to the degradation of resources.

The maintenance, operation, and storage of recreational vessels can contribute to the pollution of adjacent waters and impairment of local air quality. Contaminants include dust from hull maintenance operations, solvents from engine repair shops, petroleum from careless fueling practices, sewage discharges from boats, and heavy metals from antifouling paints. These pollutants may be deposited directly into waterways or they may be carried in by stormwater runoff. Marina and boating support facilities design and location may also contribute to environmental degradation by disturbing sensitive habitats.

This is not to say that marinas, boating support facilities and boaters are the only contributors to environmental degradation. Quite the contrary is true. Water quality is impacted by fertilizers and pesticides, by industrial discharges, and by our choices of home cleaning products. It is affected by sediment washed from cleared land and by stormwater runoff that collects oil and heavy metals deposited by our cars. Consequently, we all must do what we can to limit the detrimental environmental consequences of our actions. If we each act in an environmentally responsible manner the cumulative result will be a cleaner, healthier environment.

By implementing the best management practices contained in this Guidebook, you demonstrate your commitment to environmental stewardship and you will have a beneficial influence on the boating experience. Your marina or boatyard will be a safer, healthier place to work. You may save money by reducing your costs for materials and for waste cleanup and disposal. You may increase your income by renting out equipment such as vacuum sanders and by selling recyclable materials such as aluminum cans and office paper. Similarly, cleaner, more efficient equipment will increase your staff's productivity. Your liability associated with waste handling may also be reduced. And, your facility will be more attractive to those who care about the health of our water, land, and air. Take pride in your efforts to protect the natural resources upon which we all depend.

The Clean Marina Partner Program promotes clean water and fresh air by providing technical advice and educational material to marina operators, boating support facilities and boaters. It seeks to encourage informed decision-making that reduces boating-related pollution. The Clean Marina Guidebook for Partners is written for managers of full service boating support facilities.

However, many of the recommendations equally apply to boating support facilities with limited services, independent boatyards, and marine contractors. The Guidebook provides advice on the following topics:

- vessel maintenance and repair
- petroleum control
- sewage handling
- waste containment and disposal
- stormwater management
- marina management
- marina maintenance and modification
- siting considerations for new or expanding marinas
- laws and regulations

Boating support facilities (BSFs) that employ a satisfactory number of the BMPs provided in this Guidebook will be distinguished as New Jersey Clean Marinas. A marina that achieves Clean Marina status will be certified in recognition of its environmentally responsible efforts. Certified marinas may display the Clean Marina Program logo on their letterhead and advertising, fly a Clean Marina burgee from their property, and receive recognition by the Clean Marina Program in publications, on the official New Jersey Clean Marina Website (njcleanmarinas.org), and at public events. Now is the time to take a leadership role in protecting and enhancing the quality of New Jersey's natural resources. We urge you to join the Program. The rewards in terms of both environmental protection and economic enhancement will be well worth the effort.

The Clean Marina PartnerPledge

Included with this Guidebook is a Clean Marina Partner Pledge. By signing the pledge you commit to protect water quality and coastal resources by preventing and reducing nonpoint sources of pollution. Proudly display the original Pledge Card so that your customers can see your dedication to protecting the environment. Then send a copy to the New Jersey Sea Grant Office (see Appendix I).

How to Use this Guidebook.

The Clean Marina Guidebook for Partners is intended for use both as a reference document and as a means for you to assess and score the achievement of BMPs at your facility. Read the chapters and sections that refer to the services provided at your BSF. Review the list of activities, practices, and permits required by law as well as those that are recommended for additional environmental protection and conservation of air and water quality and habitat. You will be eligible for recognition as a Clean Marina Partner only if your boating support facility complies with all regulatory requirements. Implementation of the recommended best management practices is voluntary but by doing so you demonstrate your commitment to resource conservation and environmental stewardship. It is this extra effort for which you will be honored by the Clean Marina Partner designation.

As you read through the Guidebook you will find that statements are preceded by a legal scale (⚖) or a checkmark (✓). The scale identifies legal requirements and a checkmark indicates recommended activities for fulfilling a BMP. You do not have to institute every recommended BMP or activity and some may not apply at your facility. Often there are one or more recommended methods by which you can fulfill or implement each BMP. Each method has been assigned a value of either 1 or 5 depending on "level of difficulty" and overall environmental benefit. As you review each BMP determine which of the methods you have employed or are in place at your facility and award yourself the corresponding number of points. If a law, regulation, BMP, or one of the means by which to fulfill it do not apply at your facility simply mark it as N/A (not applicable). You will see an asterisk (*) by some of the BMPs in the Guidebook (note pages, 6, 12, 13, and 47). You are only expected to implement one of the 2 or 3 activities marked with the *. Score these by awarding points if you implement one of the activities and mark N/A for the other(s). If you do not do any of them, you must accept zero points for one and N/A for the other(s). Total the number of points you have earned for each BMP as well as the total number of points for each chapter and write it in the spaces provided in the Guidebook.

You may also keep track of your cumulative points as you complete each chapter.

A Self-assessment Checklist has been created that corresponds to the chapters, sections, and BMPs in this Guidebook. This checklist functions as a summary document allowing you to easily score your facility to determine whether it qualifies to be certified as a New Jersey Clean Marina. The Checklist has a simple set of directions that explain how to calculate your final score.

Four Clean Boating Tip Sheets are included in the Guidebook. They address vessel cleaning and maintenance, petroleum control, vessel sewage, and waste containment and disposal. Photocopy these tip sheets and distribute them to boaters. There is space on each sheet to include your facilty's name and logo.

Throughout the book you will find references to additional sources of information. Contact information and brief descriptions of services offered by each authority are listed in Appendix I. Subsequent appendices contain information about permitting assistance, sample contract language, and conservation landscaping.

The Clean Marina Committee

The Coastal Management Office within the New Jersey Department of Environmental Protection (NJDEP) administers the planning and enhancement aspects of New Jersey's federally approved Coastal Management Program. As a result, the Coastal Management Office leads the implementation of the New Jersey Clean Marina Program in coordination with a Clean Marina Committee. This Committee includes representatives from government agencies, industry, non-profit groups, academic institutions, who have knowledge and expertise in boating and marina operation and management. The Coastal Management Office and the Committee have worked together to plan, design, and implement the Clean Marina Program.

Committee members represent:

- Coastal Management Office, NJDEP
- New Jersey Marine Sciences Consortium, New Jersey Sea Grant College Program
- New Jersey Marine Trades Association
- Jacques Cousteau National Estuarine Research Reserve
- US Coast Guard Auxiliary
- Rutgers Extension Program
- Division of Parks & Forestry, NJDEP
- Partnership for Delaware Estuary, DELEP
- Barnegat Bay National Estuary Program
- Manasquan River Watershed Association
- New Jersey Department of Transportation Office of Maritime Resources

Additional information about the Committee members can be found in Appendix I.

The New Jersey Clean Marina Webpage

Current information regarding the New Jersey Clean Marina Program can be found on the official webpage at njcleanmarina.org. Copies of program documents including this Guidebook, the Pledge Card, the Self-assessment Checklist, the informational brochure, and others can be downloaded. Announcements, newsletters, photographs, answers to frequently asked questions, and more will also be available on the site.

Environmental Concerns

Vessels require a great deal of attention. They must be scraped, painted, and cleaned. Their engines need to be lubricated and otherwise tended. The vessel and engine need to be prepared to withstand the cold of winter. Each of these activities can introduce pollutants into the environment.

Sanding, blasting, and pressure washing are frequently employed to remove paint and marine growth. In the process, toxic metals such as copper and tin may be released. If heavy metals find their way into the water, they may be consumed by shellfish, worms, and other bottom-dwelling creatures and passed up the food chain to fish, birds, and humans. Heavy metals that are not incorporated into living tissue will remain in the sediments where their presence will substantially increase dredge material disposal costs.

Paints, solvents, thinners, and brush cleaners are often toxic and may cause cancer. If spilled, they may harm aquatic life and water quality. Additionally, the vapors released by some paints and solvents contribute to air pollution. Oil and grease from maintenance areas also threaten aquatic life.

Many of the cleaning products used in boat shops are also toxic. Many contain caustic or corrosive agents. They may also contain chlorine, phosphates, inorganic salts, and metals. Even some non-toxic products can harm wildlife. For instance, detergents commonly found in boat cleaning products destroy the natural oils on fish gills, reducing their ability to breathe.

Best Management Practices to Control Pollution from Vessel Maintenance and Repair Activities

Designate Work Areas.

One of the easiest ways to contain waste is to restrict the area where maintenance activities may be performed.

___✓ (5) Perform all major repairs such as stripping, fiberglassing, and spray painting in designated areas.

___✓ (5) Collect all maintenance debris. Clean work areas after completing each operation or at the end of the day, whichever comes first. Remove sanding residue, paint chips, fiberglass, trash, etc.

___✓ (5)* Locate vessel maintenance areas on an impervious surface (e.g., asphalt or cement) and, where practical, under a roof. Sheltering the area from rain will prevent stormwater from carrying debris into surface waters.

___✓ (5)* If asphalt or cement is impractical, perform work over filter fabric, canvas, or plastic tarps. Filter fabric will retain paint chips and other debris while allowing for water penetration. Plastic, on the other hand, should be used carefully because it is impervious and paint chips and debris may be washed into stormwater during a rain. Tarps may be used multiple times.

___✓ (5) Surround the maintenance area with a berm or retaining wall.

___✓ (5) Use vegetative or structural controls described in Stormwater Management Section to treat stormwater runoff.

___✓ (5) Inspect and clean stormwater systems in accordance with an established schedule. Remove trash, sediment, and other debris.

___✓ (1) Prohibit extensive maintenance or repair work outside of the designated maintenance areas.

___✓ (1) Clearly mark the work area with signs, e.g., “Maintenance Area for Stripping, Fiberglassing, and Spray Painting.”

___✓ (5) Post signs throughout the boatyard describing best management practices that boat owners and contractors must follow, e.g., “Use Tarps to Collect Debris.”

___✓ (1) Develop procedures for managing requests to use the workspace, to move boats to and from the site, and to ensure the use of best management practices.

___✓ (5) Collect debris. Have your waste hauler characterize the waste and take it to a facility authorized to manage municipal or industrial solid waste, provided that, if the waste is hazardous, the amount generated is less than 220 pounds per month or less than this quantity is accumulated at any time.

☐ **(48) Total Points for BMP** ☐ **Total N/A Points**

Contain Sanding Dust.

___✓ (5) Prevent dust from falling on the ground, into any nearby water, or becoming airborne. Invest in vacuum sanders and grinders. These tools collect dust as soon as it is removed from the hull. Vacuum sanders allow workers to sand a hull more quickly than conventional sanders. Additionally, health risks to workers are reduced because paint is collected as it is removed.

___✓ (5) Require contractors to use vacuum sanders. Rent or loan the equipment to contractors.

___✓ (1) Conduct sanding in the hull maintenance area or over a drop cloth.

☐ **(11) Total Points for BMP** ☐ **Total N/A Points**

Contain Abrasive Blasting Debris.

___✓ (1) Do not sand in a heavy breeze.

___✓ (1) Prohibit uncontained abrasive blasting.

___✓ (5) Perform abrasive blasting in the vessel maintenance area within a structure or under a plastic tarp enclosure. Do not allow debris to escape from the enclosure.

___✓ (5) Investigate alternatives to traditional media blasting. Hydroblasting and mechanical peeling essentially eliminate air quality problems. Debris must still be collected on a medium such as a filter cloth ground cover.

___✓ (5) Avoid dust entirely by using a stripper that allows the paint to be peeled off. These products are applied like large bandages, allowed to set, and are then stripped off. When the strips are removed, the paint is lifted from the hull. Dust and toxic fumes are minimized.

___✓ (5) Invest in a closed, plastic medium blast (PMB) system. These systems blast with small plastic bits. Once the blasting is completed, the spent material and the paint chips are vacuumed into a machine that separates the plastic from the paint dust. The plastic is cleaned and may be reused. The paint dust is collected for disposal. A 50-foot vessel will produce about a gallon of paint dust, substantially less than the many barrels full of sand and paint that must be discarded with traditional media blasting methods.

☐ **(22) Total Points for BMP** ☐ **Total N/A Points**

Minimize Pressure Washing Impacts.

___ ⚖ Discharges of power wash wastewater into surface or ground waters of the state are violations of the Water Pollution Control Act and the NJPDES rules. Marinas can eliminate these discharges by pressure washing over a bermed, impermeable surface that allows power wash wastewater to be contained and filtered through a reclaim/recycling system. Boatyards also have the option of collecting the wash wastewater and having it hauled for proper disposal, connecting to an existing sewer line, applying for and obtaining a separate NJPDES permit, or ceasing the activity. The revised Basic Industrial Stormwater Permit and Guidance documents are available on the New Jersey Clean Marina webpage njcleanmarina.org

As a facility that hauls and power washes boats, you have a choice of recirculating/ recycling systems which will enable you to comply with the revised stormwater permit. These systems utilize filtration and/ or chemical or physical techniques to treat the wash water:

- filtration uses devices such as screens, filter fabrics, sand filters, and hay bales to remove particles;
- chemical treatment relies upon the addition of some type of catalyst to cause the heavy metals and paint solids to settle out of the water; and
- a swirl concentrator can be used to concentrate pollutants. Water flowing in this small, compact soil separation device without moving parts, creates a vortex that centralizes the pollutants. Clean water is then discharged.

___ ⚖ If you have a permit to discharge to surface waters, ensure that any wash waste-water that is discharged to surface and/or ground water complies with your NJPDES permit.

___ ✓ (1) When pressure washing boat bottoms, use the least amount of pressure necessary to remove the growth and leave the paint intact. Where practical, use a regular garden-type hose and a soft cloth.

___ ✓ (1) Sweep and collect debris from all docks and decks prior to washing them.

☐ **(2) Total Points for BMP** ☐ **Total N/A Points**

Box 1. Bottom Paints

Antifouling bottom paints protect hulls from barnacles and other types of fouling organisms that can interfere with vessel performance. Most paints work by slowly releasing a biocide, generally cuprous oxide (Cu_2O). Pesticides in the paint harm fish and other non-target species.

Copper-based paints are not used on aluminum hulls because the interaction of copper and aluminum leads to corrosion. Instead, tin-based paints (tributyl tin or TBT) are often used on aluminum-hulled vessels. Because tin is extremely toxic, it must be applied cautiously. Concentrations of TBT as low as a few parts per trillion have caused abnormal development and decreased reproductive success in oysters, clams, and snails (EPA 1993). Tin is easily absorbed by fish through their gills and accumulates to high levels in sediments. For these reasons, Federal law restricts the use of tin-based paints to aluminum vessels of any length, boats larger than 82 feet (25 meters), and outboard motors and lower drive units. Any boatyard operator wishing to apply TBT paints must obtain a pesticide business license and have a licensed pesticide applicator on staff.

Antifouling paints can be separated into three general categories:

Leaching Paints. Water soluble constituents of leaching antifouling paints dissolve slowly in water, releasing the pesticide. The insoluble portion of the paint film remains on the hull. The depleted paint film must be removed before the boat is repainted. Most leaching paints contain solvents that produce noxious fumes.

Ablative Paints. Ablative antifouling paints also leach some toxicant into the water. The major difference is that as the active ingredient is leached out, the underlying film weakens and is polished off as the boat moves through the water. As the depleted film is removed, fresh antifouling paint is exposed. There are several available water-based ablative paints that are up to 97% solvent free. As a result, levels of volatile organic compounds are substantially less than those of solvent-based paints. Ease of cleanup is another advantage of water-based paints.

Non-toxic Coatings. Teflon, polyurethane, and silicone paints are nontoxic options. All deter fouling with hard, slick surfaces.

Minimize Paint Impacts.

Stay informed about antifouling products.

___✓ (5) Recommend antifouling paints that contain the minimum amount of toxin necessary for the expected conditions.

___✓ (1) Use water-based paints whenever practical.

___✓ (1) Recommend to your customers the use of antifouling products that have limited environmental consequences, such as Teflon, silicone, polyurethane, and wax.

☐ **(7) Total Points for BMP** ☐ **Total N/A Points**

Minimize Painting Operations Impacts.

___✓ (1) Use brushes and rollers whenever possible.

___✓ (1) Use paint spray equipment sparingly.

___✓ (1) Painting should be conducted in the vessel maintenance area, and/or over a ground cloth.

___✓ (1) When painting with a brush or roller on the water, when possible and appropriate, transfer the paint to the vessel in a small (less than one gallon), tightly covered container. Small containers mean small spills.

___✓ (1) Only mix sufficient paint for a given job.

___✓ (5) Mix paints, solvents, and reducers in a designated area indoors or under a shed.

___✓ (1) Keep records of paint use to determine excess usage for jobs. Refer to this information to avoid future overmixing.

☐ **(11) Total Points for BMP** ☐ **Total N/A Points**

Reduce Overspray.

In some cases, spray painting is the only practical choice in terms of time and money. Minimize the impact of paint overspray and solvent emissions by employing the following practices:

___✓ (1) Conduct all spray painting in a spray booth, or under a tarp.

___✓ (5) Use equipment with high transfer efficiency. Tools such as high-volume, low-pressure (HVLP) spray guns direct more paint onto the work surface than conventional spray guns. As a result, less paint is in the air, less volatile organic compounds are released, less paint is used, and cleanup costs are reduced. Air-atomizer spray guns and gravity-feed guns are other types of highly efficient spray equipment.

___✓ (5) Train staff to use spray painting equipment properly in order to reduce overspray and minimize the quantity of paint per job.

☐ **(11) Total Points for BMP** ☐ **Total N/A Points**

Handle Solvents Carefully.

Refer to Waste Containment and Disposal for further information about requirements for handling, storing, and transporting hazardous wastes.

___⚖ Store open containers of usable solvents as well as waste solvents, rags, and paints in covered, UL listed, or Factory Mutual approved containers.

___⚖ Hire a licensed waste hauler to recycle or dispose of used solvents.

___✓ (5) Direct solvent used to clean spray equipment into containers to prevent evaporation of volatile organic compounds. A closed gun cleaning system will save you money on cleaning materials.

___✓ (1) Use only one cleaning solvent to simplify disposal.

___✓ (1) Use only the minimal amount of solvent (stripper, thinner, etc.) needed for a given job.

___✓ (1) For small jobs, pour the needed solvent into a small container in order not to contaminate a large amount of solvent.

___✓ (5) Use soy-based solvents and other similar products with no or low volatility.

___✓ (1) Order your spray painting jobs to minimize coating changes. Fewer changes mean less frequent purging of the spray system. Order your work light to dark.

___✓ (1) Allow solids to settle out of used strippers and thinners so you can reuse solvents.

___✓ (1) Keep records/inventory of solvent and paint usage to keep track of the amount of hazardous waste generated on site.

___✓ (1) Keep containers of cleaning and maintenance products closed.

☐ **(17) Total Points for BMP** ☐ **Total N/A Points**

Minimize Environmental Impacts from Engine Repair and Maintenance.

___✓ (5) Store engines and engine parts under cover on an impervious surface like asphalt or concrete.

___✓ (5) Do not wash engine parts over the bare ground.

___✓ (1) Use dry precleaning methods, such as wire brushing.

___✓ (1) Avoid unnecessary parts cleaning.

___✓ (5) * For part washing adopt bioremediating systems that take advantage of microbes to digest petroleum as an alternative to solvent based parts washer. Bioremediating systems are self-contained; there is no effluent. The cleaning fluid is a mixture of detergent and water. Microbes are added periodically to "eat" the hydrocarbons;

or

___✓ (5) * If you use a solvent to clean engine parts, do so in a container or parts washer with a lid to prevent evaporation of volatile organic compounds. Reuse the solvent. Once the solvent is totally spent, either recycle it on site with a distillation unit or have it removed by an appropriate waste hauler.

___✓ (5) Use drip pans when handling any type of liquid. Use separate drip pans for each fluid to avoid mixing. Recycle the collected fluid. Use funnels to transfer fluids.

___✓ (1) Drain all parts of fluids prior to disposal.

___✓ (5) Clean engine repair areas regularly using dry cleanup methods, e.g., capture petroleum spills with oil absorbent pads.

___✓ (1) Prohibit the practice of hosing down the shop floor.

___✓ (1) Provide a test tank for small outboard engines.

☐ **(35) Total Points for BMP** ☐ **Total N/A Points**

Winterize Safely.

___✓ (5) Use propylene glycol antifreeze for all systems. It is much less toxic than ethylene glycol antifreeze.

___✓ (1) Use the minimum amount of antifreeze necessary for the job.

___✓ (5) For health reasons, do not use ethylene glycol in potable water systems; it is highly toxic and cannot be reliably purged from the system.

___✓ (1) Add stabilizers to fuel to prevent degradation. Stabilizers are available for gasoline and diesel fuels and for crankcase oil. These products protect engines by preventing corrosion and the formation of sludge, gum, and varnish. Use of these products also eliminates the need to dispose of stale fuel at the beginning of the boating season.

___✓ (5) Be sure fuel tanks are 85-90% full to prevent accumulation of flammable fumes and to minimize the possibility of condensation leading to corrosion. Do not fill the tank more than 90% full. The fuel will expand as it warms in the springtime and may spill out the vent line of a full tank.

___✓ (1) Use the highest rated octane recommended by the engine manufacturer; premium fuels are more stable than regular fuels.

___✓ (1) Be sure the gas cap seals tightly.

___✓ (5) Promote reusable canvas or recyclable plastic covers. Some manufacturers will clean and store canvas covers during the boating season.

___✓ (1) Recycle used shrink wrap.

☐ **(25) Total Points for BMP** ☐ **Total N/A Points**

Conduct In-Water Maintenance Wisely.

___✓ (1) Plug scuppers to contain dust and debris.

___✓ (5) Limit spray painting on the water to small jobs only.

___✓ (5)* Prohibit underwater hull cleaning in your marina. Given the concentration of boats, underwater cleaning is dangerous to divers and the heavy metals that are released are harmful to aquatic life. In addition, insurance to cover divers is expensive.

___✓ (1)* If you allow underwater hull cleaning follow these BMPs

- Always use the least abrasive material possible to remove growth
- Do not clean hulls that have loose or flaking paint
- Do not clean hulls coated with ablative paints

___✓ (5) Offer incentives, like reduced mid-season haul out rates, so boaters can have their hulls cleaned on land where contaminants can be contained.

☐ **(17) Total Points for BMP** ☐ **Total N/A Points**

Chapter Total: ____ (207)

Chapter Total N/A Points: ____

Petroleum Control

Environmental Concerns

Petroleum in or on the water is harmful and, in some cases, fatal to aquatic life. Gasoline contains benzene which can cause cancer. Oil contains zinc, sulfur, and phosphorous. Petroleum products introduced into the environment are a chronic problem. Cumulative small incremental discharges of petroleum products have significant environmental consequences. A gallon of fuel can contaminate over a million gallons of water. Once petroleum is introduced into the water, it may float at the surface, evaporate into the air, become suspended in the water column, or settle to the water's bottom. Floating petroleum is particularly noxious because it reduces light penetration and the exchange of oxygen at the water's surface. Floating oil also contaminates the microlayer the uppermost portion of the water column, home to thousands of species of plants, animals, and microbes. Blue crab larvae almost exclusively feed in the microlayer, which also serves as a nursery for striped bass. The abundance of life in the microlayer attracts predators including seabirds and fish. Consequently, a polluted microlayer may poison much of the aquatic food web.

Box 2: Oil Absorbent Material

Oil and fuel absorbent pads, booms, and pillows absorb petroleum products and repel water. Depending upon the type, they may hold up to 25 times their weight in oil. These types of products are useful for capturing spurts at the fuel dock, cleansing bilge water, and wiping up spills in engine maintenance areas.

There are a number of new twists on basic oil absorbent materials. One new variety of oil absorbent boom captures oil from the bilge and solidifies into a hard rubber bumper. Other types contain microbes that digest the petroleum. The oil is converted to carbon dioxide and water. Because the microbes take 2 to 3 weeks to digest a given input of oil, it is inappropriate to use these types of products for a spill of any significant size. Rather, they are intended to control the minor drips associated with routine operations. Care must still be taken to ensure that free-floating oil is not discharged overboard.

Yet another type of oil absorbent product is a boom constructed out of oil absorbent polypropylene fabric and filled with dehydrated microbes. These booms hold the petroleum in the fabric until microbes digest it. Harm associated with free-floating petroleum is thereby minimized.

Pump Contaminated Bilge Water.

___✓ (5) Draw contaminated water from bilges into a holding tank and have the holding tank pumped out by an authorized waste hauler.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Offer Spill-Proof Oil Changes.

___⚖ Drain the filter by punching a hole in the dome end. Recycle the collected oil. Recycle the metal canister if practical. If not, double bag and discard in your regular trash.

___✓ (1) Purchase a non-spill pump system to draw crankcase oils out through the dipstick tube. Use the system in the boat shop and rent it to boaters who perform their own oil changes.

___✓ (1) Slip a plastic bag over the used oil filter prior to removal to capture any drips.

___✓ (1) Encourage the use of spill-proof oil change equipment as a condition of your slip rental agreement.

☐ **(3) Total Points for BMP** ☐ **Total N/A Points**

Minimize & Contain Spills and Leaks from Machinery.

___✓ (1) Use non-water-soluble grease on Travelifts, fork lifts, cranes, and winches.

___✓ (5) Place containment berms with containment volumes equal to 1.1 times the capacity of the fuel tank around fixed pieces of machinery that use oil and gas. Place the machinery on an impervious pad. Design containment areas with spigots to drain collected materials. Dispose of all collected material appropriately. Refer to the Waste Containment and Disposal section of this guidebook. If possible, cover the machinery with a roof to prevent rainwater from filling the containment area.

___✓ (1) Place leak-proof drip pans beneath machinery. Empty the pans regularly, being conscientious to dispose of the material properly (uncontaminated oil and anti freeze may be recycled).

___✓ (1) Place oil-absorbent pads under machinery.

___✓ (5) Maintain a supply of oil and fuel absorbent pads and pillows on site to mop up any spills.

___✓ (1) Place small gas cans in fuel absorbent-lined drip pans when filling.

___✓ (5) Offer your service to install fuel/air separators on boats to eliminate vent line overflow during refueling.

☐ **(19) Total Points for BMP** ☐ **Total N/A Points**

Community Right to Know.

___⚖ A marina must report storage of gasoline, diesel fuel, propane or fuel oil (all of which require Material Data Safety Sheets) in excess of 10,000 lbs to the appropriate authorities. This does not include the fuel in boats dockside. Gasoline weighs about 6.19 lbs. per gallon, diesel weighs about 7.05 lbs. per gallon, and propane weighs about 4.23 lbs. per gallon at 60 degrees Fahrenheit (see Laws and Regulations).

Develop Emergency Response Plans.

___✓ (5) Develop plans for likely emergencies including:

- fuel spill
- holding or water tank filled with gas
- spill at the storage area: used oil, antifreeze, solvents, etc.
- fire
- health emergency
- hurricane, etc.

___✓ (5) Develop written procedures describing actions to be taken under given circumstances. The plans should be clear, concise, and easy to use during an emergency, e.g., use a large type size. Each emergency response plan should contain the following information:

Where:

- In the very front of the plan, insert a laminated 11 by 17-inch site plan of the facility showing valves, pipes, tanks, structures, roads, hydrants, docks, power and fuel shutoffs, hazardous material storage locations, and telephones.
- Describe where response material is located.
- Identify who is responsible for taking what action, e.g., deploying equipment, contacting emergency agencies, etc.
- Designate one person on the marina staff as the official spokesperson for the facility.
- Include a list of emergency phone numbers: National Response Center (800) 424-8802, NJDEP's Emergency Hotline 1-877 WARN DEP, county health department, local fire and police departments, owner, and neighboring marinas that have emergency response equipment.
- Include a brief description of each agency's jurisdiction and information about what type of equipment and services are available from neighboring marinas and spill response firms.

What:

- State the actions to take during emergencies that could reasonably occur and identify what equipment should be deployed. Include information about the types of equipment on site and their characteristics and capabilities.
- Characterize the marina's waterfront and vessels.
- Describe the type, amount, and location of materials stored on site, e.g., petroleum and hazardous materials.

How:

- Explain how the equipment is used and discarded.

When:

- Indicate when to call for assistance.

___✓ (1) Update the plans annually to include any new technology or equipment and to confirm phone numbers.

☐ **(11) Total Points for BMP** ☐ **Total N/A Points**

Make Plans Accessible.

___✓ (1) Keep copies of all Emergency Response Plans in a readily accessible location.

___✓ (1) Place a second copy of the Oil Spill Response Plan (SPCC) in the oil spill response kit.

☐ **(2) Total Points for BMP** ☐ **Total N/A Points**

Train Employees.

___✓ (5) Review plans and response procedures with staff at the beginning of each boating season and provide interim training for newly hired untrained staff.

___✓ (5) Train employees in the use of containment measures.

___✓ (5) Run emergency response drills at least twice annually.

___✓ (1) Invite the local fire department to demonstrate emergency response procedures at your boatyard.

☐ **(16) Total Points for BMP** ☐ **Total N/A Points**

Share Your Emergency Response Plans.

___✓ (1) Inform your local fire department and harbormaster about your emergency response plans and equipment.

___✓ (1) Inform neighboring businesses about the resources that are available at your facility.

☐ **(2) Total Points for BMP** ☐ **Total N/A Points**

Maintain Oil Spill Response Equipment.

___✓ (5) Maintain sufficient oil spill response equipment to contain the largest potential spill at your facility.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Store Oil Spill Response Equipment Smartly.

___✓ (1) Store the equipment where there is the greatest risk of an oil spill, such as fuel receiving and fuel dispensing areas.

___✓ (1) Store materials in an enclosed container or bin that is readily accessible to all staff-especially those who handle the fueling operations.

___✓ (1) Mark the storage site with a sign reading "Oil Spill Response Kit." Include instructions for deploying pads and booms and notification that all spills must be reported to the National Response Center at (800) 424-8802, NJDEP at 1-877 WARN DEP, and county health department.

___✓ (1) Check the bin inventory regularly.

☐ **(4) Total Points for BMP** ☐ **Total N/A Points**

Be Prepared for a Fire.

___✓ (1) Be sure hydrants are available for fighting fires at your facility.

___✓ (1) Install smoke detectors.

___✓ (5) Provide and maintain adequate, readily accessible, and clearly marked fire extinguishers throughout the boatyard.

___✓ (1) Inspect and test all fire fighting equipment and systems regularly. Test fire extinguishers annually.

___✓ (1) Train personnel on fire safety and response: who to call, location of hydrants, use of portable extinguisher, etc.

☐ **(9) Total Points for BMP** ☐ **Total N/A Points**

Maintain Material Safety Data Sheets.

___ ⚖ Keep a file of Material Safety Data Sheets (MSDS) for all products used at your facility, as required by the Occupational Safety and Health Act of 1970 (29 USC Sec. 657). Store the file in an office away from material storage areas. Keep in mind that during an emergency the file will not reflect either the quantities of materials on site or even whether all the listed materials are present.

___✓ (1) Inform the local Emergency Planning Committee what materials you store and what is released when they burn.

☐ **(1) Total Points for BMP** ☐ **Total N/A Points**

Chapter Total:
____ (94)

Chapter Total N/A Points:
____

Waste Containment and Disposal

Environmental Concerns

All boatyards generate some waste; waste that may threaten human health, be hazardous to wildlife, and be costly to coastal communities.

Solid waste, particularly plastics, must be contained. There are many well-documented instances of marine mammals, fish, turtles, and seabirds becoming entangled or choking on plastic marine debris. Plastics also represent a hazard to navigation because they can snare propellers and clog engine intake systems. Divers may also become entangled. Furthermore, solid waste that washes up on shore is unattractive and may be costly to remove.

In addition to solid waste, boatyard operators must be concerned with the proper collection and disposal of liquid wastes and of corrosive, reactive, toxic, and/or ignitable materials, i.e., hazardous wastes.

Best Management Practices to Properly Contain and Dispose of Waste

Hazardous Waste

Conditionally Exempt Facilities

Most boatyards deal with limited quantities of "non-acute" hazardous waste and thus are considered
"conditionally exempt small quantity generators." Facilities that generate less than 100 kg (about 220 pounds or 30 gallons) of hazardous waste per month and which do not accumulate more than 1,000 kg (2,200 lbs.) of waste at any one time are considered "conditionally exempt small quantity generators." Conditionally exempt small quantity generators are not required to register with the EPA and do not need a hazardous waste generator identification number. Send hazardous waste from conditionally exempt small quantity generators to a disposal facility that is permitted, licensed, or registered by the state to manage municipal or industrial solid waste.

Hazardous Waste Generators

If your facility exceeds the thresholds of a conditionally exempt small quantity generator you are considered a hazardous waste generator and are subject to the requirements discussed below. Hazardous waste "generators" are those individuals or companies that produce greater than 100 kilograms (about 220 lbs. or 30 gallons) (2,200 lbs.) at any one time. The following requirements apply to all hazardous waste

of hazardous waste during one calendar month or who store more than 1,000 kg (2,200 lbs.) at any one time. The following requirements apply to all hazardous waste generators.

___ ⚖ All generators and transporters of hazardous waste must have an Environmental Protection Agency (EPA) identification number provided by the NJDEP. To apply for an identification number, use EPA Form 8700-12 (available from NJDEP).

___ ⚖ Store hazardous waste in UL listed or Factory Mutual approved containers labeled and marked according to Department of Transportation regulations. Refer to 49 CFR 178. Mark the date accumulation begins on each container. Store containers on pallets to prevent corrosion and in an area able to contain any leaks. Keep containers closed when not adding or removing waste. Inspect containers weekly.

___ ⚖ Store quantities of waste greater than 100 kg (220 lbs.) but less than 1,000 kg (2,200 lbs.) for a maximum of 180 days. Any quantity of waste greater than 1,000 kg may be stored for a maximum of 90 days.

___ ⚖ Prepare a written emergency contingency plan if you generate more than 100 kg (220 lbs.) of hazardous waste per month or accumulate more than 1,000 kg at any one time. Copies must be given to NJDEP and local agencies.

___ ⚖ Document all hazardous waste training in each employee's personnel file. All personnel who handle hazardous waste must receive training to ensure compliance with the state regulations.

___ ⚖ Transporters must be registered and are listed on the NJDEP web page.

___ ⚖ Anyone who sends hazardous waste offsite for treatment, storage, or disposal must prepare a manifest. Ensure that all of the information on the manifest is correct. The hazardous waste manifest must accompany all hazardous wastes "from cradle to grave." It is your responsibility to ensure that the driver and the vehicle are certified to handle hazardous waste. Each hazardous waste transporter must sign the manifest, as should the operator of the treatment, storage, or disposal facility. A final copy must be returned to the generator once the waste is properly treated, stored, or disposed of.

___ ⚖ Every two years, submit a report to NJDEP that summarizes hazardous waste activities during odd-numbered years. It is recommended, but not mandatory, to also report figures for even-numbered years.

___ ⚖ Retain all records, including manifests and waste analysis and annual reports, for at least three years. The files must be available for inspection by NJDEP.

Universal Waste

Universal waste includes hazardous wastes that are managed under the universal waste requirements (see N.J.A.C. 7:26A-7): batteries, pesticides, thermostats, lamps, mercury containing devices, oil-based finishes, and consumer electronics. A facility that generates universal waste is probably a "small quantity handler of universal waste," since the accumulated universal waste at a boatyard is unlikely to exceed the accumulation threshold of 11,000 lbs. or more at any time.

The following discussion relates to facilities that are small quantity handlers of universal waste and is presented in two parts: general requirements for handling any universal waste and requirements and recommendations for handling specific categories of universal waste.

___ ⚖ The waste must be managed in a manner that prevents releases of any universal waste or component of universal waste to the environment. This involves containing any universal waste that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions;

___ ⚖ It must be clearly labeled either individually or by closed container with the required phrasing as illustrated in the following examples: "Universal Waste – Oil-based Finish", "Universal Waste Mercury Containing Devices";

___ ⚖ Universal waste may not be accumulated for longer than a year from the date the waste is generated unless it can be demonstrated that the additional length of accumulation is necessary solely to facilitate proper recovery, treatment, disposal of the waste;

___ ⚖ You must be able to clearly demonstrate the length of time that the universal waste has been accumulated from the date that it became waste;

___ ⚖ All facility employees who handle or have responsibility for managing universal waste must be informed of the proper handling and appropriate emergency procedures pertaining to the type(s) of universal waste occurring at the marina;

___ ⚖ Any release of universal waste or other residues from universal waste must be immediately contained;

___ ⚖ If the material resulting from a release is hazardous waste, the material must be managed as hazardous waste in compliance with all applicable requirements;

To determine your best disposal option, visit the NJDEP website at www.nj.gov/dep/dshw/lrm/uwaste.

Batteries

___ ⚖ Clearly label a battery storage area as "Used Batteries", "Universal Waste – Batteries", or "Waste Batteries."

___ ⚖ Store batteries with caps in place.

___ ⚖ Store used batteries with either missing caps or cracked casings in a sheltered area or container.

Mercury Containing Devices and Thermostats

Mercury poisoning affects the central nervous system of vertebrates, including humans. Mercury in the environment moves up the food chain and bio-accumulates in carnivores. Mercury in the environment has been documented in freshwater and estuarine fish species has led to health advisories warning people not to consume certain fish under certain circumstances.

Certain float switches that turn bilge pumps and shower water storage tank pumps on and off contain as much mercury as 100 fluorescent lamps. Most air conditioning/heating thermostats do also. Many boats have one or more of these mercury containing devices. Bilge pump float switches fail (sometimes in less than a year) because marine bilgewater corrodes exposed wires. Some boat owners may not know that these switches, typically encased in white or colored plastic, contain mercury and the boat owner may unknowingly discard these switches as regular trash. Thermostats wear out much less frequently but boat owners and repairers may be unaware that they also contain mercury.

___✓ (5) Establish a designated secure area where mercury switches can be stored for recycling.
- Provide watertight containers for unusable mercury switches
- Ensure that leaking mercury switches are placed in heavy sealable plastic bags before they are placed in the container.

___✓ (1) Post signs alerting the public to the environmental concerns regarding mercury. Encourage them to recycle bilge pump switches and AC/heater thermostats.

___✓ (1) Periodically place flyers in customers' bills or other correspondence reminding them of the legal disposal procedures for mercury bilge pump float switches and AC/heating thermostats and provide information regarding local household hazardous waste programs and industry sponsored take-back programs.

☐ **(7) Total Points for BMP** ☐ **Total N/A Points**

Reduce Waste.

In addition to the suggestions offered elsewhere in this Guidebook, employ the following recommendations to further reduce waste. Keep in mind that less waste means lower disposal costs.

___✓ (1) Avoid having leftover materials by carefully considering the job, evaluating your actual needs, and buying just enough product for the job. Encourage boaters to do the same.

___✓ (1) Minimize office waste: make double-sided copies, use scrap paper for notes and messages, purchase recycled office paper, and reuse polystyrene peanuts or give them to small scale packing and shipping companies that will reuse them.

___✓ (1) Request that your vendors use alternative packing material such as paper, potato starch peanuts, popcorn, etc.

___✓ (1) Discourage the use of plastic and styrofoam cups, food containers, utensils, and other non-biodegradable products.

☐ **(4) Total Points for BMP** ☐ **Total N/A Points**

Manage Trash.

___✓ (5) Develop your waste management strategy based on the number of patrons, the types of waste generated, the layout of your facility, and the amount of staff time you can devote.

___✓ (5) Promote your image as a responsible business by having adequate and reasonably attractive trash and recyclables receptacles, e.g., cans, bins, dumpsters for staff use.

___✓ (1) Place trash and recyclables receptacles in convenient locations. Select high traffic areas such as at the landward end of the dock, near bathrooms and showers, alongside vending machines, adjacent to the marina office, or along the path to the parking lot.

___✓ (1) Select containers that will hold the expected volume of trash.

___✓ (1) Provide lids or restricted openings to secure the waste inside and to prevent animals, birds and rainwater from getting in.

___✓ (5) Post signs clearly indicating what may and may not be placed in a specific container: engine oil, antifreeze, paints, solvents, varnishes, pesticides, lead batteries, transmission fluid, distress flares, and polystyrene peanuts (loose peanuts tend to blow away).

___✓ (1) Require all employees to police the facility for trash and vessel maintenance wastes. Do not allow litter to mar your grounds.

___✓ (1) Post signs directing people to trash/recyclables receptacles if the containers are not in plain view.

___✓ (1) Plant or construct a windscreen around the dumpster to make the area more attractive and to prevent trash from blowing away. Use native shrubs such as red chokeberry (*Aronia arbutifolia*), spicebush (*Lindera benzoin*) or mountain laurel (*Kalmia latifolia*).

☐ **(21) Total Points for BMP** ☐ **Total N/A Points**

Recycle Whenever Possible.

Divert reusable materials out of the waste stream. A recycling program is an easy, highly visible means to demonstrate environmental stewardship. Recycling programs are also a good way to introduce patrons to pollution prevention practices. In fact, many may practice recycling at home and may expect to see recycling bins. The added cost of providing for recycling may be offset by income derived from the sale of some high quality recyclable items such as office paper, aluminum, and cardboard.
In addition, you may realize cost savings due to less frequent tipping of your dumpster(s) because of the reduced volume of trash.

___✓ (1) Contact a waste hauler or your local solid waste recycling coordinator to identify what materials are collected in your area. The following materials may be recycled: antifreeze, oil, metal fuel filter canisters, solvents, glass, shrink wrap, type 1 and 2 plastics, aluminum, steel, tin, newspaper, corrugated cardboard, mixed paper, scrap metal, tires, and white goods (appliances).

☐ **(1) Total Points for BMP** ☐ **Total N/A Points**

Recycle Solid Waste.

___⚖ Provide containers to collect, at a minimum, plastic, glass, aluminum, cardboard, and newspaper.

___⚖ Store used tires under cover so that they do not collect rainwater.

___⚖ Do not store solid waste for more than six months without a permit from NJDEP.

___⚖ Only employ solid waste haulers that are registered with NJDEP.

___✓ (1) Clearly mark each container so people know what may and may not be put in it.

___✓ (1) Provide lids or some type of restricted opening to prevent the collected material from being lifted out by the wind and to prevent rainwater from collecting inside.

___✓ (1) Place the collection bins for solid recyclables in convenient high traffic locations.

___✓ (1) Use a different color or material to distinguish recycling bins from the standard trashcans.

☐ **(4) Total Points for BMP** ☐ **Total N/A Points**

If you can not locate a collection service for the marina, call NJDEP's Recycling Hotline at (609) 984-3438 and report the problem.

☐ **(4) Total Points for BMP** ☐ **Total N/A Points**

Recycle Liquid Waste. (N.J.A.C. 7:26A)

___ ⚖ Provide containers to collect oil and antifreeze. Also collect solvents according to hazardous waste regulations.

___ ⚖ Provide separate containers for oil and antifreeze.

___ ⚖ Aboveground tanks are preferable to drums that are unsuitable for long-term storage or to withstand repeated handling. Cylindrical, horizontal tanks with supports that keep the tank sufficiently above the ground to permit visual inspection are preferable. Double-walled tanks with a screened and covered drainage area are recommended. Tanks should be constructed of material that meets the American Petroleum Institute and the American Society of Lubricating Engineers Standards for flammable and combustible liquids (UL No. 142 Standard). Equip the tank with a wide-mouthed, long-necked funnel, or other similar apparatus, in order to minimize spillage when transferring used liquid waste into the tank. Funnels should be sufficiently large to drain portable containers and oil filters. The tank should also be equipped with a pressure relief valve or vent to provide tank ventilation to prevent a build-up of potentially volatile fumes.

___ ⚖ Label used oil collection tank with "Used Oil" (N.J.A.C. 7:26A-6.4(d)4i).

___ ⚖ Maintain tanks in good condition, free of rust or corrosion (N.J.A.C. 7:26A-6.4(d)3i).

___ ✓ (5) Surround tanks with impervious, secondary containment that is capable of holding 110 percent of the volume of each tank. If some liquid spills within the containment area, and wiped up or dried with absorbent materials, it is not considered a "release", thus avoiding the need to report the incident to NJDEP and incurring cleanup costs.

___ ✓ (1) Shelter the tanks from the elements.

___ ✓ (1) Check with your recycler to determine what materials may be mixed. Generally engine oil, transmission fluid, hydraulic fluid, and gear oil may be placed in the same container. Some haulers will also take diesel and kerosene. Ethylene glycol and propylene glycol antifreeze are often collected in the same used antifreeze tank. As a precaution, CHECK WITH YOUR RECYCLER BEFORE MIXING ANY MATERIALS.

___ ✓ (5) Post signs indicating what may and may not be placed in each tank.

___ ✓ (1) Have available absorbent materials, such as sawdust, sorbent granules or sorbent pads to soak up minor spills.

___ ✓ (5) Do not allow patrons to pour gasoline, solvents, paint, varnishes or pesticides into the oil or antifreeze recycling containers. The introduction of these materials creates a "hazardous waste." The whole tank must be disposed of as hazardous waste, which is an expensive undertaking.

___✓ (1) Lock the intake to all recycling tanks to prevent contamination. Instruct your patrons to get the key from the appropriate staff person or to leave their oil or antifreeze next to the collection tank. If you select the second option, assign a member of your staff to inspect the collection site daily for any material that may have been dropped off. Keep all tanks sealed when not actively using them.

___ ⚖ Be aware that recycling liquid materials is a long-term obligation. Investigate waste haulers to ensure that they are licensed and actually recycle the collected material. Maintain shipping manifests for solvents and other hazardous wastes for a minimum of 3 years (although not required, it is a good business practice to also retain receipts for used oil and antifreeze that is recycled).

If you have difficulty finding a collection service in your area, contact the NJDEP at (609) 984-3438.

☐ **(19) Total Points for BMP** ☐ **Total N/A Points**

Minimize Hazardous Product Use.

By minimizing your use of hazardous products, you can reduce health and safety risks to your staff, tenants, and contractors; lower disposal costs; decrease liability; and limit chances that you will be responsible for a coastly cleanup of inappropriately disposed material.

___✓ (1) Avoid using corrosive, reactive, toxic, or ignitable products, to the greatest extent possible. The use of these materials is likely to generate hazardous waste.

___✓ (5) Adopt an inventory control plan to minimize the quantity of hazardous material that you purchase, store, and dispose of.

___✓ (1) Do not store large amounts of hazardous materials. Purchase hazardous materials in quantities that you will use up quickly.

___✓ (1) Establish a “first-in first-out” policy to reduce storage time. Dispose of excess material every 6 months.

___✓ (1) Use alternatives such as a botanical-based cleanser parts washer or cyclonic parts washer.

☐ **(9) Total Points for BMP** ☐ **Total N/A Points**

Box 3. How Do You Know if a Substance is Hazardous?

All waste generators must determine whether or not their refuse is hazardous. Use the following steps to determine if you have hazardous waste.

1. It is listed as a hazardous waste as defined in N.J.A.C. 7:26g
2. The waste exhibits one or more of the characteristics of hazardous materials: ignitability, corrosivity, reactivity, or toxicity. A generator may either test the waste to determine if it exhibits a hazardous characteristic or use knowledge of the waste, e.g., first hand experience or information gathered from a Material Safety Data Sheet. The test for toxicity is called the Toxicity Characteristic Leaching Procedure (TCLP) and is performed by industrial laboratories.

Store Solvents and Hazardous Materials with Care.

___ ⚖ Store solvents and other hazardous materials in fire-safe containers that are UL listed or Factory Mutual approved. Containers must meet U.S. Department of Transportation standards for protecting against the risks to life and property inherent in the transportation of hazardous materials. Approved containers will carry specification markings (e.g., DOT 4B240ET) in an unobstructed area. Refer to 49 CFR 178 for additional packaging specifications.

___ ⚖ Plainly label all stored and containerized material. For hazardous waste, mark the date accumulation begins and ends on each container.

___ ⚖ Store containers on pallets in a protected, secure location away from drains and sources of ignition. Routinely inspect the storage area for leaks.

___ ⚖ To minimize air pollution, cap solvents and paint thinners when not in use. Store rags or paper saturated with solvents in tightly closed, clearly labeled containers.

___ ⚖ Separate hazardous chemicals by hazardous class. Call NJDEP at (609) 292-6714 for the Bureau of Chemical Release Information and Prevention to determine the classes of your chemicals.

___ ✓ (5) Assign control over hazardous supplies to a limited number of people who have been trained to handle hazardous materials and understand the first-in first-out policy.

___ ✓ (1) Routinely check the date of materials to prevent them from exceeding their shelf life.

☐ **(6) Total Points for BMP** ☐ **Total N/A Points**

Follow Recommended Disposal Methods.

The following table contains recommendations for the proper disposal of wastes typically found at boatyards and similar facilities.

Table 1. Recommended Disposal Methods

Waste	**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 of. • 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 • Hire a waste hauler to collect and dispose of. • Take small quantities to a household hazardous waste collection event. • Use waste oil for space heating (subject to regulations under N.J.A.C. 7:26A. Call 609-984-6985 for assistance.)
Quart Oil Cans	✓ Drain completely and dispose of in regular trash. They cannot be recycled.
Non-terneplated Oil Filters	✓ Puncture and completely hot drain all free-flowing oil. Recycle the oil and the metal canister. • If you do not recycle the canister, double-bag it in plastic and place it in your regular trash.
Terneplated Fuel Filter (used in heavy equipment and heavy-duty trucks)	✓ Dispose of as hazardous waste (contains lead).
Stale Gasoline	✓ Add stabilizer in the winter to prevent it from becoming stale or an octane booster in the spring to rejuvenate it. Use the fuel. • Mix with fresh fuel and use. • Hire a hazardous waste hauler to collect and dispose of. A hazardous waste manifest is required. • Take small quantities to a household hazardous waste collection event.

Table 1. Recommended Disposal Methods, page 2 of 4

Waste	Disposal Options **If multiple options are listed, the first option (✓) is the preferred method**
Kerosene	✓ Filter and reuse for as long as possible then recycle. • Hire a waste hauler to collect and dispose of.
Mineral Spirits	✓ Filter and reuse. • Hire a waste hauler to collect and dispose of.
Solvents • Paint and engine cleaners such as acetone and methylene chloride	✓ Use non-toxic alternatives such as botanical-based cleanser parts washer or cyclonic parts washer. ✓ Reuse as long as possible employing a solvent still and then recycle. • Dispose of as hazardous waste
Sludge Recovered from a Solvent Listed as a Hazardous Waste Under N.J.A.C. 7:26g	✓ Dispose of as hazardous waste
Sludge Recovered from a Solvent Not Listed as a Hazardous Waste Under N.J.A.C. 7:26g and Which Does Not Exhibit Hazardous Characteristics	✓ Let sludge dry in a well-ventilated area, wrap in newspaper, and dispose of in garbage.
Paints and Varnishes: • Latex • Water-based • Oil-based	✓ Use leftover material for other projects, i.e., as an undercoat for the next boat. • Encourage tenants to swap unused material. • Dispose of as hazardous waste.
Paint Brushes	✓ Dry completely. Discard in regular trash.
Paint Filters	✓ Dry completely prior to disposal. Treat as hazardous waste if paint contains heavy metals above regulatory levels.
Rags Soaked with Hazardous Substances	✓ Keep in covered container designed for flammable materials until ready to discard. Dispose of the solvent that collects in the bottom of the container as hazardous waste. ✓ Wring rags out over a collection receptacle and have laundered by an industrial laundry. • If rags fail Toxicity Characteristic Leaching Procedure (TCLP) test, dispose of as hazardous waste.
Used Oil Absorbent Material	✓ If it is saturated with oil or diesel, double bag it in plastic and discard in trash (as long as no petroleum is leaking). ✓ If it is saturated with gasoline, dispose of as hazardous waste.
Used Bioremediating Bilge Booms	✓ Dispose of in regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.
Epoxy and polyester resins	✓ Catalyze and dispose of as solid waste.

⚖ : Law or Regulation ✓ : Recommended

Table 1. Recommended Disposal Methods, page 3 of 4

Waste	**Disposal Options** **If multiple options are listed, the first option (✓) is the preferred method**
Glue and Liquid Adhesives	✓ Catalyze and dispose of as solid waste.
Empty Containers • Paint cans • Buckets • Spent caulking tubes • Aerosol cans	✓ Recycle empty drums. ✓ May be put in trash can as long as: • All material that can be removed has been. Be sure no more than 1'' of residue is 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 solvent. Properly dispose of the solvent.
Residue from Sanding, Scraping, and Blasting	✓ Dispose of as solid waste. ✓ If residue contains lead or other hazardous waste, dispose of as hazardous waste.
Residue from Pressure Washing	✓ Dispose of as solid waste.
Lead Batteries	✓ Handle as "universal waste" Recycle or sell to scrap dealers. Store on an impervious surface, under cover. Protect from freezing. Check frequently for leakage. • Inform boaters that if they take their old battery to a dealer, they will receive a $5 refund on a new battery.
Expired Distress Signal Flares	✓ Encourage boaters to keep onboard as extras. ✓ Store in well-marked, fire safe container. Use expired flares to demonstrate to boaters how they are used. Be sure to notify the fire department and Coast Guard ahead of time-especially if using aerial flares. Conduct the demonstration over water. • Encourage boaters to take to local fire department or household hazardous waste collection event.
Scrap Metal	✓ Recycle.
Light Bulbs • Fluorescent bulbs • Mercury vapor lamps • High-pressure sodium vapor lights • Low-pressure sodium vapor lights • Metal halide lamps	✓ Recycle if you have more than 10 to dispose of. ✓ If fewer than 10, check with your county coordinator and take to a county recycling facility if they will accept. • If fewer than 10, treat as solid waste. ✓ If facility is a generator, dispose of mercury containing lamps and fluorescent bulbs as universal waste.
Refrigerants	✓ Recycle. Contact your county coordinator to identify certified handlers for CFC recovery. • Use alternative refrigerants: HCFC-22 (for ACS and electric chillers), HCFC-123 (replaces CFC-11), HFH-134A (replaces CFC-12).

Table 1. Recommended Disposal Methods, page 4 of 4

Waste	Disposal Options **If multiple options are listed, the first option (✓) is the preferred method**
Monofilament Fishing Line	✓ Recycle through a manufacturer or tackle shop.
Scrap Tires	✓ Recycle. Register with NJDEP if you will be collecting more than 50 tires. Contact the Bureau of Recycling and Planning at (609) 984-3438 for additional information. Store according to National Fire Protection Association Standards.
Pesticides	✓ Dispose of as hazardous waste. • Triple rinse empty containers before disposing of in trash.
Plastic Shrink Wrap	✓ Recycle.
Fish Waste	✓ Prohibit disposal of fish waste in confined marina waters. Establish a fish cleaning station and adopt one of the following disposal methods: • Equip the cleaning station with a garbage disposal connected to municipal sewer. • Compost the scraps. • Instruct boaters to bag scraps in plastic and place in a dumpster or take home.

Track Pollution Incidents.

___✓ (5) Copy and use the Pollution Report and Action Log included at the end of this chapter to track pollution incidents and actions taken.

___✓ (1) Post the Log on a clipboard in the maintenance area or another easily accessible location.

___✓ (1) Consult the Pollution Report and Action Log daily.

☐ **(7) Total Points for BMP** ☐ **Total N/A Points**

Proper Disposal of Sanitary Waste

If you have a septic system, be alert for signs of trouble: wet areas or standing water above the absorption field, toilets that run slowly or back up, and odor. Septic failures can contaminate drinking water and shellfish. The following tips will help you to avoid the health risks and nuisance associated with an overburdened system:

___✓ (5) Post signs in the restrooms informing patrons not to place paper towels, tissues, cigarette butts, disposable diapers, or feminine hygiene products in the toilets. These items can clog the septic system.

___✓ (1) Do not dump solvents such as paint thinner or pesticides down the drain and post signs prohibiting customers from doing the same.

___✓ (1) Do not pour fats and oils down drains.

___✓ (1) Do not use a garbage disposal. Disposals increase the amount of solids entering the system. Capacity is reached more quickly. As a result, more frequent pumping is necessary.

___✓ (1) Use small amounts of drain cleaners, household cleaners, and other similar products.

___✓ (1) Do not use "starter enzyme" or yeast. These products can damage the system by causing the infiltration bed to become clogged with solids that have been flushed from the septic tank.

___✓ (1) Direct downspouts and runoff away from the septic field in order to avoid saturating the area with excess water. For stormwater management reasons, do not direct the flow toward paved areas.

___✓ (1) Do not compact the soil by driving or parking over the infiltration area.

___✓ (5) Have a licensed septic inspector inspect your system yearly. The inspector can help you determine the pumping frequency your tank requires. Hire a licensed professional to pump the tank at least every 3 years.

___✓ (5) Convert from septic to sewer if available in your area.

___✓ (5) Service patrons' MSDs annually to ensure that their Type I and II systems function properly.

___✓ (1) Encourage boaters to run dye tablets through their Type I or Type II systems. If a system is operating properly, no dye will be visible. Maintenance is required if dye can be seen in the discharge.

☐ **(28) Total Points for BMP** ☐ **Total N/A Points**

As the generators and conveyors of sewage, boaters need to be informed about the proper disposal of sewage. They must also be encouraged to properly maintain their MSDs and to purchase environmentally friendly treatment products for their heads and holding tanks.

Sewage - Environmental Concerns

Raw or poorly treated sewage discharged from boats is harmful to human health. Typhoid, hepatitis, cholera, gastroenteritis, and other waterborne
diseases may be passed directly to people who swim in contaminated waters. People may also become infected by eating shellfish contaminated with viruses and other microorganisms contained in sewage discharge.

Sewage is also harmful to water quality. The heavy nutrient load in sewage promotes excessive algal growth. As the algae multiply, they prevent life-sustaining sunlight from reaching submerged vegetation. When the algae die, decomposition by bacteria further reduces levels of dissolved oxygen.

Pertinent Laws and Regulations

No Discharge Areas

A No Discharge Area (NDA), sometimes referred to as No Discharge Zones, is an area of water that requires greater environmental protection and where even treated sewage may not be discharged from a boat. The Federal Clean Water Act defines all freshwater lakes, reservoirs, and rivers incapable of interstate vessel traffic as No Discharge Areas. With U.S. Environmental Protection Agency approval, states may establish NDAs in other state waters.

Vessels with an installed toilet typically have a “Y” valve or other means to bypass the sanitation system. Within the state’s No Discharge Areas, all pathways for discharge of raw sewage must be secured. The “Y” valve may be secured with a padlock or a non-reusable nylon tie known as a wire tie. Alternatively, the valve handle can be moved to the closed position and removed.

The following rivers are NDAs: Navesink River, Shrewsbury River, Shark River, Manasquan River and Barnegat Bay. As New Jersey continues its efforts to cleanup state waters, certain areas may be considered for NDA designation.

Safeguard and Maintain Septic Systems to Protect Water Quality and Public Health.

If you have a septic system, be alert for signs of trouble: wet areas or standing water above the absorption field, toilets that run slowly or back up, and odor. Septic failures can contaminate drinking water and shellfish. The following tips will help you to avoid the health risks and nuisance associated with an overburdened system:

___✓ (5) Post signs in the restrooms informing patrons not to place paper towels, tissues, cigarette butts, disposable diapers, or feminine hygiene products in the toilets. These items can clog the septic system.

___✓ (1) Do not dump solvents such as paint thinner or pesticides down the drain and post signs prohibiting customers from doing the same.

___✓ (1) Do not pour fats and oils down drains.

___✓ (1) Do not use a garbage disposal. Disposals increase the amount of solids entering the system. Capacity is reached more quickly. As a result, more frequent pumping is necessary.

___✓ (1) Use small amounts of drain cleaners, household cleaners, and other similar products.

___✓ (1) Do not use "starter enzyme" or yeast. These products can damage the system by causing the infiltration bed to become clogged with solids that have been flushed from the septic tank.

___✓ (1) Direct downspouts and runoff away from the septic field in order to avoid saturating the area with excess water. For stormwater management reasons, do not direct the flow toward paved areas.

___✓ (1) Do not compact the soil by driving or parking over the infiltration area.

___✓ (5) Have a licensed septic inspector inspect your system yearly. The inspector can help you determine the pumping frequency your tank requires. Hire a licensed professional to pump the tank at least every 3 years.

___✓ (5) Convert from septic to sewer if available in your area.

☐ **(22) Total Points for BMP** ☐ **Total N/A Points**

Offer MSD Inspections.

___✓ (5) Service patrons' MSDs annually to ensure that their Type I and II systems function properly.

___✓ (1) Encourage boaters to run dye tablets through their Type I or Type II systems outside of the marina. If a system is operating properly, no dye will be visible. Maintenance is required if dye can be seen in the discharge.

☐ **(6) Total Points for BMP** ☐ **Total N/A Points**

Chapter Total: ____ (110)

Chapter Total N/A Points: ____

Stormwater Management

Environmental Concerns

Stormwater runoff is precipitation that is not absorbed by the ground. Rather, it washes over the surface of the land picking up pollutants as it travels. Stormwater runoff may collect soil particles, petroleum products, excess fertilizer, residues from industrial activities, litter, and pet waste. If left unchecked, these pollutants are carried with the runoff into surface waters where they impact water quality.

The volume of stormwater runoff increases as natural forests and fields are replaced with hard surfaces such as buildings, parking lots, driveways, and roads. Without plants to disrupt the flow, stormwater moves across the land more quickly than under predevelopment conditions. This greater, faster flow of stormwater can severely degrade receiving water bodies by accelerating erosion that leads to flooding, destruction of plant and animal life, and loss of habitat. Pollutants carried by stormwater impair water quality by increasing levels of nitrogen, phosphorous, suspended solids, biological oxygen demand, and chemical oxygen demand. Temperatures and levels of toxic metals and hydrocarbons tend to increase, dissolved oxygen decreases, and the acidity-alkalinity of the water typically changes. The result is that near shore areas are less able to support wildlife such as juvenile fish and crabs. Also, using the water for human recreation becomes less desirable.

Pertinent Laws and Regulations

The control of pollutants that may be carried by stormwater runoff from vessel maintenance areas is addressed in the Vessel Maintenance and Repair chapter. Please refer to the Laws and Regulations section for more information about the General Permit.

Best Management Practices to Control Stormwater Runoff

A comprehensive guide to stormwater runoff control best management practices is available at njstormwater.org. This guide, "NJ Stormwater Best Management Practices Manual" contains helpful current information regarding low impact development, landscaping recommendations, and details of structural stormwater management measures.

Practice Low Impact Development.

Low impact development promotes the concept of designing with nature. The goal of low impact development is to build on a site without altering the existing hydrologic cycle. The approach takes advantage of a site's natural features, including vegetation, to minimize the need to build expensive stormwater control devices. Rather than responding to the rainfall-runoff process with structural controls, low impact development techniques interact with the process, controlling stormwater runoff and pollutants closer to the source and providing site design measures that can significantly reduce the overall impact of land development on stormwater runoff.

___✓ (5) Protect areas that provide water quality benefits and areas particularly susceptible to erosion and sediment loss.

___✓ (1) Protect natural drainage features and vegetation.

___✓ (5) Minimize land disturbance including clearing and grading.

___✓ (5) Capture and treat stormwater on site.

___✓ (5) Direct the runoff from your parking lot to a bioretention area rather than toward a storm drain. A "rain garden" is an example of a bioretention area. It is an area planted with native vegetation and sited such that it collects stormwater. Water, nutrients, and pollutants are taken up by soil and plants within 24 to 48 hours after a storm. Rain gardens are also attractive areas that can provide shade and wildlife habitat, act as wind breaks, and muffle noise.

Visit the Clean Marina Program website at njcleanmarina.org for additional information about low impact development and rain gardens.

☐ **(21) Total Points for BMP** ☐ **Total N/A Points**

Cultivate Vegetated Areas.

Healthy soil and vegetation capture, treat, and slowly release stormwater. The water is cleaned through a combination of microbial action in the soil, vegetative uptake, evaporation, and transpiration.

___✓ (5) Plant environmentally sensitive landscapes at the edge of parking lots and within islands in parking lots. Refer to Appendix IV for information about the Rutgers Master Gardner Program.

___✓ (5) Plant vegetated buffers between your upland property and the water's edge.

___✓ (1) Provide low maintenance landscaping that contributes to retention and employs native vegetation and minimizes the use of lawns, fertilizers, and pesticides.

___✓ (1) Position downspouts so that they drain to vegetated areas rather than to concrete or asphalt.

___✓ (5) Provide vegetated open-channel conveyance systems that discharge into and through stable vegetated areas.

☐ **(17) Total Points for BMP** ☐ **Total N/A Points**

Minimize Impervious Areas.

The less impervious area on site, the less runoff you will have to manage.

___✓ (5) Pave only when absolutely necessary.

___✓ (1) Break up or interrupt the flow of runoff over impervious surfaces. All runoff from the unconnected impervious area must be sheet flow directed to downstream pervious areas.

___✓ (1) Minimize the length of new roadway required to serve new or expanding marinas.

___✓ (5)* Employ alternatives to asphalt for parking lots and vessel storage areas, e.g., dirt, gravel, seashells, engineered porous pavement. In selecting the type of pervious paving materials, consideration must be given to anticipated character and intensity of use.

___✓ (5)* Use a non-toxic, organic soil binder derived from the Plantago plant family. When this binder is combined with crushed aggregate (e.g., gravel, shells) and soil, it creates a somewhat permeable surface that will resist erosion. For the cost of asphalt or less, it is a resilient material that will not crack during winter freeze/thaw cycles, can be repaired by adding more material and tilling the surface, and can be dug up with a shovel to plant trees and shrubs.

☐ **(17) Total Points for BMP** ☐ **Total N/A Points**

Employ Preventative Source Controls

The most effective way to address water quality concerns is by preventing pollutants from coming into contact with stormwater runoff.

___✓ (1) Install litter fences to prevent litter from blowing off the property.

___✓ (5) Provide for regular trash collection as part of the your maintenance plan.

___✓ (1) Regularly sweep impervious areas and manually collect litter.

___✓ (5) Install storm drain inlets that are designed specifically to prevent the discharge of large trash and debris from entering the drainage system.

___✓ (5) Employ berms, curbing, and/or secondary containment to keep pollutants from coming in contact with stormwater.

☐ **(17) Total Points for BMP** ☐ **Total N/A Points**

Use Structural Controls as Necessary.

Because of space limitations or other constraints, it may be necessary to adopt more traditional practices such as pond systems, wetland systems, infiltration systems, and filter systems.

- Stormwater pond systems capture and slowly release storm flows. Ponds may be permanent (retention ponds) or may hold water only temporarily (detention ponds). A Dry Extended Detention pond is an example of a stormwater pond system. Dry Extended Detention Ponds hold runoff for up to 24 hours after a storm. Water is slowly released through a fixed opening. The pond is normally dry between storms. This type of structure is effective for sites that are 10 acres or more.
- Stormwater wetland systems are designed to replicate the ability of natural wetlands to cleanse and absorb storm flows. A Pocket Wetland is created by excavating to the high water table elevation. Pocket wetlands can serve drainage areas of 5 to 10 acres.
- Infiltration systems are designed to take advantage of soil's natural infiltration capacities and pollutant removal characteristics. A Dry Well is an infiltration system designed to treat roof top runoff. Water is collected in downspouts and directed into a filter composed of crushed stone and fabric. Rain gardens and porous pavement are other examples of infiltration systems.
- Filter systems "strain" runoff to remove pollutants. Conventional Sand Filter Systems are constructed of layers of sand grading from the coarsest on top to the finest below. The sand overlies either a gravel bed (for infiltration) or perforated underdrains (for discharge of treated water). Oil/grit separators are another form of filter system. Water from parking lots and other areas likely to have hydrocarbons should be directed through oil/grit separators (or oil absorbent fabric) before discharging to any other management structure.

Develop schedules for the maintenance of all stormwater management structures and conduct maintenance in accordance with the schedules. Contact NJDEP's Division of Watershed Management (Appendix I) for information about grant funding to local governments for the installation of stormwater management structures in existing developed areas.

Control Sediment from Construction Sites.

___ ⚖ Use devices such as hay bales, silt fences, storm drain filters, sediment traps, and earth dikes to prevent sediments from leaving construction areas.

Stencil Storm Drains.

___ ✓ (5) Stencil storm drains with the words "Don't Dump" and "Drains to River" (if appropriate). Stencils and instructions are available from Clean Ocean Action (Appendix 1) and The Ocean Conservancy (Appendix 1). Be sure to get permission from the municipality that maintains storm drains in your community. Generally, it is the Department of Public Works.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Basic Industrial Stormwater Permit Required

___ ⚖ If your facility conducts boat repair, painting, or maintenance (including washing), the marina must obtain a Basic Industrial Stormwater General Permit (NJ0088315) from NJDEP. The permit covers stormwater discharges from areas involved in boat maintenance (rehabilitation, mechanical repairs, painting, and fueling) and cleaning operations. The General Permit requires that you prepare a Stormwater Pollution Prevention Plan (SPPP), and submit the SPPP Preparation Certification to NJDEP within six months of the facility's permit authorization date.

Stormwater Pollution Prevention Plan Preparation

- The plan must identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity at the marina. Additionally, the plan must describe and ensure practices to reduce pollutants in stormwater discharges from industrial activities at the facility. Refer to Box 5 for a general outline.
- For guidance in developing a stormwater pollution prevention plan, contact NJDEP for a copy of the Stormwater Pollution Prevention Plan Guidance at 609-633-7021. Other resources include: *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* and an EPA published summary document on the same subject. Both are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, telephone (703) 487-4600.

- For existing boatyards, the plan must be completed within six months of obtaining coverage under this permit. The facility must be in compliance with the terms of the plan within 18 months of receiving coverage.
- For new facilities, the plan must be completed and implemented prior to submitting a Request For Authorization for coverage under the general permit.
- Upon request, the plan must be submitted to NJDEP. The permittee may then be notified that the plan does not meet one or more of the minimum requirements. In such an event, the permittee must amend the plan and submit a written certification to NJDEP that the requested changes have been made.
- The permittee shall amend the plan whenever there is a change in design or operation that will have a significant effect on the potential for pollutants to be discharged to state waters. The plan shall also be amended if it proves ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with industrial activity.

Box 4. Contents of a Stormwater Pollution Prevention Plan

1. Pollution prevention team members
2. Description of other existing environmental management plans (e.g., spill prevention plan)
3. Inventory of source materials processed or stored (e.g., waste oil, fuel, wash water)
4. Inventory of non-stormwater discharges (e.g., process wastewater, domestic sewage)
5. Site map identifying buildings, drainage patterns, waste storage areas, etc.
6. Narrative of existing conditions and controls to minimize exposure to stormwater
7. BMP selection and plan design for:
   - A. Washing areas
   - B. Blasting, sanding and painting areas
   - C. Material storage areas
   - D. Engine maintenance and repair areas
   - E. Material handling areas
   - F. General yard areas
8. Revised site map that identifies and locates selected BMPs
9. Implementation schedule for BMPs and employee training
10. Maintenance Schedule for repairs and improvements
11. Inspection Schedule to ensure proper operation and effectiveness of BMP
12. Annual inspection and annual report that describes facility compliance
13. General Requirements (record keeping and certifications)
14. Administration (important contact information to assist you in preparing a SPPP)

Chapter Total: ____ (77)

Chapter Total N/A Points: ____

Best Management Practices for Protecting Sensitive Areas

Minimize Impervious Areas.

___✓ (5) Keep paved areas to an absolute minimum, e.g., designated work areas and roadways for heavy equipment only.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Practice Water-wise Landscaping.

Save on water bills, reduce your maintenance activities, and protect water quality by minimizing your water use.

___✓ (5) Water plants only when necessary. Indicators include wilting shrubs and grass that lies flat and showsfootprints. Water in the cooler early morning or early evening to avoid stressing plants and to minimize water evaporation.

___✓ (5) Select plants suited to the existing conditions (i.e., soil, moisture, and sunlight) so that they will require little care in terms of water, fertilizer, and pesticides. Refer to Appendix IV for a representative list of beneficial plants.

___✓ (1) Water deeply and infrequently rather than lightly and often. Deep watering promotes stronger root systems that enable plants to draw on subsurface water during hot spells and droughts.

___✓ (5) Employ equipment that delivers water prudently. Sprinklers work well for lawns. Soaker hoses or drip irrigation systems deliver water directly to the roots of shrubs, flowers, and vegetables with minimal loss to evaporation.

___✓ (1) Place mulch (wood chips, bark, dry grass clippings, nut shells, etc.) to a depth of 3-4” around plants to keep water in the soil, prevent weeds, and reduce the quantity of sediment picked up by stormwater. Planting groundcovers at the base of trees serves the same function.

___✓ (1) Cluster plants with similar water requirements. This practice will ease your maintenance burden, conserve water, and benefit the plants.

___✓ (5) Replace lawn areas with wildflowers, groundcover, shrubs, and trees.

___✓ (5) Recycle “gray water.” Gray water is water used once for dishwashing or in a washing machine, but is not overly contaminated. It can be filtered and used to water landscaped areas. However, regulations vary, so be sure to check local ordinances for permit requirements and written approval before pursuing this option.

___✓ (1) Direct downspouts into covered containers. Use the collected water on your landscaped areas.

☐ **(29) Total Points for BMP** ☐ **Total N/A Points**

Adopt Integrated Pest Management Practices.

Because of your proximity to the water, it is important to avoid the use of potentially hazardous lawn and garden chemicals whenever possible. Instead, deter unwanted plants or animals with integrated pest management practices. Integrated Pest Management, or "IPM" employs preventive, cultural, biological, and chemical methods to control pests while minimizing impacts to non-target species, wildlife, and water quality.

___✓ (1) Select disease and insect resistant plants that will out-compete common weeds, and that can thrive on your property. Refer to the Master Gardner list of native plants (Appendix IV) and take into consideration sun exposure, slope, drainage, shade, wind, volume of foot traffic, soil type, temperature variations, and other environmental factors. (For sources of native plants visit the Native Plant Society of New Jersey at www.npsnj.org.)

___✓ (1) For rodent problems, correct the sanitation situation or other factors that attract rodents and employ non-chemical controls. Only when absolutely necessary, use chemical bait in bait boxes that meet accepted criteria of "tamper resistant" to children and non-targeted animals.

___✓ (1) Mow lawn areas properly to suppress weeds. Mow varieties of grass that grow better in cooler weather to no less than 2.5 inches in height. Mow grasses that grow better in warm weather to no less than 1.5 inches.

___✓ (1) Pull weeds by hand to reduce reliance on herbicides.

___✓ (1) Boost your own tolerance for weeds and other pests. If it is not harming anything, leave it alone.

___✓ (1) Foster natural predators such as spiders, praying mantis, dragonflies, lacewings, soldier beetles, birds, bats, frogs, lizards, and certain snakes and toads.

___✓ (1) Use natural agents such as milky spore disease for grubs and Japanese beetles, *Bacillus thuringiensis* (BT) to control mosquito and small moth larvae, and sabadilla for chinch bugs.

___✓ (5) Exhaust all other options before using pesticides. Use organic alternatives to chemical pesticides. Also, rather than broadcasting pesticides, apply them directly to problem areas.

___✓ (5) Treat only serious or threatening intolerable pest infestations.

___✓ (5) Purchase the least toxic chemical in the smallest practical quantity

___✓ (5) Do not use pesticides outdoors just before a rainfall or on a windy day.

___✓ (1) Apply insecticides during the evening when honeybees and other beneficial insects are less active.

___✓ (5) Do not apply pesticides near water, e.g., shore, wells, streams, ponds, bird baths, swimming pools, etc.

For additional information and resources regarding the principles and practices of IPM, contact NJDEP's Bureau of Pesticide Compliance (See Appendix I).

☐ **(33) Total Points for BMP** ☐ **Total N/A Points**

Best Management Practices for Creating Habitat Areas

Maintain and/or Develop Vegetated Areas.

Vegetation filters and slows the flow of surface water runoff, stabilizes shorelines, and provides wildlife habitat, flood protection, and visual diversity.

___✓ (5) Maintain or create vegetated buffers (grassy or wooded) between all impervious areas (e.g., parking lots and boat storage areas) and the water.

___✓ (5) Plant vegetated areas with "beneficial" plants; those plants that require minimal care in terms of trimming, watering, and applications of fertilizer and pesticides. Native, or indigenous, plants require little care because they are adapted to the local climate and soil types. Also, many horticultural varieties and imported plants may be considered beneficial if they have few maintenance requirements and if they do not displace naturally occurring vegetation (that is, if they are not invasive). Refer to Appendix IV.

___✓ (1) Select perennial plants instead of annuals. Perennial plants need to be planted only once, tend to shade out most weeds, and few require supplemental water or maintenance.

__✓ (1) Choose plants that bear flowers, fruit, nuts, and seeds to attract birds, small mammals, and other wildlife.

___✓ (5) Do not plant and remove existing non-native invasive plants. (Visit the NJDEP website for a list of non-native invasive plants that should be avoided in New Jersey)

___✓ (1) Maintain proper soil pH and fertility levels. Fertility describes the presence of nutrients and minerals in the soil. Acidity and alkalinity levels are indicated by pH. These two measures together tell you which plants your soil can support. Soil pH may be adjusted by adding lime (base) or gypsum (acid). Add organic matter such as compost, leaf mold, manure, grass clippings, bark, or peat moss to improve fertility.

___✓ (1) Submit a soil sample to the Rutgers Cooperative Extension Service annually to determine fertility, pH, and application rates for soil amendments. For additional information visit the Rutgers website at www.rce.rutgers.edu/ag or call 732-431-7260 for Monmouth County or 732-349-1246 for Ocean County offices.

___✓ (1) Foster beneficial organisms. For example, earthworms move through the soil feeding on microorganisms. In the process, they aerate the soil, improving the flow of water and air to plant roots.

___✓ (5) Compost leaves, branches, grass trimmings, and other organic matter. Use the mature compost to nourish your soil. Alternatively, chip branches and leaves and use as mulch to discourage weeds and to conserve moisture. More complete information on composting is available from the Rutgers Cooperative Extension Service. Visit their website at www.rce.rutgers.edu or call 732-431-7260.

☐ **(25) Total Points for BMP** ☐ **Total N/A Points**

Cultivate Vegetated Areas.

Healthy soil and vegetation capture, treat, and slowly release stormwater. The water is cleaned through a combination of microbial action in the soil, vegetative uptake, evaporation, and transpiration.

___✓ (5) Plant environmentally sensitive landscapes at the edge of parking lots and within islands in parking lots. Refer to Appendix IV for information about the Rutgers Master Gardner Program.

___✓ (5) Plant vegetated buffers between your upland property and the water's edge.

___✓ (1) Provide low maintenance landscaping that contributes to retention and employs native vegetation and minimizes the use of lawns, fertilizers, and pesticides.

___✓ (1) Position downspouts so that they drain to vegetated areas rather than to concrete or asphalt.

___✓ (5) Provide vegetated open-channel conveyance systems that discharge into and through stable vegetated areas.

☐ **(17) Total Points for BMP** ☐ **Total N/A Points** **Chapter Total:**

Chapter Total N/A Points:
____ (219) ____

Facility Management

Once you have adopted some of the best management practices outlined in this Guidebook tell people about it! Train your staff so that they will routinely minimize pollution. Inform customers and boaters how their actions can affect water quality and let the public know that you are doing your part to protect the environment.

Staff Training

Stormwater Pollution Prevention Plan.

The Basic Industrial Stormwater General Permit can be easily implemented if you teach your employees about the components and goals of the stormwater pollution prevention plan.

___✓ (5) Train your staff on the components of your stormwater pollution prevention plan. Concerning the following topics as applicable:

- Used oil management
- Spent solvent management
- Proper disposal of spent abrasives
- Disposal of vessel wastewater
- Spill prevention and control
- Fueling procedures
- General good housekeeping
- Painting and blasting procedures
- Used battery management
- Proper use of equipment such as dustless sanders and high-volume, low-pressure paint spray guns
- Trash receptacle, dumpster, and other waste container management

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Emergency Response Plans.

As a result of the presence of hazardous materials, as well as the nature of daily activities that occur at boatyards, there is always a chance that situations may arise that require immediate response. Calling 911 may be appropriate in some instances, but additional staff response will be necessary in almost every emergency situation. Without established procedures and a handy reference guide, important steps may be overlooked. During an emergency, when time is of the essence, it is imperative that people know what to do and how to do it.

___✓ (5) Develop specific plans and response procedures and review with staff at least twice a year.

___✓ (5) Train employees in the use of containment measures.

___✓ (1) Run emergency response drills at least twice annually.

___✓ (1) Invite local fire department offcials to demonstrate emergency response procedures at your facility.

☐ **(12) Total Points for BMP** ☐ **Total N/A Points**

Be Watchful.

___✓ (5) Involve all employees in checking your facility for waste. Encourage your staff to look for and immediately address the following:

- Unconfined sanding, painting, varnishing, or cleaning
- Maintenance debris being washed into the stormdrains or catch basins
- The use of environmentally harmful cleaning products

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Approach Polluters.

___✓ (5) Determine who will address boaters and contractors who are polluting. Generally, this is a job for the manager. Inform your staff with written policy and procedures whether they should approach polluters and report the incident to the manager, or whether staff should report the activity to the manager for response.

- Politely explain to boaters and contractors why their actions are harmful to the environment or to human health and safety. Offer a more environmentally sensitive method and ask the boater or contractor to cease their activity until it can be accomplished with less environmental impact. It is recommended that you require boaters and contractors to practice pollution prevention as a condition of their contracts.
- If the problem persists, take these additional steps:
  - Talk to the boater or contractor again.

- Mail a written notice asking that the harmful practice stop. Keep a record of the mailing.
- If you can remove the problem from the dock yourself, do so and charge the boater or contractor for the cost of removal and cleanup.
- Ask the tenant or contractor to leave your marina.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Attend Relevant Workshops and Training.

___✓ (5) Attend or send staff to relevant workshops such as those sponsored by the Clean Marina Program or other professional training programs.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Maintain Training Records.

___✓ (1) Record training dates, topics, and names of employees and instructors.

___✓ (1) Keep copies of instructional material.

☐ **(2) Total Points for BMP** ☐ **Total N/A Points**

Inform Patrons

The Basic Industrial Stormwater General Permit requires that customers and contractors be informed about pollution control practices and be required to use them.

Post Best Management Practices Signs.

___✓ (5) Post signs in vessel maintenance areas and at dumpsters and recycling stations. Be sure the signs are visible. Signs must be durable, eye catching, and appropriately sized. Post your facilities environmental policy in a conspicuous location. See samples below.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Distribute Literature to Patrons.

___✓ (1) Copy and distribute the Clean Boating Tip Sheets included in this Guidebook or create your own. Boater tip sheets on Vessel Maintenance, Petroleum Control, Boat Sewage and Waste Disposal can be found at the end of each associated chapter.

___✓ (1) Include articles about best management practices in your newsletter or other mailings.

___✓ (1) Get free copies of clean boating materials from organizations such as the Jacques Cousteau National Estuarine Research Reserve, New Jersey Marine Sciences Consortium, New Jersey Sea Grant College Program, the Marine Trades Association of New Jersey, Clean Ocean Action, New Jersey Department of Environmental Proteection, SeaLand Technology, The Ocean Conservancy, Rutgers Cooperative Extension, the Marine Environmental Education Foundation, the American Boat and Yachting Council, and Boat/U.S. Clean Water Trust.

___✓ (1) Distribute United States Coast Guard publications summarizing Federal boating requirements to your customers.

☐ **(4) Total Points for BMP** ☐ **Total N/A Points**

Make Use of Informal Communication Mechanisms.

___✓ (1) Pass along pollution prevention information in conversations with patrons and contractors.

___✓ (1) Post information about best management practices on a bulletin board.

☐ **(2) Total Points for BMP** ☐ **Total N/A Points**

Public Relations

Publicize Your Good Deeds.

___✓ (1) Make sure to publicize your good deeds:

- Seek free publicity with local press, magazines, television, and radio outlets.
- Prepare news releases to highlight your innovative practices, new equipment or services, available literature, or a workshop you are sponsoring. Submit your news release to the Clean Marina Program for posting on its website.
- Plan news releases to coincide with seasonal activities, e.g., helpful tips for winterization.
- Start news releases with a contact person's name and phone number, the date, and a headline. The first paragraph should contain vital information: who, what, when, and where. Fill in with secondary information and support data. Conclude with a "call to action" (e.g., visit the marina for a demonstration of the new plastic media blasting system). Double-space the text, One page is best. It should be no longer than two pages. Refer to the Associated Press Style Book for additional formatting information.
- Learn media deadlines and send releases in time to meet them.
- Get press kits from manufacturers of environmentally sensitive products. With their permission, use their photographs and product information.

☐ **(1) Total Points for BMP** ☐ **Total N/A Points**

Business Practices

Offer Environmental Audits for Boaters.

___✓ (5) Offer environmental audits to your customers.

- Inspect engines, bilges, fuel systems, and marine sanitation devices.
- Sell oil absorbent pads, air/fuel separators, etc.

☐ **(5) Total Points for BMP** ☐ **Total N/A Points**

Avoid Environmental Surcharges.

___✓ (1) Charge for tangible items such as tarps, vacuum sanders, and protective clothing rather than a flat "environmental surcharge."

☐ **(1) Total Points for BMP** ☐ **Total N/A Points**

Best Management Practices for Marina Facilities and Structures

Conserve Water.

___✓ (1) Equip all freshwater hoses with automatic shutoff nozzles.

___✓ (1) Fix leaks and drips.

___✓ (1) Install "low-flow" faucets, toilets, and showerheads.

☐ **(3) Total Points for BMP** ☐ **Total N/A Points**

Educate Boaters.

As the generators and conveyors of sewage, boaters need to be informed about the proper disposal of sewage. They must also be encouraged to properly maintain their MSDs and to purchase environmentally friendly treatment products for their heads and holding tanks.

___✓ (1) Photocopy and distribute the following Clean Boating Tip Sheet to your tenants. There is room to add your marina's name and logo.

___✓ (1) Contact the Ocean Conservancy (1-202-429-5609) for marine debris educational materials at minimal cost.

___✓ (1) Post information about county Household Hazardous Waste Collection events and recycling centers.

☐ **(3) Total Points for BMP** ☐ **Total N/A Points**

Be Diligent.

Be absolutely diligent in containing pollution; your own and that created by your staff. Boaters and customers will notice and follow your example.

Chapter Total:
____ (52)

Chapter Total N/A Points:
____

Laws and Regulations

This section of laws, regulations, and permit information is by no means comprehensive. It does provide:

- an introduction to the responsibilities of certain Federal and State agencies,
- an overview of some relevant laws,
- a look at the Basic Industrial Stormwater General Permit, and
- a synopsis of information about other pertinent permits and licenses.

Select Federal Agencies and Their Jurisdictions

The **Environmental Protection Agency (EPA)** is responsible for ensuring that environmental protections are considered in U.S. policies concerning economic growth, energy, transportation, agriculture, industry, international trade, and natural resources; ensuring that national efforts to reduce environmental risk are based on the best available scientific information; and providing access to information on how business, state and local governments, communities, and citizens can prevent pollution and protect human health and the environment. The Office of Water is responsible for implementing, among other laws, the Clean Water Act, portions of the Coastal Zone Act Reauthorization Amendments of 1990, the Resource Conservation and Recovery Act, and the Marine Plastics Pollution Research and Control Act. Activities are targeted to prevent pollution wherever possible and to reduce risk to people and ecosystems in the most cost effective manner.

The mission of the **National Oceanic and Atmospheric Administration (NOAA)**, an agency within the U.S. Department of Commerce, is to describe and predict changes in the earth's environment and to conserve and wisely manage the nation's coastal and marine resources to ensure sustainable economic opportunities. NOAA provides a wide range of observational, assessment, research, and predictive services for estuarine and coastal ocean regions. NOAA developed an array of programs to address national-scale estuarine issues and specific problems affecting individual estuarine and coastal ocean systems. In partnership with EPA, NOAA implements the Coastal Zone Act Reauthorization Amendments of 1990.

The **United States Army Corps of Engineers (USACE)** is responsible for ensuring adequate flood control, hydropower production, navigation, water supply storage, recreation, and fish and wildlife habitat. The Corps contracts and regulates coastal engineering projects, particularly harbor dredging and beach nourishment projects. They also review and permit coastal development and artificial reef projects. A joint permit from the NJDEP and the USACE is required for all dredging projects.

The **United States Coast Guard**, a part of the Department of Homeland Security, protects the public, the environment, and U.S. economic interests. They promote

maritime safety and marine environmental protection, enforce maritime law, tend all federal navigation aids, and regulate and monitor recreational and commercial vessels and waterfront facilities

Select State Agencies and Their Jurisdictions

The mission of the **New Jersey Department of the Environment (NJDEP)** is to assist the residents of New Jersey in preserving, restoring, sustaining, protecting and enhancing the environment to ensure the integration of high environmental quality, public health and economic vitality. NJDEP coordinates all natural resources activities within the state affecting the state's bays, rivers, tributaries, fisheries, forests, parks, wildlife, and geology. The Department is responsible for implementing rules, policies, and programs that provide the State with clean air, clean and plentiful water, safe and healthy communities, healthy ecosystems, abundant open space, and an open and effective government. NJDEP is the lead organization for the sewage pumpout program and issues general permits for marina activities.

The **New Jersey State Police, Marine Services Unit** is a support unit for marine activities. The Unit develops and conducts training courses, reviews marine accidents, processes NJ Boat Safety Certificates, and performs other marine related functions including enforcement of environmental laws.

The **New Jersey Department of Transportation, Office of Maritime Resources (OMR)** advances public education on all maritime and marine issues and serves as the primary advisory body and lead agency for support of New Jersey's $50 billion maritime industry that includes boat manufacturing and sales, marine trades, recreational and commercial boating and maritime environmental resources. OMR supports technology research and development and investigates innovative dredge material management technologies to ensure a balance between development and the protection of ecosystems.

Select Federal Laws of Interest to Marinas and Boating Support Facilities

Clean Air Act Amendments, 1990

The "gasoline marine final rule," part of the 1990 Clean Air Act Amendments establishes emission standards for new spark-ignition gasoline marine engines. The rule applies to outboard engines and gasoline marine engines used in personal watercraft and jet boats. Because sterndrive and inboard engines offer cleaner technologies, emission standards were not set for these types of engines.

Boat engines currently in use are not affected by this regulation. The regulation requires manufacturers of outboard and personal watercraft marine engines to achieve yearly emission reductions by meeting a corporate average emission standard. This allows them to build some engines with emission levels lower than the emission standard and some engines with emission levels higher than the standard, provided the manufacturer's overall corporate average is at or below the standard.

Clean Vessel Act

The Clean Vessel Act (CVA) provides funds to states to construct, renovate, and operate pumpout stations and to conduct boater environmental education. Contact the Marine Trades Association of New Jersey for information about receiving grant funding to install a pumpout system.

Coastal Zone Act Reauthorization Amendment of 1990

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) provided the impetus for the Clean Marina Program. Section 6217 of the Amendments require that nonpoint source pollution from marinas be contained. Through the Clean Marina Program, New Jersey is promoting voluntary adoption of best management practices to minimize the impact of marinas on surrounding land and water.

Federal Water Pollution Control Act

The Federal Water Pollution Control Act, commonly known as the Clean Water Act, addresses many facets of water quality protection. It provides the authority for the National Pollutant Discharge Elimination System (NPDES) permit program for point sources of pollution. The Act prohibits the discharge of oil or hazardous substances into U.S. navigable waters. It also prohibits the use of chemical agents like soaps, detergents, surfactants, or emulsifying agents to disperse fuel, oil, or other chemicals without the permission of the U.S. Coast Guard.

All vessels 26 feet in length and over must display a placard that is at least 5 by 8 inches, made of durable material, and fixed in a conspicuous place in the machinery spaces or at the bilge pump control station. The placard must read:

Discharge of Oil Prohibited

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, or causes a sludge or emulsion beneath the surface of the water. Violators are subject to a penalty of $5,000.

The Clean Water Act requires that the U.S. Coast Guard be notified anytime a spill produces a sheen on the water. Failure to report a spill may result in civil penalties.

The Act further requires that all recreational boats with installed toilets have an operable marine sanitation device on board (see “State Laws” below).

Because of the harm associated with petroleum, the discharge of oil is absolutely prohibited. 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, or causes a sludge or emulsion beneath the surface of the water. Violators are subject to a penalty of $5,000.

The Interagency National Response Center must be notified any time a spill produces a sheen on the water. Call the National Response Center at 1-800-424-8802. Report the location, source, size, color, substance, and time of the spill. Failure to report a spill may result in fines.

The Clean Water Act (33 CFR 153.305) also prohibits the use of soaps or other dispersing agents to dissipate oil on the water or in the bilge without the permission of the Coast Guard. Soaps, emulsifiers, and dispersants cause the petroleum to sink in the water column and mix with sediments where they will remain for years. Also, the soaps themselves are pollutants. You may be fined up to $25,000 per incident for the unauthorized use of soap or other dispersing agents on the water or in the bilge.

The Clean Water Act established the Section 404 Permit Program, under which the Secretary of the Army, acting through the Chief of the Engineers of the United States Army Corps of Engineers, may issue permits for the discharge of dredged or fill material into "waters of the United States" as identified in the Clean Water Act. Section 404(g)(1) of the Clean Water Act provides that the Governor of any state can apply to the Administrator of the Environmental Protection Agency to administer its own individual and general permit program for the discharge of dredged or fill material into state regulated waters within its jurisdiction.

The State of New Jersey assumed the Section 404 Program under the Clean Water Act on March 2, 1994 for discharges of dredged or fill material into waters of the United States in New Jersey that are not currently used, or susceptible for use, in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce shoreward to the ordinary high water mark, including wetlands adjacent thereto where the United State Army Corps of Engineers retains jurisdiction. In these non-assumable waters and adjacent wetlands both a State Freshwater Wetlands permit and a Federal 404 Permit issued by the United States Army Corps of Engineers are required.

Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) or Superfund Amendments and Reauthorization Act of 1986 (SARA Title III)

EPCRA (40 CFR 355) is enforced by the EPA and managed by the NJDEP Community Right to Know Program (CRTK). EPCRA applies to storage and handling of hazardous materials (chemicals) and requires that facilities report storage of certain chemicals in quantities above designated thresholds to state and local authorities. The CRTK collects, processes, and disseminates the chemical inventory, environmental release and materials accounting data. This information is used by the public, emergency planners, and first responders to determine the chemical hazards in the communtity.

EPCRA consists of Sections that prescribe reporting to state and local authorities. These are discussed below by Section.

- Section 311, hazardous chemical storage reporting, or the community right to know standards. The Occupational Safety and Health Administration requires employers to retain copies of Material Safety Data Sheets (MSDS) for each hazardous chemical at the facility that is available to employees. The MSDS must be provided by distributors of the hazardous material. You must complete a "Section 311- List of Chemicals Form" if you have chemicals that have MSDSs, and you meet one of the following conditions:
  1) you store any substance listed as an "extremely hazardous substance" in quantities equal to or greater than the listed "threshold planning quantity" as found in 40 CFR355.30e(2)(1),
  2) you store 10,000 lbs. or more of any hazardous substance requiring an MSDS.

You must provide the report to the CRTK and to local emergency coordinators within three months of first having reportable quantities of hazardous chemicals at your facility, and it must be updated when new hazardous chemicals are stored in reportable quantities.

- Section 312, annual reporting.
  If you are subject to Section 311 reporting, you must submit an annual "NJ Community Right to Know Survey" to the CRTK. This requires an inventory of hazardous chemicals and their storage locations. The survey must be submitted to CRTK, local fire and police departments, local emergency planning committee, and the Right to Know County Lead Agency by 1 March yearly.

- Section 302, emergency planning notification form.
  If you store any of the listed 356 "extremely hazardous substances" (EHS) in excess of the reporting threshold on the federal EPCRA 302 list of extremely hazardous substances, you must submit the CRTK surveys within 60 days of when the substance becomes present at your facility. If you must file, you must also designate a facility emergency coordinator.

- Section 304, accidental release notification.
  Although any spill of a chemical substance into New Jersey waters must be reported to NJDEP, you only need to report a chemical spill to the federal government under certain circumstances.

Marine Plastic Pollution Research and Control Act

The Marine Plastic Pollution Research and Control Act (MPPRCA) is the U.S. law that implements an international pollution prevention treaty known as MARPOL. The MPPRCA of 1987 (Title II of Public Law 100-220) restricts the overboard discharge of garbage. Its emphasis is on plastics; it is illegal to dispose of plastic materials into the water anywhere. The disposal of other garbage is restricted according to a vessel's distance from shore. Remains from fish cleaning are sometimes an exception. The discharge of fish waste into New Jersey waters is undesirable, and in some instances illegal, such as in the Manasquan River.

Within U.S. lakes, rivers, bays, sounds, and within 3 nautical miles from shore, it is illegal to dump plastic, paper, rags, glass, metal, crockery, dunnage (lining and packing material, nets, lines, etc.), and food. Between 3 and 12 nautical miles from shore, it is illegal to dump plastic and any other garbage that is greater than one inch in size. Between 12 and 25 nautical miles from shore, it is illegal to dump plastic and dunnage. Beyond 25 nautical miles, it is illegal to dump plastic.

The dumping restrictions apply to all vessels operating in all navigable waters of the United States and the 200-mile Exclusive Economic Zone. 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.

Under the national law, 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).

Oil Pollution Act of 1990

The Oil Pollution Act of 1990 (OPA) was written in direct response to the Exxon Valdez oil spill. The law primarily addresses commercial oil shipping (e.g., tankers must be double-hulled, captains may lose their licenses for operating a vessel under the influence of drugs or alcohol). However, some of the requirements apply to recreational boating. Most notably, the responsible party for any vessel or facility that discharges oil is liable for the removal costs of the oil and any damages to natural resources; real or personal property; subsistence uses; revenues, profits, and earning capacity; and public services like the cost of providing increased or additional public services. The financial liability for all non-tank vessels is $600 per gross ton, or $500,000, whichever is greater. Also, substantial civil penalties may be imposed for failing to report a spill, for discharging oil, for failure to remove oil, failure to comply with regulations, and gross negligence.

Organotin Antifoulant Paint Control Act of 1988

The Organotin Antifoulant Paint Control Act restricts the use of organotin antifouling paints, including tributyl tin-based paints. Tributyl tin (TBT) paints may be used only on boats longer than 82 feet (25 meters), or any length aluminum-hulled vessels, and on outboard motors and lower drive units. Under the provision of the state antifoulant paint regulations, marina operators must obtain a license from the NJDEP to purchase and apply organotin antifouling paints and must have a licensed pesticide applicator on staff. It is illegal for anybody without a license to distribute, sell, use, or possess antifoulants containing tributyl tin. The only exception is for spray cans that are 16 ounces or less and which do not exceed the "acceptable release rate" of less than or equal to 4.0 micrograms per square centimeter per day. TBT paints are not anticipated to be available much longer, as a result of EPA and the last US producer of TBT reaching agreement on the phase-out of TBT products. For additional information contact NJDEP's Bureau of Pesticide Compliance at 609-984-6568.

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 waters of the United States.

Resource Conservation and Recovery Act

The Federal Resource Conservation and Recovery Act (RCRA) provides the legal authority to establish standards for handling, transporting, and disposing of hazardous wastes. RCRA and the State's Solid Waste regulations (N.J.A.C. 7:26-1 et seq.), Hazardous Waste regulations (N.J.A.C. 7:26g et seq.), and Recycling regulations (7:26a et seq.) govern the management of hazardous waste in the State of New Jersey.

Hazardous wastes are ignitable, corrosive, reactive, and/or toxic substances. New Jersey references EPA's list of hazardous wastes in the State's hazardous waste law. The NJDEP website at www.state.nj.us/dep/dshw provides a waste classification form. The form includes a list of many of the contaminants of concern. Lists of facilities and transporters that handle hazardous wastes are also available on the NJDEP website.

Most marinas deal with limited quantities of hazardous waste and thus are considered "conditionally exempt small quantity generators." Facilities that generate less than 100 kg (about 220 lbs. or 30 gallons) of hazardous waste per month and which do not accumulate more than 1,000 kg (about 2,200 lbs.) of waste at any one time are considered "conditionally exempt small quantity generators." Conditionally exempt small quantity generators are not required to register with the EPA and do not need a hazardous waste generator identification number. Send hazardous waste from small quantity generators to a disposal facility that is permitted, licensed, or registered by the State to manage municipal or industrial solid waste.

Hazardous waste "generators" are those individuals or companies that produce greater than 100 kilograms (about 220 pounds or 30 gallons) of hazardous waste during one calendar month or who store more than 1,000 kg (about 2,200 lbs.) at any one time. The following requirements apply to all hazardous waste generators.

- All generators and transporters of hazardous waste must have an Environmental Protection Agency (EPA) identification number provided by the NJDEP. To apply for an identification number, use EPA Form 8700-12 (available from NJDEP).
- Store hazardous waste in UL listed or Factory Mutual approved containers labeled and marked according to Department of Transportation regulations. Refer to 49 CFR 178. Mark the date accumulation begins on each container. Store containers on pallets to prevent corrosion and in an area able to contain any leaks. Keep containers closed when not adding or removing waste. Inspect containers weekly.
- Store quantities of waste greater than 100 kg (220 lbs.) but less than 1,000 kg (2,200 lbs.) for a maximum of 180 days. Any quantity of waste greater than 1,000 kg may be stored for a maximum of 90 days.
- Prepare a written emergency contingency plan if you generate more than 100 kg (220 lbs. or 30 gallons) of hazardous waste per month or accumulate more than 1,000 kg at any one time. Copies must be given to NJDEP and local agencies.
- Document all hazardous waste training in each employee's personnel file. All personnel who handle hazardous waste must receive training to ensure compliance with the state regulations.
- Transporters must be registered and are listed on the NJDEP web page.
- Anyone who sends hazardous waste offsite for treatment, storage, or disposal must prepare a manifest. Ensure that all of the information on the manifest is correct. The hazardous waste manifest must accompany all hazardous wastes "from cradle to grave." It is your responsibility to ensure that the driver and the vehicle are certified to handle hazardous waste. Each hazardous waste transporter must sign the manifest, as should the operator of the treatment, storage, disposal facility. A final copy must be returned to the generator once the waste is properly treated, stored, or disposed of.
- Submit a report to NJDEP every two years that summarizes hazardous waste activities during odd-numbered years. It is recommended, but not mandatory, to also report figures for even-numbered years.
- Retain all records, including manifests and waste analysis and annual reports, for at least three years. The files must be available for NJDEP's inspection.

Select State Laws of Interest to Marinas

Marine Sanitation Devices

It is illegal to discharge raw sewage from a vessel within U.S. territorial waters, i.e., anywhere other than three or more miles out into the open ocean. The Federal Clean Water Act and New Jersey's Marine Sewage Treatment Act (P.L. 1988, Chapter 117) require that any vessel with an installed toilet be equipped with a certified Type I, Type II, or Type III marine sanitation device (MSD):

- Type I systems mechanically cut solids, disinfect the waste with a chemical additive or with chlorine disassociated from salt water with an electronic jolt, and discharge the treated sewage overboard. The fecal coliform bacteria count of the effluent may be no greater than 1,000 per 100 milliliters and may not contain any floating solids.

- Type I and II systems are similar except that the Type IIs treat the sewage to a higher standard: effluent fecal coliform bacteria levels may not exceed 200 per 100 milliliters, and total suspended solids may not be greater than 150 milligrams per liter. Type IIs also require more space and have greater operating energy requirements.

- Type III systems do not allow for sewage discharge. The most common form of a Type III system is a holding tank. Other forms include recirculating and incinerating systems.

Vessels 65 feet and under may have any of the three types of MSDs. Vessels over 65 feet must have a Type II or III system. Additionally, Type I and Type II systems must display a certification label affixed by the manufacturer. A certification label is not required on Type III systems.

The State law allows a vessel with an installed toilet to have a "Y" valve or other means to by-pass the sanitation system. Within State waters all pathways for overboard discharge of raw sewage must be secured.

The "Y" valve may be secured with a padlock or a non-reusable nylon tie known as a wire tie. Alternatively, the valve handle can be moved to the closed position and removed.

State law prohibits the discharge of sewage in "No Discharge" zones. No Discharge zones are proposed by the State and approved or "designated" by the U.S. Environmental Protection Agency. Vessels with an installed toilet typically have a "Y" valve or other means to bypass the sanitation system. Within the state's No Discharge Zones, all pathways for over-board discharge of raw sewage must be secured. The "Y" valve may be secured with a padlock or a non-reusable nylon tie known as a wire tie. Alternatively, the valve handle can be moved to the closed position and removed.

MSD requirements do not apply to vessels with portable toilets. Empty portable toilets ashore. Remember, it is illegal to discharge raw sewage to any State waterway. Most pumpout facilities have wand attachments to empty portable toilets. Some marinas have portable toilet dump stations. Ask your marina operator how to dispose of waste from portable toilets.

Finally, any vessel with an installed toilet that is offered as a non-captained charter must be equipped with an operational MSD. The lease agreement signed by the leasing party must include a paragraph out-

Pumpout Systems

The State's Marine Sewage Treatment Act of 1988 requires:

- All publicly owned or operated marinas, which accommodate vessels equipped with marine sanitation devices, to provide sewage pumpout facilities and portable toilet emptying receptacles.
- Installation of a pumpout system is required as a condition of receiving a Waterfront Development permit from the NJDEP. NJDEP has required MSD pumpout facilities as a condition of approval for new or expanded marinas of 10 or more slips since February 6, 1986.

No Discharge Areas

A No Discharge Area (NDA) is an area of water that requires greater environmental protection and where even treated sewage may not be discharged from a boat. When operating in a NDA, Type I and Type II systems must be secured to prevent discharge. All freshwater lakes, reservoirs, and rivers not capable of interstate vessel traffic are defined by the Federal Clean Water Act as No Discharge Areas. States, with the approval of the U.S. Environmental Protection Agency, may establish NDAs in other State waters. As New Jersey continues its efforts to cleanup State waters, certain areas may be considered for NDA designation. The following rivers are classified as NDA's: Hudson River, Navesink River, Shrewsbury River, Shark River, Manasquan River and Barnegat Bay.

Pollutant Discharge Prohibited

The New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-6) prohibits the discharge of any pollutant into state waters without a discharge permit.

The Coastal Area Facility Review Act (N.J.S.A. 13:19-1 et seq.)

The Coastal Area Facility Review Act (CAFRA) applies to projects near coastal waters in the southern part of the State. The CAFRA area begins where the Cheesequake Creek enters Raritan Bay in Old Bridge, Middlesex County. It extends south along the coast around Cape May, and then north along the Delaware Bay ending at the Kilcohook National Wildlife Refuge in Salem County. The inland limit of the CAFRA is an irregular line that follows public roads, railroad tracks, and other features. The width of the CAFRA area varies from a few thousand feet to 24 miles. The law divides the CAFRA area into zones, and regulates different types of development in each zone.

CAFRA regulates a wide variety of residential, commercial, or industrial development, including construction, relocation, and enlargement of buildings or structures; and associated work, such as excavation, grading, site preparation, and the installation of shore protection structures. CAFRA prescribes designs for new marinas that promote water quality and protect public health.

The Coastal Area Facility Review Act requires that coastal development employ a site design that, to the extent feasible, minimizes the amount of impervious coverage on a project site. In addition, the development must use the best available technology to minimize the amount of stormwater generated, minimize the rate and volume of off-site stormwater runoff, maintain existing on-site infiltration, simulate natural drainage systems, and minimize the discharge of pollutants to ground or surface waters. Consistent with the provisions of the Stormwater Management Rule, the overall goal of the post-construction stormwater management system design shall be the reduction from the predevelopment level of total suspended solids and soluble contaminants in the stormwater.

CAFRA exempts certain minor activities such as maintenance, plantings, decks or similar structures at a residence, rebuilding a damaged structure on the same building footprint (if it was damaged after 7/19/94). Contact the NJDEP, Land Use Regulation Program for a complete list of available exemptions.

The Waterfront Development Law

The Waterfront Development Law (N.J.S.A. 12:5-3) is a very old law, passed in 1914, that seeks to limit problems that new development could cause for existing navigation channels, marinas, moorings, other existing uses, and the environment.

Development in a tidally flowed New Jersey waterway requires a Waterfront Development Permit. Examples of regulated projects include installation of docks, piers, pilings, bulkheads, marinas, bridges, pipelines, cables, and dredging.

Outside of the CAFRA area, the Waterfront Development Law also regulates the area adjacent to the water, extending from the mean high water line to the first paved public road, railroad or surveyable property line. The regulated area extends at least 100 feet but no more than 500 feet inland from the tidal water body. NJDEP must authorize construction, reconstruction, alteration, expansion or enlargement of structures, excavation, and filling that would occur in the regulated area.

The Waterfront Development Program exempts the repair, replacement, or reconstruction of some legally existing docks, piers, bulkheads and buildings, if the structure existed before 1978 and if other conditions are met.

Wetlands Act of 1970

The land immediately adjacent to tidal waters often contains coastal wetlands. These wetland areas are a vital coastal resource serving as habitat for many creatures. The wetlands also serve as buffers that protect upland areas from the flooding and damage caused by storms.

The Wetlands Act of 1970 (N.J.S.A. 13:9A-1 et seq.) requires NJDEP to regulate development in coastal wetlands. Any time land is located near tidal water there is a good possibility of coastal wetlands on the property. Some signs that may indicate the presence of wetlands are tall reeds and grasses, or ground that is often soggy. The regulated coastal wetlands are shown on maps prepared by the NJDEP. Unlike NJDEP's freshwater wetlands maps, the coastal wetlands maps are used to determine jurisdiction. You must have a coastal wetlands permit to excavate, dredge, fill or place a structure on any coastal wetland shown on the maps.

Tidelands Act

The Tidelands Act (N.J.S.A. 12:3) protects "riparian lands" that are currently or formerly flowed by the tide of a natural waterway. This includes lands that were previously flowed by the tide but have been filled and are no longer flowed by the tide. Tidelands are owned by the citizens of New Jersey. You must first get permission from the state and pay for the use of these lands, in the form of a tidelands license, lease or grant.

Freshwater Wetlands Protection Act

Wetlands are commonly referred to as swamps, marshes, or bogs. However, many wetlands in New Jersey are forested and do not fit the classic picture of a swamp or marsh. Previously misunderstood as wastelands, wetlands are now being recognized for their vital ecological and socioeconomic contributions.

In New Jersey and throughout the United States, wetlands are protected on public and private property. Wetlands contribute to the social, economic, and environmental health of our nation in many ways:

- Wetlands protect drinking water by filtering out chemicals, pollutants, and sediments that would otherwise clog and contaminate our waters.
- Wetlands soak up runoff from heavy rains and melting snows, providing natural flood control.
- Wetlands release stored flood waters during droughts.
- Wetlands provide critical habitats for a major portion of the state's fish and wildlife, including endangered, commercial and recreational species.
- Wetlands provide high quality open space for recreation and tourism.

Many of these values were not widely appreciated until the 1970s and 1980s. Over the last two hundred years, the United States has lost over 117 million acres of wetlands through dredge and fill activities, drainage, development, pollution, and natural causes. Erosion, flooding, and sedimentation has resulted. Furthermore, the decrease in wetlands has decreased populations of waterfowl, fish, and shellfish. With over 54 percent of the total wetlands in the continental United States already lost, and an additional 200,000 acres disappearing every year, protecting our remaining wetlands has become a critical national priority.

In 1994, NJDEP assumed responsibility for administering the federal wetlands program (also known as the 404 program) in delegable waters of the state. In non-delegable waters, the USACE retains jurisdiction under federal law, and both federal and state requirements apply. A project in non-delegable waters requires two permits, one from NJDEP and one from the USACE. New Jersey protects wetlands under the New Jersey Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 et seq. This law also protects transition areas or "buffers" around freshwater wetlands from development which would impair the wetlands' ability to provide the values listed above.

The following activities are regulated in freshwater wetlands:

1. The removal, excavation, disturbance or dredging of soil, sand gravel, or aggregate material of any kind;
2. The drainage or disturbance of the water level or water table so as to alter the existing elevation of groundwater or surface water, regardless of the duration of such alteration, by:
    i. Adding or impounding a sufficient quantity of stormwater or other water to modify vegetation, values or functions of the wetland; or
    ii. Draining, ditching or otherwise causing the depletion of the existing groundwater or surface water so as to modify the existing vegetation, values or functions of the wetland;
3. The dumping, discharging or filling with any materials;
4. The driving of pilings;
5. The placing of obstructions, including the depositing, construction, installing or otherwise situating any obstacle which will affect the values or functions of a freshwater wetland;
6. The destruction of plant life which would alter the character of a freshwater wetland, including killing vegetation by applying herbicides or by other means, the physical removal of wetland vegetation, and/or the cutting of trees; and
7. Placement of any portion of a residential development project.

Also regulated is the discharge of dredged or fill material into state open waters, except for a discharge into a non-delegable state open water which is subject to the Waterfront Development Law.

The following are some of the activities that are not regulated:

1. The placement of temporary structures (such as observation blinds, waterfowl blinds, artificial nesting structures, or sign posts) for observing, managing, or harvesting fish or wildlife, provided that the structures:
    i. Do not have permanent foundations;
    ii. Do not require the deposition of fill material; and
    iii. Have a footprint no larger than 32 square feet;
2. Hand trimming of trees or other vegetation, provided the trimming does not alter the character of the freshwater wetland; and
3. The driving of one or more pilings in a State open water, if the pilings are not regulated by the USACE under the Federal 404 program. The USACE regulates the placement of pilings if the placement would have the effect of a discharge of fill material.
    i. Activities that generally do not have the effect of a discharge of fill material and thus are not regulated are:
        (A) Placing pilings for linear projects, such as bridges, elevated walkways, and utility line structures; and
        (B) Placement of pilings for piers or docks:
    ii. Activities that generally do have the effect of a discharge of fill material and thus are regulated include, but are not limited to:
        (A) Projects where the pilings are so closely spaced that sedimentation rates would be increased;
        (B) Projects in which the pilings themselves effectively would replace the bottom of a water body;
        (C) Projects involving the placement of pilings that would reduce the reach or impair the flow or circulation of waters of the United States;

(D) Projects involving the placement of pilings which would result in the adverse alteration of elimination of the aquatic functions; and

(E) Projects where the pilings are intended to be used for structural support of a building such as a commercial or residential structure.

Underground Storage Tanks

A regulated underground storage tank, that is a tank more than 2,000 gallons in capacity with more than 10% of its volume below the ground surface containing motor fuel, non-petroleum hazardous substances or heating oil, must have spill, overfill, and corrosion protection (N.J.A.C. 7:14B). An underground storage tank (UST) must also have a verifiable leak detection method and a current registration with NJDEP. Also required are routine testing for cathodic protection, investigation of suspected releases, routine inspection of spill catchment basins, dispenser sumps and piping sumps, permits for repairs, and various record-keeping regarding testing, leak detection and repairs. All work performed that is required by regulation must be conducted by an individual certified by the State.

Environmental Permits and Licenses

Basic Industrial Stormwater General Permit (NJ0088315)

Who must obtain a permit?

In 1990, EPA implemented regulations requiring permits for stormwater discharges from certain activities. The stormwater permit program requires that certain marinas classified by the Office of Management and Budget with North American Industry Classification System (NAICS) number be covered by a National Pollution Discharge Elimination System (NPDES) permit. Any marina or boat yard that conducts boat maintenance activities, including washing, or discharging wastewater must have a permit authorization.

In New Jersey, a Basic Industrial Stormwater General Permit (NJ0088315) is available to industrial facilities that have eliminated or can eliminate generally, within 18 months of authorization for existing discharges, all exposure of industrial "source materials" to stormwater discharges to surface waters. "Source materials" include, but are not limited to: waste materials; industrial machinery and fuels; and lubricants, solvents, and detergents that are related to the process or other industrial activities, that could be a source of pollutants, etc. Materials or machinery that are not exposed to stormwater are not "source material." Exposure may be eliminated, for example, by covering the materials or activities or by moving the materials or activities indoors. Since stormwater pollution from industrial "source materials" is prevented by compliance with this permit, it does not have numeric effluent limitations, nor does it require stormwater sampling. For complete and specific requirements for the Basic Permit, please refer to the latest edition of the NJPDES rules.

The General Permit requires that permittees prepare a Stormwater Pollution Prevention Plan (SPPP), and submit the SPPP Preparation Certification to NJDEP within six months of the facility's permit authorization date.

The Basic Industrial Stormwater General Permit does not authorize non-stormwater discharges to surface and/or ground water. The discharge of process wastewater including vessel wash water and discharges from secondary containment other than stormwater to surface or ground water may require a separate permit from NJDEP. Further information concerning requirements for these types of discharges can be obtained from NJDEP (609) 633-3869.

How does one apply for the permit?

To obtain coverage, an applicant must submit a Request for Authorization (RFA) form and a USGS quadrangle map that identifies the facility location to the New Jersey Department of the Environmental Protection (NJDEP) along with the required application fee. The fee must be paid annually along with submission of the annual recertification form. All necessary forms and instructions can be obtained by calling NJDEP at (609) 633-7021.

The principal requirement of the Basic Industrial Stormwater General Permit is the preparation and implementation of a Stormwater Pollution Prevention Plan (SPPP). The SPPP is an inventory of your facility that identifies potential areas where stormwater may come in contact with contaminants and a plan to remove exposure of stormwater to those contaminants. Implementation of the SPPP will usually include the elimination of stormwater contact with contaminants using simple and cost-effective best management practices such as covering materials with a tarp, building a shed or roof, or designating specific maintenance areas. The permittee must also perform annual inspection.

Sediment Control and Stormwater Management

New Jersey has designed a comprehensive erosion and sediment control program to reduce the impacts from stormwater runoff, to retard nonpoint pollution from sediment and to conserve and protect the land, water, air and other environmental resources of the State. New Jersey Law (P.L. 1975, Chapter 251, N.J.S.A 4:29-39 et seq.) requires that any construction project that disturbs 5,000 square feet or more of land must have an approved plan for soil erosion and sediment control before construction can begin. Plans are submitted to and approved by the local Soil Conservation District. For construction projects that propose 0.25 acres of impervious surface and/or 1 acre or more of site disturbance, authorization must be obtained from NJDEP (N.J.A.C. 7:8).

Accidental Discharge of Oil or Hazardous Substances

State law prohibits the discharge of oil. New Jersey's Spill Compensation and Control Act (N.J.S.A 58:10-23.11) states:

> The Legislature finds and declares that the discharge of petroleum products and other hazardous substances within or outside the jurisdiction of this State constitutes a threat to the economy and environment of this State. The Legislature intends by the passage of this act to exercise the powers of this State to control the transfer and storage of hazardous substances and to provide liability for damage sustained within this State as a result of any discharge of said substances, by requiring the prompt containment and removal of such pollution and substances, and to provide a fund for swift and adequate compensation to resort businesses and other persons damaged by such discharges, and to provide for the defense and indemnification of certain persons under contract with the State for claims or actions resulting from the provision of services or work to mitigate or cleanup a release or discharge of hazardous substances.

- All spills must be reported immediately to the NJDEP at 1-877-WARN DEP, the National Response Center at (800) 424-8802, and your county health department.

- Within 10 days of becoming aware of a release, you must submit a written description of the release.
- The stormwater pollution prevention plan required as a condition of a Basic Industrial Stormwater General Permit must be modified to include a description of the release and to identify measures to prevent and respond to a recurrence.
- Facilities that have more than one anticipated discharge per year of the same hazardous substance or oil, which is caused by events occurring within the scope of the relevant operating system shall, likewise, report the release to NJDEP and identify measures to prevent or minimize such releases. Contact the Bureau of Release Prevention at 609-633-0610.

Air Pollution Control Act (N.J.A.C. 7:27 Subchapter 8)

An air permit is required if the marina dispenses gasoline or other volatile fuel products from an aboveground or underground storage tank greater than 2,000 gallons in volume. An air permit is also required if the marina uses equipment in a surface coating operation such as spray painting in which the quantity of coating or cleaning material used in any one hour is equal or greater than one half gallon or liquid.

A General Permit (GP-014) is available for Storage and Transfer of Service Station Fuels at Small Gasoline Distributors using stage 1 vapor recovery.

New Jersey State Law

State law prohibits the discharge of oil. New Jersey's Spill Compensation and Control Act (N.J.S.A 58:10-23.11) states:
The Legislature finds and declares that the discharge of petroleum products and other hazardous subthreat to the economy and environment of this State. The Legislature intends by the passage of this act to exercise the powers of this State to control the transfer and storage of hazardous substances and to provide liability for damage sustained within this State as a result of any discharge of said substances, by requiring the prompt containment and removal of such pollution and substances, and to provide a fund for swift and adequate compensation to resort businesses and other persons damaged bysuch discharges, and to provide for the defense and indemnification of certain persons under contract with the State for claims or actions resulting from the
provision of services or work to mitigate or cleanup a release or discharge of hazardous substances.

All spills must be reported immediately to the NJDEP at 1-877-WARN DEP and your county health department.

Appendix I. Information Sources

American Boat and Yacht Council
3069 Solomons Island Road
Edgewater, MD 21037
(410) 956-1050
www.abycinc.org
- Information about holding tank retrofits and vessel standards

Barnegat Bay National Estuary Program
Ocean County College
College Dr., P.O. Box 2001
Toms River, NJ 08754-2001
(732) 255-0472
www.bbep.org

Baykeeper
52 West Front Street
Keyport, NJ 07735
(732) 888-9870
www.nynjbaykeeper.org/news/
- Oyster recovery program

Boat/U.S. Clean Water Trust
880 S. Pickett Street
Alexandria, VA 22304
(703) 823-9550
(703) 461-2855 (fax)
www.boatus.com
- Clean boating educational materials

Clean Ocean Action
P.O. Box 505
Highlands, NJ 07732-0505
(732) 872-0111
(732) 872-8041 (fax)
www.cleanoceanaction.org
- Marine educational material
- Storm drain stenciling information and materials
- Hosts the annual New Jersey coastal cleanup

Delaware Estuary Program
Partnership for Delaware Estuary
P.O. Box 7360
West Trenton, NJ 08628
(609) 883-9500
www.delawareestuary.org

Green Seal
1001 Connecticut Avenue, NW, Suite 827
Washington, DC 20036-5525
(202) 872-6400
www.greenseal.org
- Environmentally responsible products and services
- Product Recommendations

Jacques Cousteau National Estuarine Research Reserve
Coastal Education Center
130 Great Bay Blvd.
Tuckerton, NJ 08087
(609) 812-0649
(609) 294-8597 (fax)
www.jcnerr.org
- Marine research and education

Manasquan River Watershed Association
c/o Monmouth County Mosquito Commission
P.O. Box 162
Eatontown, NJ 07724
(732) 542-3630
(732) 542-3267 (fax)
www.shore.co.monmouth.nj.us/area12/
- Environmental educational materials
- New Jersey Clean Marina materials
- Watershed management

Marine Trades Association of New Jersey
1451 Route 88E
Suite 11
Brick, NJ 08724-3152
(732) 206-1400
(732) 206-1413 (fax)
www.mtanj.org
- Marine educational materials
- Legislative updates
- Model Stormwater Pollution Prevention Plan available

Native Plant Society of New Jersey
Office of Continuing Professional Education
Cook College
102 Ryders Lane
New Brunswick, NJ 08901-8519
www.npsnj.org

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471
(800) 344-3555
www.nfpa.org
- Copies of NFPA standards (may be available from your local fire marshal)

National Response Center
(1-800) 424-8802

New Jersey Department of Environmental Protection
PO Box 402
401 East State Street
Trenton, NJ 08625-0402
(609) 777-DEP3 (general information)
1-877-WARN DEP (24-Hour Emergency Hotline)
www.state.nj.us/dep/

Coastal Management Office
(609) 633-2201
- Clean Marina Program
- Coastal resource and ecosystem conservation

Environmental Education
(609) 984-9802
- Environmental education materials & programs

Emergency Response
1-877-WARNDEP
- Discharge emergency response

Fish and Wildlife
(609) 292-2965
- Fisheries management
- New Jersey Clean Vessel Act

Recycling Office
(609) 984-3438
- www.state.nj.us/dep/dshw
- General information and recycling coordinators

Watershed Management
(609) 984-0058
- Water pollution control
- Water quality restoration

New Jersey Department of Transportation
Office of Maritime Resources
1035 Parkway Avenue, E & O Building
P.O. Box 837
Ewing, NJ 08628
(609) 530-4770
(609) 530-4860 (fax)
www.state.nj.us/transportation/works/maritime
- Management of dredging activities
- Funding opportunites

New Jersey Marine Sciences Consortium
Building 22, Fort Hancock
Highlands, New Jersey 07732
Phone: (732) 872-1300
Fax: (732) 291-4483
www.njmsc.org
- New Jersey Sea Grant Program
- Marine research and education

New Jersey State Police
Marine Police Stations

• Atlantic City	(609) 441-3586
• Bivalve	(856) 785-1330
• Burlington	(609) 387-1221
• Lake Hopatcong	(973) 663-3400
• Monmouth	(732) 842-5171
• Newark Bay	(973) 578-8173
• North Wildwood	(609) 522-0393
• Ocean	(609) 296-5807
• Point Pleasant	(732) 899-5050

Pumpout Guide
www.dbcrssa.rutgers.edu/ims/pumpout/viewer.htm

Rutgers Cooperative Extension
Cook College
State University of New Jersey
88 Lipman Dr.
New Brunswick, NJ 08901-8525
(732) 932-9306
http://www.rce.rutgers.edu
- Environmental education
- Hard Clam and Aquaculture interest

Rutgers University
Institute of Marine and Coastal Sciences
71 Dudley Road
New Brunswick, NJ 08901-8521
(732) 932-6555
http://marine.rutgers.edu
- Research
- Education

United States Coast Guard Auxiliary
(877) 875-6296
www.cgaux.org
- Boating courses
- Boat safety checks

The Ocean Conservancy
1725 DeSales Street, Suite 600 Washington, DC 20036
(202) 429-5609
www.oceanconservancy.org
- Marine debris educational material
- Storm drain stenciling information and materials
- Information about the annual international coastal cleanup

Appendix II. Permitting Information and Assistance

New Jersey Department of Environmental Protection

Air Pollution Control (N.J.A.C. 7;27)

- Permitting, Air Quality Permitting Program (609) 633-2829
- Enforcement Regional Offices
  - Northern/Metro (973) 299-7700
  - Central (609) 584-4100
  - Southern (856) 614-3601

Dredging Permit

- Office of Dredging and Sediment Technology (609) 292-9203

Hazardous Waste Program

- Hotline (609) 292-8341
- Regulations (609) 984-2014

Hazardous Waste (Resource Conservation and Recovery Act Regulations) (N.J.A.C. 7:26G)

- Enforcement Regional Offices
  - Northern (973) 299-7592
  - Central (609) 584-4250
  - Southern (856) 614-3658
- Permitting, Office of Permitting and Technical Programs (609) 984-5950

Land Use Regulation Program

(609) 292-1235

- Land use permits and technical assistance
- CAFRA, Wetlands, Waterfront Development, Tidelands, & Stream Encroachment

NJPDES Stormwater Permit (N.J.A.C. 7:14A)

- Bureau of Nonpoint Pollution Control (609) 633-7021

New Jersey Worker & Community Right to Know Act (N.J.A.C. 7:1G)

- Office of Pollution Prevention & Right to Know (609) 292-6714

Pesticides Control Act (N.J.A.C. 7:30)

- Licensing and Permitting (609) 530-4070
- Pesticide Compliance (609) 984-6568

Solid Waste Management (N.J.A.C. 7:26 and 7:26A)

- Solid Waste Enforcement, all regions (609) 584-4180
- Solid Waste Permitting and Registration (609) 984-2080

Tidelands Instrument

- Bureau of Tidelands Management (609) 292-2573

Underground Storage Tanks (N.J.A.C. 7:14B)

- Bureau of Underground Storage Tanks (609) 292-8761

Water Pollution Control (N.J.A.C. 7:14 and 14A)

- Enforcement Regional Offices
  Northern (973) 299-7529
  Central (609) 584-4200
  Southern (856) 614-3655

Appendix III. Sample Contract Language

FOR TENANTS:

I,_____, understand that_____
(name) (marina/boatyard)

subscribes to and enforces pollution prevention procedures. I further understand and agree that in return for the privilege of performing work on a boat at this facility such as hull cleaning, washing, sanding, polishing and /or painting; bottom cleaning, sanding, scraping, and/or painting; opening the hull for any reason, e.g., installation of equipment or engine work; engine and/or stern drive maintenance, repair, painting; etc., it is my responsibility to comply with, at a minimum, the following pollution prevention practices. I understand that this list may not be complete and pledge that I will exercise common sense and judgment in my actions to ensure that my activities will not deposit pollution residues in surface waters or elsewhere where they may be conveyed by stormwater runoff into the surface waters. I understand that failure to adopt pollution prevention procedures may result in expulsion from the marina/boatyard (insert name of facility) and forfeiture of rental fees. I understand that I may elect to employ the facility to perform potential pollution producing activities on my behalf in which case the responsibility for compliance with the best management practices is entirely theirs.

Signed _____ Date_____

FOR SUB-CONTRACTORS ONLY:

I understand and agree to have my proposed work first authorized by this facility and that I will adhere, at a minimum, to the contents of this document. I further understand that because of the nature of my proposed work, the facility may require that I be supervised by an employee of said facility for which, I will pay the normal existing labor rate.

Signed _____ Date_____

POLLUTION PREVENTION PRACTICES:

A. REPAIRS AND SERVICE (to hull and engine: painting, cleaning, washing, sanding, scraping, etc.)

1. Work on hulls and engines only in designated areas or use portable containment enclosures with approval of marina management.
2. Use tarps and vacuums to collect solid wastes produced by cleaning and repair operations-especially boat bottom cleaning, sanding, scraping, and painting.
3. Conduct all spray painting within an enclosed booth or under tarps.
4. Use non-toxic, biodegradable solvents.
5. Capture debris from boat washing and use only minimal amounts of phosphate-free, non-toxic, and biodegradable cleaners.
6. Use drip pans for any oil transfers, grease operations, and when servicing I/Os and outboard motors.
7. Obtain management approval before and after repairs that open the hull.
8. Use spill proof oil change equipment.

B. VESSEL MAINTENANCE WASTE

1. Non-toxic residue of sanding, scraping, and grinding: bag and dispose of in regular trash.
2. Toxic and non-environmentally safe solvents and cleaning liquids: seek specific directions from marina management or dispose of with licensed agency.

C. FUEL OPERATIONS

1. Install fuel/air separator on fuel tank vent line(s) to prevent overflow of fuel through vent.
2. Keep petroleum absorbent pad(s) readily available to catch or contain minor spills and drips during fueling.

D. WASTE OIL AND FUEL

1. Recycle used oil and antifreeze.
2. Add a stabilizer to fuel tank in the fall or an octane booster to stale fuel in the spring. Use the fuel or take it to a household hazardous waste collection site.
3. Absorbent materials soaked with oil or diesel: drain liquid and dispose of in used oil recycling container; double bag absorbent material in plastic and dispose of in regular trash receptacle.
4. Absorbent materials soaked with gasoline (flammable): air dry and reuse.
5. Bioremediating absorbent products: dispose of in regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.
6. Oil filters: drain and recycle the oil; recycle the filter or double bag and put in regular trash.

E. ONBOARD PRACTICES

1. Maintain oil absorbent pads in bilge. Inspect no less than annually.
2. Do not discharge bilge water if there is a sheen to it.
3. Use only low-toxic antifreeze (propylene glycol). Recycle used antifreeze (even used low-toxic antifreeze contains heavy metals).

F. SEWAGE HANDLING

1. Never discharge raw sewage within New Jersey waters.
2. If you have an installed toilet, you must have an approved Marine Sanitation Device (MSD).
3. Do not discharge Type I or Type II marine sanitation devices within the marina basin.
4. Use marina restroom facilities when at slip.
5. Do not empty port-a-pots overboard; use marina dump facility. Do not empty port-a-pots in the restrooms.
6. Do not discharge holding tanks overboard; use pumpout facility.
7. If you must use a holding tank additive, use an enzyme-based product. Avoid products that contain quaternary ammonium compounds (QACs), formaldehyde, formalin, phenal derivatives, alcohol bases, or chlorine bleach.
8. Live aboards, place a dye tablet in holding tank after each pumpout. The dye will make any illegal discharges clearly visible.

G. ORGANIC WASTE

1. Clean fish only in designated areas.
2. Grind, compost, or double bag fish scraps (depending on the services offered by your marina).
3. Walk pets in specified areas and dispose of their wastes, double-bagged, in the dumpster.

H. SOLID WASTE

1. Recycle plastic, glass, aluminum, and newspaper (tailor this section to fit your facility's practices).
2. Place trash in covered trash receptacles; replace covers.

Appendix IV. Conservation Landscaping

Conservation landscaping works with nature to reduce pollution and enhance wildlife habitat. It encourages a low input formula for yard care: less fertilizers and pesticides, proper lawn care and alternatives to turf. Wise management of soil, water and vegetation are the key to conservation landscaping. This includes maintaining a healthy vegetative cover, preventing soil erosion from wind and water, and maintaining proper soil pH and fertility levels.

Water conservation is a vital element to conservation landscaping. Excess or wasted water runs off the land carrying nutrients, sediments and even traces of toxic products into nearby rivers and streams. Protection of local waterways depends upon reduced water runoff. You can reduce the amount of water used to maintain your yard, by as much as two-thirds, with little expense or effort. Some key elements include timing and thoroughness of watering, proper equipment and plant selection.

Diversity in the landscape provides for the needs of people and wildlife. No matter how large or small an area, you can create diversity by utilizing different types of plants. Native grasses, ground covers, wildflowers, shrubs and trees provide a variety of shapes, colors, smells and habitats. Even very small or urban yards can be transformed into a natural landscape that protects water quality and provides important habitat.

Avoid using non-native invasive plants. Visit the NJDEP website for a list of the plants found in New Jersey that should be avoided.

Master Gardeners

Master Gardeners of Rutgers Cooperative Extension are a group of trained volunteers who provide horticultural programs and services to enhance their communities. Master Gardeners are enthusiastic, willing to share ideas, and offer assistance to those interested in beneficial landscaping.

Rutgers Cooperative Extension has Master Gardener programs in the following counties:

- Bergen County
- Camden County
- Essex County
- Gloucester County
- Hunterdon County
- Mercer County
- Middlesex County
- Monmouth County
- Ocean County
- Passaic County
- Somerset County
- Sussex County
- Union County

For more information about the Master Gardener's Program and/or your local county program visit www.rce.rutgers.edu/mastergardeners/.

Native Wildflowers and Grasses of the Northeastern U.S.

The following information was compiled by the U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, 177 Admiral Cochrane Drive, Annapolis, MD 21401, (410) 573-4593. States included in the Northeastern region of the U.S. include: KY, WV, OH, VA, DC, MD, DE, PA, NJ, NY, RI, CT, MA, VT, NH, ME

						Moisture Dry, Average, Wet			**Soil** Sand, Loam, Clay			**Sun** Full Sun, Partial Sun, Shade		
Latin Name	**Common Name**	**Ann. Per.**	**Color**	**Ht.**	**Blooms**	**D**	**A**	**W**	**S**	**L**	**C**	**F**	**P**	**S**
Wildflowers														
Aquilegia canadensis	Eastern Columbine	P	Scarlet	1-2’	Mar-May	•	•			•	•	•	•	•
Asclepias incarnata	Swamp Milkweed	P	Pink	3-5’	Jun-Aug		•	•	•	•	•	•	•	
Asclepias tuberosa	Butterfly Milkweed	P	Orange	2-3’	Jun-Aug	•			•	•		•		
Aster laevis	Smooth Aster	P	Violet	2-4’	Aug-Oct	•	•		•	•		•		
Aster novae-angliae	New England Aster	P	Purple	2-6’	Aug-Oct	•	•		•	•	•	•	•	
Caltha palustris	Marsh Marigold	P	Yellow	1-2’	Apr-May		•	•	•	•		•	•	
Chelone glabra	White Turtlehead	P	White	2-4’	Aug-Sep			•	•	•		•	•	
Coreopsis tinctoria	Tickseed Sunflower	A	Yellow	1-3’	Jun-Sep	•			•	•		•	•	
Coreopsis verticillata	Moonbeam Coreopsis	P	Yellow	1-2’	Jun-Oct	•	•		•	•		•		
Eupatorium dubium	Eastern Joe Pye Weed	P	Purple	4-7’	Jul-Sep		•	•		•	•	•	•	
Eupatorium perfoliatum	Boneset	P	White	3-4’	Jul-Aug		•	•	•	•	•	•		
Eupatorium purpureum	Joe Pye Weed	P	Pink	2-6’	Jul-Sep		•			•		•	•	
Geranium maculatum	Wild Geranium	P	Pin-Pur	1-2’	Apr-Jul	•	•		•	•		•	•	•
Iris versicolor	Blue Flag Iris	P	Purple	2-3’	Jun-Jul			•	•	•		•		
Liatris spicata	Blazingstar	P	Purple	2-5’	Jun-Sep	•	•		•	•		•	•	
Lobelia cardinalis	Cardinal Flower	P	Red	2-5’	Jul-Sep		•	•	•	•		•	•	
Lupinus perennis	Lupine	P	Blue	1-2’	May-Jun	•	•		•			•	•	
Monarda didyma	Bee Balm	P	Scarlet	2-4’	Jun-Jul	•	•	•		•	•	•	•	
Monarda fistulosa	Wild Bergamot	P	Lavendar	2-5’	Jun-Jul	•	•		•	•	•	•	•	•
Oenothera perennis	Sundrops	P	Yellow	1-3’	May-Aug	•			•			•		
Opuntia humifusa	Prickly Pear Cactus	P	Yellow	1’	Jun-Jul	•	•		•	•		•	•	
Penstemon digitalis	Smooth Penstemon	P	White	2-3’	Jun-Jul	•	•		•	•	•	•	•	
Penstemon leavigatus	Beardtongue	P	White	1-2’	May-Jun		•			•			•	•
Pholox divaricata	Blue Phlox	P	Blue	.5-1’	Apr-May		•			•			•	•
Phlox subulata	Moss Pink	P	Pin-Wht	.5-1’	Apr-May	•	•		•	•	•	•	•	
Rudbeckia fulgida	Black Eyed Susan	P	Yellow	1-3’	Jul-Sep	•	•		•	•	•	•	•	
Solidago rigida	Rigid Goldenrod	P	Yellow	3-5’	Aug-Oct	•	•		•	•		•		
Solidago rugosa	Rough Goldenrod	P	Yellow	3-5’	Aug-Oct		•	•	•	•		•	•	
Vernonia noveboracensis	New York Ironweed	P	Purple	5-8’	Aug-Sep		•	•		•	•	•	•	
Viola pedata	Birds Foot Violet	P	Purple	1’	Mar-Jun	•			•	•		•		

						Moisture: Dry, Average, Wet			Soil: Sand, Loam, Clay			Sun: Full Sun, Partial Sun, Shade		
Latin Name	**Common Name**	**Ann. Per.**	**Color**	**Ht.**	**Blooms**	**D**	**A**	**W**	**S**	**L**	**C**	**F**	**P**	**S**
Andropogon gerardi	Big Bluestem	P	see note	3-8’		•	•	•	•	•	•	•	•	
Andropogon virginicus	Broomsedge	P		1-3’		•	•		•	•	•	•	•	
Elymus canadensis	Canada Wild Rye	P				•	•		•	•	•	•	•	
Panicum virgatum	Switchgrass	P		3-6”			•	•	•	•	•	•		
Schizachyrium scoparium	Little Bluestem	P		4’		•	•		•	•		•	•	
Sorghastrum nutans	Indiangrass	P		5-7’		•	•		•	•		•	•	

Note: The grasses are various shades of greens, blues, goldens, coppers during different times of year. This list was developed from several sources and represents only a partial list of species. Most species were selected becuase of their availability from some seed companies. Most plans are also available in pots.

Sampling of Other Native Plants

	Name	Height	Features
Evergreen	American Holly, *Ilex opaca*	45’	Red berry; wildlife value; needs moist, acid soil
	Eatern Red Cedar, *Juniperus virginiana*	80’	Pyramidial; wildlife value; think branches, dense foliage; tolerates poor soils
	Canadian Hemlock, *Tsuga canadensis*	90’	Pyramidal; dense habitat; wildlife value; prefers rich, moist soil
Deciduous Trees	Shagbark Hickory, *Carya ovata*	60’- 80’	Oval; narrow habitat; nuts; wildlife value; needs deep, rich soil and sun
	White Oak, *Quercus alba*	60’- 90’	Round-headed, largest oaks; wildlife value; tolerates range of soils
	Sourwood, Sorrel Tree, *Oxydendron arboreum*	40’- 60’	Pyramidal; flowers in July, glossy foliage, striking fall color
Evergreen Shrubs	Inkberry, *Ilex glabra*	3’- 15’	Globular; nectar for bees, open habit, small leaf, black berry; tolerates sandy, peaty, acid soils
	Bayberry, *Myrica pensylvanica*	4’- 8’	Persistent leaves; aromatic; wildlife value; tolerates dry, sandy soils
	Wax Myrtle, *Myrica cerifera*	25’- 30’	Persistent leaves; aromatic; wildlife value; tolerates dry, sandy soils
Deciduous Shrubs	Red Chokeberry, *Aronia arbutifolia*	9’	Flowers May-June, smooth pale leaves, red berry; wildlife value; tolerates wet acid or dry soil
	Sweet Pepperbush, *Clethra alnifolia*	6’	Oval; fragrant flower July-Aug, persistent brown seed; wildlife value; tolerates acid wet or dry soil and some shade
	Flame Azalea, *Rhododendron calendulaceum*	9’	Oval; May-June flower; tolerates dry, acid soil and light shade
Ground Covers	Violet Wood Sorrel, *Oxalis violacea*	4”- 8”	Excellent for rock gardens; tolerates some shade, dry soil, and drought
	Blazing Star, *Liatrus spicata*	1”-3”	Rose-purple flowers, late summer bloom, hairy stem
	Bird-Foot Violet	2”-6”	Purple flowers; tolerates some shade, dry soil, and drought

Native Plant Nurseries

The following list identifies Nurseries that sell native plants. This list was prepared by:
Native Plant Society of New Jersey, Inc., Cook College, 102 Ryders Lane, New Brunswick, NJ 08901-8519.

RETAIL NURSERIES

A Wild Bird Oasis
Herbaceous & Woody Plants
741 Strokes Road
Medford, NJ 08055
(609) 654-6777
http://www.awidbirdoasis.com

Bowmans Hill Wildflower Preserve
No mail orders
Herbaceous & Woody Plants
PO Box 685
New Hope, PA 18938
(215) 862-2924
http://www.bhwp.org
email: bhwp@bhwp.org

Cummins Garden
$2.00 catalog- Woody Plants
22 Robertsville Road
Marlboro, NJ 07746
(908) 536-2591

Fairweather Gardens
$2.00 catalog
Woody Plants (mail order only)
PO Box 330
Greenwich, NJ 08323
(856) 451-6261
http://www.fairweathergardens.com

Fancy Fronds
$2.00 catalog- Hardy Ferns
PO Box 1090
God Bar, WA 98251
(360) 793-1472
http://www.fancyfronds.com/

Flora for Fauna Nursery
Free catalog
Herbaceous & Woody Plants
RR3 Box 438, Friedreichstadt Ave.
Woodbine, NJ 08270
(609) 861-5102

Foliage Gardens
$2.00 catalog- Hardy Ferns
2003 128th Avenue S.E.
Bellevue, WA 98005
(206) 747-2998

Native Gardens
$2.00 catalog
Herbaceous & Woody Plants
Route 1, Box 494
Greenback, TN 37742
(615) 956-3350

Niche Gardens
$3.00 catalog
Herbaceous & Woody Plants
1111 Dawson Road
Chapel Hill, NC 27516
(919) 967-0078

Redbud Native Plant Nursery
Wholesale & Retail
1214 N Middletown Road
Glen Mills, PA 19342
phone: (610) 358-4300
fax: (610) 358-3330
http://www.redbudnativeplantnursery.com

Sunlit Gardens
$3.00 catalog
Herbaceous & Woody Plants
174 Golden Lane
Andersonville, TN 37705
(423) 494-8237
email: sungardens@aol.com

Toadshade Wildflower Farm
Free catalog
Haerbaceous Plants
53 Everittstown Road
Frenchtown, NJ 08825
(908) 996-7500
http://www.toadshade.com
email: toadshade@toadshade.com

Virginia Natives
$2.00 catalog
Herbaceous & Woody Plants
PO Box D
Hume, VA 22639
(540) 364-1665

WE-DU Natives
$2.00 catalog
Herbaceous & Woody Plants
Route 5, Box 724
Marion, NC 28752
(704) 738-8300
http://www.we-du.com

Wild Earth Native Plant Nursery
Herbaceous & Woody Plants
PO Box 7258
Freehold, NJ 07728
(908) 308-9777 (Nursery is in Jackson, NJ)
email: wildearthpn@compuserve.com

Woodlanders
$2.00 catalog
Herbaceous & Woody Plants
1128 Collecton Avenue
Aiken, SC 29801
(803) 648-7522

Yellow Springs Farm
Herbaceous, Woody Plants, Ferns, & Grasses
1165 Yellow Springs Road
(610) 827-2014
http://www.yellowspringsfarm.com
email: catherine@yellowspringsfarm.com

WHOLESALE ONLY

Arrowwood Nursery
$3.00 catalog
Herbaceous & Woody Plants
870 W. Malaga Road, Route 659
Williamstown, NJ 0894
(609) 697-9486

Pinelands Nursery
$3.00 catalog
Herbaceous & Woody Plants
323 Island Road
Columbus, NJ 08022
(609) 291-9486

Information from the NJ Native Plant Society:
http://www.npanj.org/sources_native_plants.htm

New Jersey Nurserys & Landscapers

This list was prepared by:
New Jersey Nursery & Landscape Association, http://www.gardennj.net/CNLPfirms.html

Ambleside Gardens
Route 206, Box 220
Belle Mead, NJ 08502
(908) 359-8388

Anton F. Kuppek Landscaping
PO Box 956
Pennington, NJ 08534
(609) 737-0760

Applefarm Landscaping
191 Hwy 35
Red Bank, NJ 07701
(732) 747-0001

Baumley Nursery
4339 Route 27
Princeton, NJ 08540
(732) 821-6819

Better Stones & Gardens Inc.
431 Central Park Drive
New Mildford, NJ 07646

Bill's Landscaping & Lawn Maint.
PO Box 4067
Bayonne, NJ 07002

Bloomers Home & Garden Center
344 Huffville Cross Keys Road
Sewell, NJ 08080
(856) 589-0200

Blue Meadow Farms
378 Pulis Avenue
Franklin Lakes, NJ 07417
(201) 891-4386

Bocchieri Farm Produce
226 US Hwy 1 North
Edison, NJ 08817
(732) 985-3646

Bokma Bros. Inc.
173 E. Grant Ave.
Vineland, NJ 08360
(856) 691-1559

Bongionvanni Landscaping
707 West Broad Street
Westfield, NJ 07090
(908) 232-1406

Brothers Lawn Service
31 Friar Lane
Freehold, NJ 07728
(732) 780-8843

Bulk's Nurseries
89 Woodville Road
Freehold, NJ 07728
(732) 462-5500

Buono Landscaping
71 Marshalls
Hopewell, NJ 08525
(609) 466-2205

CC Landscaping
726 Merric Ave.
Collingswood, NJ 08108
(856) 858-1165

Caliper Farms Nursery
447 Griggstown Road
Belle Mead, NJ 08502
(908) 904-9446

Central Jersey Landscaping
PO Box 429
Englishtown, NJ 07728

Central Jersey Nurseries
28 Hamilton Road
Hillsborough, NJ 08844
(908) 359-4652

Cerbo's Parsippany Greenhouses
440 Littleton Road
Parsippany, NJ 07054
(973) 334-2623

Charlie Vincent Landscaping Contr.
3251 Valley Road
Basking Ridge, NJ 08525
(908) 647-2236

Chux Landscaping Inc.
332 Changebridge Road
Pine Brook, NJ 07058
(973) 808-0888

Cinnaminson Nurseries
400 Forklanding Road
Cinnaminson, NJ 08077
(856) 829-2859

CLC Landscaping Design
58 Ringwood Avenue
Ringwood, NJ 07465
(973) 839-6026

Condurso's Garden Center
96 River Road
Montville, NJ 07045
(973) 263-8814

Conners Landscaping
PO Box 314
Allentown, NJ 08501

Country Landscape Concepts
622 Chestfield-Arneytown Road
Trenton, NJ 08620
(609) 298-6743

Crosswicks Farms
Ellisdale Road
Allentown, NJ 08501

D&S Landscaping Inc.
120 Alfred Street
Edison, NJ 08820
(732) 549-6387

D'Angelos Garden World
240 Newton-Sparta Road
Newton, NJ 07860

D'Egidio & Son Landscaping
21 Sagamore Road
Parsippany, NJ 07054

Dambly's Garden Center
51 W. Factory Road
Berlin, NJ 08009
(856) 767-6883

Dean's Lawn & Landscape Co.
92 Welshs Lane
Somerset, NJ 08873

Del Guadio's Garden Shop
816 Route 579
Pittstown, NJ 08867
(908) 730-9695

Distinctive Concepts
30 Georgia Trail
Medford, NJ 08055
(609) 953-7760

Donaghy's Lawn Maintenance
19 Cloverdale Avenue
Villas, NJ 08251

Dutch Neck Landscaping
RR#2 Box 36 Trench Road
Bridgeton, NJ 08302

East Woodland Associates
PO Box 7258
Freehold, NJ 07728

Eastern Landscape Associates
197-A Laurel Avenue
Holmdel, NJ 07733
(732) 671-6089

ECM Landscaping
109 Alexander Avenue
Upper Montclair, NJ 07043
(973) 746-2421

Fernbrook Nursery
PO Box 46, Georgetown Road
Bordentown, NJ 08505
(609) 298-8282

Ferrucci Nurseries
1745 Piney Hollow Road
Newfield, NJ 08344
(856) 697-1950

Five Star Landscape Design
216 E. Arbutus Avenue
Absecon Highlands, NJ 08201

Frederickson Landscaping
95 Bartley Road
Long Valley, NJ 07853
(908) 876-4816

Fredette Landscaping
PO Box 373
Montclair, NJ 07042

Fuertges Landscaping
109 Ford Road
Denville, NJ 07834
(973) 625-0077

Fullerton Landscape & GC
7 Howard Blvd.
Ledgewood, NJ 07852
(973) 927-5900

Gardens Gate
116 Carlson Parkway
Cedar Grove, NJ 07009
(973) 890-9428

Gardens of the World
21 Hilldale Road
Pine Brook, NJ 07058
(973) 227-1754

Green Thumb Gardens
702 Lacey Road
Forked River, NJ 08731
(609) 693-6331

Greenwood Landscaping
3 Bowne Station Road
Stockton, NJ 08559
(609) 397-1951

Halka Nurseries
240 Sweetmans Lane
Englishtown, NJ 07726
(732) 462-8450

Harvest Moon Nursery
87 Federal City Road
Lawrenceville, NJ 08648
(609) 737-1079

Heatherhaugh Farms Nursery
PO Box 86
Deerfield, NJ 08313

Heaven on Earth Landscaping
PO Box 2727
Westfield, NJ 0709

Herold's Landscaping LLC
194 Route 206 South
Flanders, NJ 07836
(973) 252-0200

Hoagland's Landscape
201 Hughes Drive
Hamilton Square, NJ 08690

Hopewell Nursery
54 Harmony Rd.
Bridgeton, NJ 08302
(856) 451-5552

Huhn's L/S Landscaping
PO Box 86
Sea Girt, NJ 08750
(732) 223-0700

J. Cugliotta Landscape/Nursery
1982 Route 206
Southampton, NJ 08088
(609) 859-9333

J Santucci Landscaping
PO Box 11242
Fairfield, NJ 07004

Jacobsen Landscape Contr.
118 S. Third Street
Park Ridge, NJ 07656
(201) 391-4020

JJ Theibault Jr. Landscape Contr.
1245 Ridge Ave.
Lakewood, NJ 08701
(732) 363-4170

JMB Lanscape Co
PO Box 660
New Providence, NJ 07974

Johnson Farms
PO Box 65
Deerfield, NJ 08313

K&S Landscape Contractors
168 Oak Glen Rd.
Howell, NJ 07731
(732) 938-6099

Kale's Nursery & Landscape
133 Carter Rd.
Princeton, NJ 08540
(609) 921-9248

Krygier's Nursery
741 Cranbury S. River Rd.
Rt 535
(732) 257-5727

L&R Landscaping
PO Box 484
Cranbury, NJ 08512

Landesign
98 Readington Rd.
Whitehouse Station, NJ 08889
(908) 534-5358

Lawrence Landscapes Inc.
209 Bakers Basin Rd.
Lawrenceville, NJ 08648
(609) 896-1444

Leonburg Nurseries
PO Box 535, 810 N. Lenola Rd.
Moorestown, NJ 08057
(856) 234-7590

Levanduski Landscapes
PO Box 17
Windsor, NJ 08561
(609) 259-1930

Limbach's Landscaping
31 Noe Ave.
Madison, NJ 07940
(973) 377-4715

Lipinski Landscape & Irrigation
180 Elbo La., PO Box 605
Mt. Laurel, NJ 08054
(856) 234-2221

LJ Makrancy & Sons Landscaping
947 Kuser Rd.
Trenton, NJ 08619
(609) 587-0477

Long Landscape Contr.
385 Colts Neck Rd.
Farmingdale, NJ 07727
(732) 938-7020

Longwood Gardens
PO Box 501
Kennett Square, NJ 19348

Lower Valley Landscape Co.
418 Trimmer Rd.
Califon, NJ 07830
(908) 832-9300

Mapleton Nurseries
PO Box 396 Mapleton Rd.
Kingston, NJ 08528
(609) 430-0366

McCurrach Landscape Designer
111 Battin Rd.
Fair Haven, NJ 07704

Michele's Brokerage Inc.
135 Coleman Road
Elmer, NJ 08318
(856) 358-4737

Miller Landscape Services
5 Higginsville Rd.
Neshanic Station, NJ 08853
(908) 284-0693

Mr. Jones' Gardens & Grounds
27 Arch St.
High Bridge, NJ 08829

Nature's Touch Lawns
55 Copperfield Rd.
Trenton, NJ 08610
(609) 585-7398

Neighborhood Pride Landscaping
174 S. Lakeside Dr.
Medford, NJ 08055
(609) 953-9404

Nursery Product Supplies
462 Parvin Mill Rd.
Bridgeton, NJ 08302
(856) 451-4402

O'Conner Landscaping
33 Hibernia Rd.
Rockaway, NJ 07866
(973) 627-2461

Parkside Gardens
51 Route 206
Somerville, NJ 08876
(908) 725-4595

Picture Perfect Landscaping
120 Slabtown Rd.
Elmer, NJ 08318

Pinelands Nursery
323 Island Rd.
Columbus, NJ 08022
(609) 291-9486

Plant Detectives Nursery & Garden Center
45 Route 206
Chester, NJ 07930
(908) 879-6577

Pleasant Run Nurseries
PO Box 247
Allentown, NJ 08501
(609) 259-9164

Princeton Nurseries
PO Box 185
Allentown, NJ 08501
(609) 259-7671

Rappleyea Nursery
303 Schuster Lane
Jamesburg, NJ 08831
(732) 792-0700

Redwood Gardens Nursery
65 Morris Turnpike
Randolph, NJ 07869
(973) 584-0778

Ritchie Landscaping
127 Wemrock Rd.
Freehold, NJ 07728
(732) 431-7691

River Nursery
287 Princeton Ave.
Brick, NJ 08724
(732) 899-0048

Rohsler's Allendale Nursery
100 Franklin Turnpike
Allendale, NJ 07401
(201) 327-3156

Rutgers Landscape
PO Box 301
Ringoes, NJ 08551
(908) 788-2600

Sacco's Landscape Inc.
190 Washington St.
Long Branch, NJ 07740
(732) 229-0391

Scenic Gardens
33 LaSalle Ave.
Hasbrouck Heights, NJ 07604
(201) 288-6389

Scenic Source
PO Box 97
Hightstown, NJ 08520

Sickles Market
PO Box 56 Harrison Ave.
Little Silver, NJ 07739

Sterling Hort. Services
101 Columbia Rd.
Morristown, NJ 07960

Stony Brook Gardens
PO Box 714
Pennington, NJ 08534
(609) 737-7644

Sun Valley Services
4 Leslie Courts
Morris Township, NJ 07960
(973) 644-4669

Sussex County Botanical Gardens
35 Mulford Rd.
Lafayette, NJ 07848
(973) 383-9400

SYL Landscaping
34 Manor House Rd.
Budd Lake, NJ 07828

Tech-Turf Inc.
40 Deforest Ave.
East Hanover, NJ 07936
(973) 386-5550

Thompson & Morgan
PO Box 1308
Jackson, NJ 08527

Timber Streams
98 Woodland Ave.
Franklinville, NJ 08322

TLC Landscaping Co. Inc.
PO Box 378
Mt. Freedom, NJ 07970
(973) 252-8953

Top Shelf Landscaping
PO Box 56
Perrineville, NJ 08535

Triple Oaks Nursery & Herb Garden
2359 Delsea Dr.
(856) 694-4272

Truesdale Nursery & GC
295 Snyder Ave.
Berkeley Heights, NJ 07922
(908) 508-0130

TruGreen
444 Commerce Lane, Suite B
West Berlin, NJ 08091

TruGreen
PO Box H
Ringoes, NJ 08551
(908) 284-1500

Tuckahoe Nurseries
PO Box 576
Tuckahoe, NJ 08250
(609) 861-0533

TWFish Landscape Nurseryman Inc.
358 Ashland Rd.
(908) 464-3807

Ultimate Services Inc.
43 Fadem Rd.
Springfield, NJ 07081
(973) 376-6000

Variety Farms
548 Pleasant Mills Rd. Route 542
(609) 561-3818

Village Nurseries
818 York Rd.
Hightstown, NJ 08520
(609) 448-0436

Warren Valley Nurseries
571 Route 57
Phillipsburg, NJ 08865
(908) 859-0515

Weeping Pine Nurseries Inc.
207 Wyckoff Ave.
Waldwick, NJ 07463

Wright Landscape Architect
PO Box 100
Branchville, NJ 07826
(973) 948-2090

The provision of this information does not constitute endorsement or recommendation by the New Jersey Department of Environmental Protection or the National Oceanographic and Atmospheric Administration of any of the individuals, businesses, or organizations listed. It is provided exclusively for the educational benefit of the readers.

Appendix V: Coastal County Recycling Coordinators

County	Municipality	Coordinator Name and Title	Address	Telephone Numbers
ATLANTIC	County	Brian Lefke County Coordinator	6700 Delliah Rd. Egg Harbor Twp., NJ 08232	(609) 272-6902 (phone) (609) 272-6941 (fax)
BURLINGTON	County	Ann Moore County Coordinator	Burlington Co. Office of SWM P.O. Box 429 Columbus, NJ 08022	(609) 499-1001 (phone) (609) 499-5212 (fax)
CAMDEN	County	Jack Sworaski County Coordinator	Camden Co. DSWM 520 N. Newton Lake Dr. Collingswood, NJ 08107	(856) 858-5241 (phone) (856) 858-5211 (fax)
CAPE MAY	County	Bridgett O'Connor County Coordinator	Cape May MUA P.O. Box 610 Cape May Court House, NJ 08210	(609) 465-9026 (phone) (609) 465-9025 (fax)
CUMBERLAND	County	Dennis DeMatte County Coordinator	2 West Vine Street Millville, NJ 08332	(856) 825-3700 (phone) (856) 691-1374 (fax)
ESSEX	County	Michael Onysko County Coordinator	Essex County 120 Fairview Avenue Cedar Grove, NJ 07009	(973) 857-2350 (phone) (973) 857-9361 (fax)
GLOUSTER	County	Ken Atkinson County Coordinator	503 Monroeville Road Swedesboro, NJ 08085	(856) 478-6045x14 (phone) (856) 478-4858 (fax)
HUDSON	County	Nicolas Staniewicz County Coordinator	Hundson Co. Improvement Authority 574 Summit Ave., 5th Floor Jersey City, NJ 07306-4000	(201) 795-4555 (phone) (201) 795-0240 (fax)
MIDDLESEX	County	Jim Lentino County Coordinator	96 Bayard St., 2nd Floor New Brunswick, NJ 08901	(732) 745-4170 (phone) (732) 745-3010 (fax)
MONMOUTH	County	Fran Metzger County Coordinator	Hall of Records 1 E. Main St. Freehold, NJ 07728	(732) 431-7460 (phone) (732) 431-7795 (fax)
OCEAN	County	Joh Hass County Coordinator	129 Hooper Ave. Toms River, NJ 08754-2191	(732) 506-5047 (phone) (732) 244-8396 (fax)
SALEM	County	Melinda Williams County Coordinator	Salem Co. UA P.O. Box 890, 52 McKillip Rd. Alloway, NJ 08001-0890	(856) 935-7900x15 (phone) (856) 935-7331 (fax)
SOMERSET	County	Roseann Brown County Coordinator	Somerset Co. Office of SWM P.O. Box 3000 Somerville, NJ 08876	(908) 231-7109 (phone) (908) 575-3951 (fax)