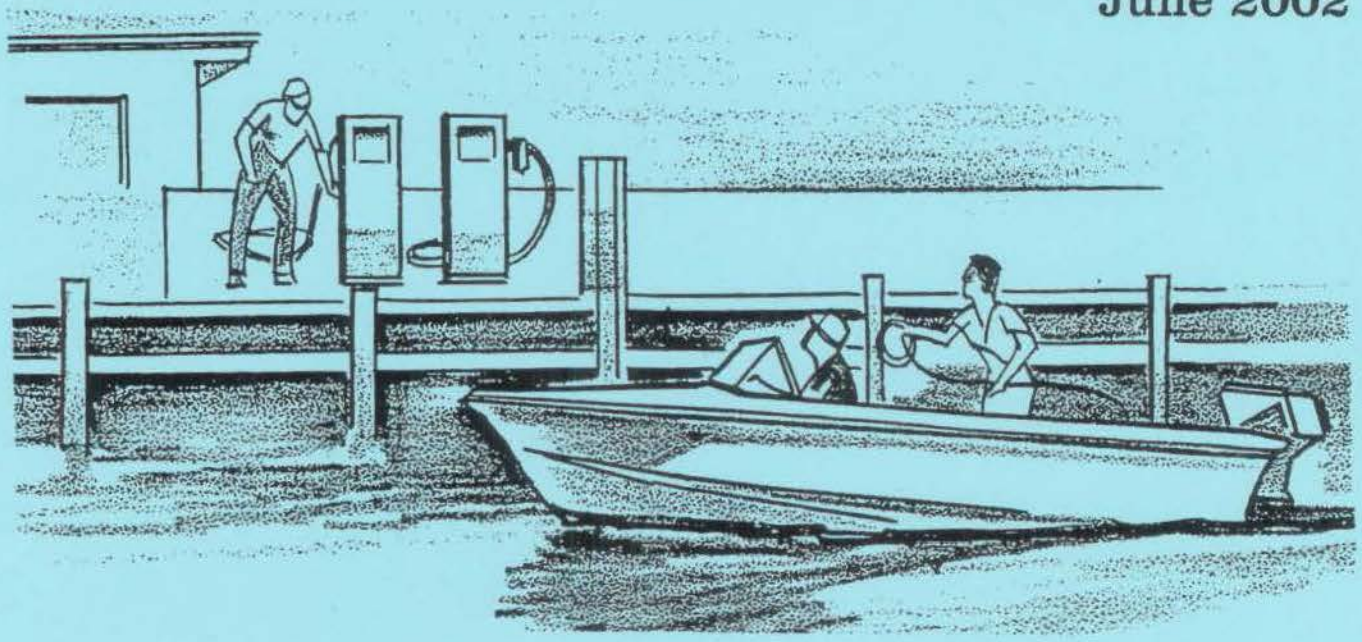
New York State

DEC

Division of Water

# Marina Operations for Existing Facilities

June 2002



**New York State**
**Department of Environmental Conservation**

George E. Pataki, *Governor*

Erin M. Crotty, *Commissioner*

# Introduction

Storm water runoff is precipitation that is not infiltrated into the soil, but washed over the surface of the landscape into streams, rivers, lakes and marine waters. As this water travels over land, it picks up pollutants, such as pet wastes, street litter, soil particles, automotive fluids and residue from industrial activities exposed to rain and snow. These contaminants wash into surface waters, impair the quality of water and adversely impact their usefulness for drinking, swimming, fishing and boating. Pollutants that enter our water in storm runoff are referred to as Nonpoint Source (NPS) pollution.

As point sources of pollution were brought under control over the past 25 years, the impacts of nonpoint sources on our water bodies have become more apparent. NPS pollutants are listed as the primary sources of contamination for more than 90 percent of the impaired waters of New York State.

Federal initiatives, such as the Long Island Sound Study Comprehensive Conservation and Management Plan and the Coastal Zone Act Reauthorization Amendments, have emphasized the need for better management practices, particularly in waterfront areas. New programs have been created to regulate activities that contribute to NPS Pollution, such as industry, construction, agriculture, silviculture, highway maintenance and urban storm sewer systems.

Recreational boating and marinas are not considered by NYS DEC to be significant sources of NPS pollutants. Boating has, however, been identified as an "activity of some interest." Boats have increased in popularity as coastal areas and locations near inland water bodies become more developed and more populated. In some areas, this has increased the number and size of marinas and the potential for adverse impacts to water quality.

This potential, however, does not warrant an increase in regulations for marinas. The direction of the NYS DEC Division of Water is rather to inform marina operators about current Best Management Practices (BMPs). This pamphlet lists some of the potential sources of pollution arising from routine activities at marinas and recommends practices to prevent pollutants from entering the waters of New York State.

Not every facility can be expected to incorporate all of the practices discussed here. Some may not be practical or economical at a particular marina. Each marina must be examined on an individual basis to determine which of the BMPs may apply.

This pamphlet is not a design or operational manual for marinas. Rather, it offers general advice and guidance to help operators evaluate their facilities and take action to minimize water pollution.

The following contains some methods of handling water runoff and ways to prevent substances commonly found at marinas from contaminating the receiving water where your marina is located.

**Acknowledgements**

This manual is the work of several people.

Larry Wilson of DEC Region Three's Division of Water wrote the original text and distributed it for comment to marinas in Westchester County, where it was generally well received.

Before becoming a statewide document, it was reviewed by Region Ones's Divisions of Water and Marine Resources, as well as all the Department's Regional Water Engineers.

Bob Cook, a former Regional Water Engineer, compared Region Three's manual with a similar marina manual by Region One's Greg McGraine.

The following members and staff of the Ad Hoc Marina Advisory Committee also provided substantive comment: Dan Natchez, consultant; Jay Tanski, New York Sea Grant Extension; Bill Barton and Fitzroy Collins, NYS Department of State; George Danskin and William Adriance, NYS Division of Regulatory Affairs; William Koelbel, President of Waterfront Consultants, Inc.; and Ken Stevens, NYS DEC's Division of Water.

Libby Smith, Robin Warrender and Phil DeGaetano of the Division of Water offered many useful suggestions. Bob deVilleneuve and Ben Kroup of the Office of Public Affairs reformatted and edited the final document.

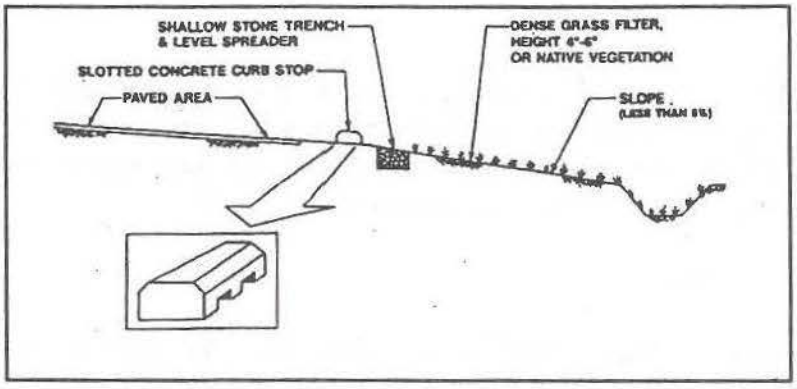
All of you were partners in this first guidance manual for marina owners and operators in New York State. Thanks to you all for your help.

*Tom Boekeloo*
*Department of Environmental Conservation*
*March 1996*

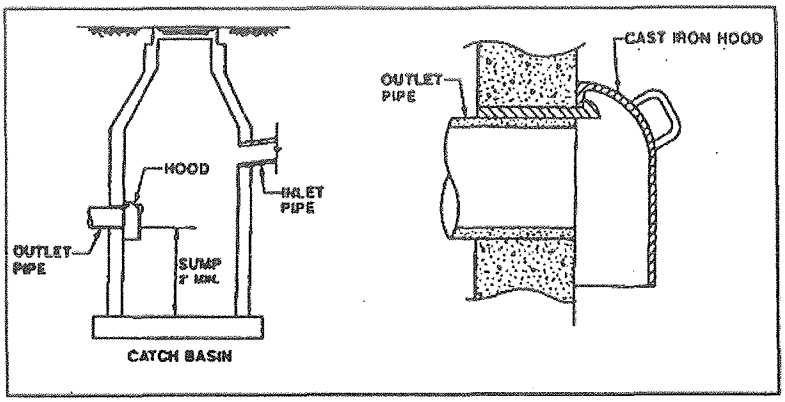
## 1. Storm Water Controls

Storm water runoff from your marina can be the source of water quality problems if you do not implement proper control practices.

- Divert off-site storm water away from your marina, especially from maintenance and repair areas.
- Grass swales, vegetated strips, wet ponds, infiltration basins, and artificial wetlands are other ways of managing storm water at your marina. They require varying amounts of land to construct. Areas in the marina not committed to other uses should be evaluated for such structures.




- Pave only areas that are necessary for your operation.
- Where possible, encourage the use of pervious or semipervious surfaces, e.g., gravel or porous pavement, in boat storage areas and parking lots. Take care, however, to keep the paved surfaces clean.
- Minimize or eliminate storm water runoff from the maintenance area by performing boat repairs in an enclosed, roofed area. If this is not practical, require each boat being worked on to have a plastic tarp under it. If you cover boats with shrink wrap for winter storage, save the plastic and give it to patrons to use as drop cloths. The tarp can be spread out when work is being performed and folded under the boat at other times. It can then be rolled up and disposed of when repairs and painting are complete. Filter fabric will retain paint chips and other debris, but allow water to pass through. These practices will prevent contaminants from being washed into the receiving water and keep your marina cleaner and more attractive.
- Improve the quality of storm water that enters the storm drain system by making sure that the inlet basin is kept clean.
- Install oil absorbent material and a hood over the outlet in the basin to prevent oil and floatables from passing out.




(figure 2)

- In addition, sand filters, holding tanks, oil-grit separators and vortex concentrator chambers can be installed to further improve storm water quality before it is discharged.
- Do not allow storm water runoff to mingle with wash water contaminated by hazardous substances used to aid cleaning.

## 2. Wash Water Controls

The pressure washing of boats at the end of the season generates a large portion of the wash water at your marina.

- Ideally, washing should be done over a drain connected to the sanitary sewer. This drain should not receive stormwater runoff from the surrounding area. If the wash water is discharged into the marina basin or adjacent waters, do not use soap or detergents.
- To remove oil, grease, and bottom paint chips, route the water through an oil water separator and grit chamber or some filtration device.
- As a temporary measure, impound wash water with straw bales to allow sediment to settle out during bottom washing.
- For in-water washing, require boat owners to wash their boats topside with plain water only and only minimal amounts of phosphate-free detergent on decks.
- Prohibit in-water hull cleaning, scraping or any other process that is performed below the boat's waterline to remove paint from the hull—especially from boats with copolymer antifouling bottom paint. Haul the boats out for hull scraping. If a boat has enough growth on the bottom to require cleaning, it obviously needs new bottom paint. Copolymer antifouling paint remains soft and brushes off easily. Brushing or scraping the copolymer paint off in the water would release pesticides to the water.
- In-water hull cleaning is permissible where copolymers are not used and when it is done frequently enough so that organisms that require heavy scraping (e.g., barnacles or mussels) do not colonize the ship's hull. Live fouling organisms are relatively soft and can be freed with a brush, rather than a scraper. If done properly, very few paint chips need to be released into the water during in-water hull cleaning.

### 3. Hull Maintenance and Repairs

Designate and clearly mark work areas for boat maintenance. Do not permit work outside the designated areas.

- If sandblasting or spray painting in your yard, place the boat in a building or temporary enclosure to prevent paint, debris and blasting materials from spreading to the surrounding area.
- If the vessels are in dry dock or on a railway, remove paint, debris and blast materials from the cradles or dry-dock deck prior to relaunching.
- All sandblasting grit, paint and debris should be collected and disposed of properly. The aggregate of these materials may need to be disposed of as hazardous waste if leachable metals, such as lead, are present in sufficiently high concentrations. Labels and MSD sheets for the paint products may help make this determination.
- Where sandblasting is done, obtain assistance for hazardous materials handling from your Regional Water Engineer or the EPA. Consult the EPA guide entitled *The Marine Maintenance and Repair Industry* (EPA/625/7-91/015, October 1991).
- Use a ground cloth when caulking, scraping, fiberglassing or painting with a brush.

### 4. Fueling

If you do not take precautions, fueling vessels can pose a high risk of releasing petroleum products directly into the water.

- To reduce the chance of spills, locate your fuel dock in an area protected from wave action and boat wakes. When locating the fuel dock, take spill containment into consideration.
- Always have an employee supervise refueling.
- Make sure the pump's automatic shut-off is working properly.
- If the tank vents are not equipped with a fuel/air separator, have the boat owner place a container under the air vent while refueling inboard tanks.
- Have a sufficient quantity of oil-spill containment and absorbent materials on hand to contain small spills. These materials may include a containment boom; covers for sewer drains; and absorbent clay, pads and booms. Inspect each item annually and replace as required.
- Place drip trays beneath fuel connections at the dock to prevent fuel leakage from reaching the water. Fix all leaks immediately.
- All petroleum storage tanks more than 1100 gallons in capacity fall under NYS DEC Petroleum Bulk Storage Regulations. These regulations require the registration and monitoring of storage tanks to insure that proper leak detection and containment measures are in place. A copy of these regulations ( 6 NYCRR Part 612, 613 and 614) can be obtained from your Regional DEC Office. In some areas, such as Suffolk County, rules and regulations governing registration and monitoring of storage tanks may be handled by local authorities, such as your county health department.
- Train employees in the use of containment measures.
- Develop a spill response plan. Select a spill response contractor that could respond to your location in a minimum amount of time.

- Report spills to the New York State Department of Environmental Conservation Division of Spills Management. The N.Y.S. 24-hour hot line number is 1-800-457-7362. Oil or gas spills in navigable waters must also be reported to the U.S. Coast Guard at 1-800-424-8802.

**WHAT SHOULD YOU REPORT?**

- Spills or leaks of liquids, solids or gases which you know or suspect to be: gasoline, oil or other petroleum products, hazardous or toxic materials or wastes.
- Raw sewage in large amounts.
- Leaks from shipping containers, drums, trucks, rail cars, storage tanks, broken valves or pipes.
- Abandoned drums.

**WHEN SHOULD YOU CALL?**

- AS SOON AS POSSIBLE!
- Spills should be reported to DEC immediately after local emergency authorities are notified.
- You may call day or night—the Hotline is answered 24 hours a day.

**WHO SHOULD CALL?**

- The owner or operator of the vehicle, storage or processing plant, or petroleum or chemical containers; the person responsible for the discharge.
- Emergency service personnel.
- Any citizen discovering a hazardous or toxic leak or spill.

**WHO SHOULD YOU CALL?**

When **EMERGENCY** conditions such as fire, flammable or toxic vapors, or unknown substances are present, you should call your:

**Local Police**
and/or
**Local Fire Department**

**AND**, for **ALL REPORTABLE SPILLS**, you call:

New York State Department of Environmental Conservation
**Hotline**
Inside New York State Toll-Free
**1-800-457-7362**

From Outside New York State
**1-518-457-7362**

Notifying the state does not relieve the spiller of the responsibility for notifying the federal government where applicable under federal law.

**National Response Center**
**1-800-424-8802**

**WHAT INFORMATION IS NEEDED BY THE HOTLINE?**

- Your name, company or agency, address and telephone number.
- The name, company, address and telephone number of the responsible party (if known).
- The date and time the spill occurred or was discovered.
- The material spilled (if known) and/or the source of the problem (overturned tank truck, broken valve, leaking container, etc.).
- Approximate amount spilled; size or capacity of the leaking container.
- Exact location of the spill—county, town, street.
- Whether the spill is spreading to the air, over the ground, to surface water or the subsurface.
- Whether local authorities—fire, police—have been notified or are going to be notified.
- The number of fatalities or injuries and the type of injuries.
- In transportation incidents, as much information as possible about the manufacturer, shipper, carrier, container, truck, or rail car including identification numbers, destination and other information from the shipping manifest.

**WHAT DOES DEC DO NEXT?**

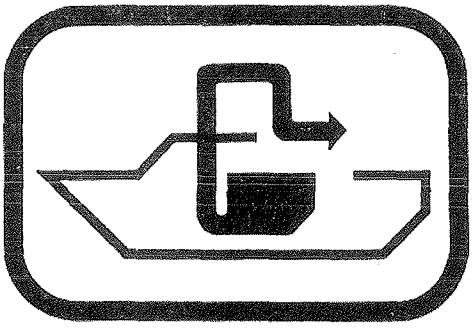
- DEC staff will make sure the spill is contained, and cleaned up in an environmentally correct way. Emergency contractors or the State Emergency Management Office may be called.

## 5. Sewage

Prevent poorly treated or untreated sewage from entering the marina basin.

- Provide adequate toilet facilities for marina patrons.
- Install a dump station for mariners to empty portable heads.
- Install a pump-out facility to encourage the discharge of holding tanks shoreside.
- The Clean Vessel Act Pump-out Grant Program administered by the NYS DEC Division of Fish and Wildlife can provide up to 75 percent reimbursement of the cost of installing or upgrading a pump-out or dump station. The program is funded through 1998. Contact the Fish and Wildlife at (518) 457-5698 or your Regional DEC Office for an application.
- Inspect your sanitary facilities on a regular basis to insure they are properly maintained.
- A radio dispatched pump-out vessel is another option. It eliminates the need to move boats to a pump-out dock and, since it is mobil, it could serve more than one marina.
- Where disposal of holding tank wastes into a municipal sewer system is not possible, dispose of wastes in a properly designed on-site septic system.
- Do not discharge boat waste into a septic system, unless it has been designed for this.
- Post signs and distribute information to patrons explaining the benefits of proper sewage disposal at pump-out and dump stations. If your pump-out station is self service, post complete instructions for its operation. Set up training sessions for regular patrons.

# *Keep Our Water Clean*



## *Use Pumpouts*

- Make sure your patrons know it is against Federal Law to discharge their sewage holding tanks (Type III Marine Sanitation Devices, or MSDs) in the marina or in U.S. territorial waters. Discourage the discharge of sewage from flow-through treatment devices (Type I MSDs) in the marina.
- Include language in slip agreements and other contracts stating there should not be any discharges.
- If you wash hoses and fittings of vessel pump outs on your dock or pier, do not allow any rinse water or residual waste in the hoses to drain into the receiving water.

### 6. Solid Waste

Prevent the entry of solid wastes into surface waters directly or through storm water or wash water runoff.

- Provide an adequate number of trash receptacles throughout your marina.
- Provide receptacles for the disposal of boat maintenance wastes.
- Cover the receptacles to exclude animals, keep material from blowing out and prevent rain from leaching material onto the ground.
- Sweep or, preferably, vacuum areas where debris accumulates.
- Provide labeled receptacles for recyclable materials: cans, glass, paper and metal.
- If you accept old batteries for recycling, store them under cover on an impervious surface.

### 7. Liquid Wastes

Provide storage facilities for liquid wastes to prevent their entry into the marina basin and surrounding waters.

- Provide clearly marked barrels for used antifreeze, motor oil and mineral spirits.
- Keep the containers in a secure area. Monitor which fluids are placed in each to prevent substances from being mixed. Fluids contaminated with other materials become more difficult to recycle.
- To contain spills, build a curb or berm around the area where these barrels are placed.
- Store absorbent materials at the area in a clearly marked storage cabinet.

## 8. Fish Cleaning

If your marina caters to fishermen, designate a fish cleaning area and provide covered receptacles for fish carcasses.

- Fish carcasses should be disposed of offshore or outside the harbor, used as chum or bait, composted, or disposed of in some other environmentally responsible manner. NYS Environmental Conservation Law states: ***"Waste fish shall not be left on shore or in the water within 500 feet of shore."***
- If possible, provide an outdoor stainless steel sink that discharges to a sanitary sewer equipped with a garbage disposal unit. This will diminish odor, insects and other aesthetic problems. It will also prevent nutrients from accumulating in the water of the marina and causing algal and bacterial blooms that deplete dissolved oxygen.
- Issue and enforce rules requiring that fish cleaning be conducted only in the designated area.

## 9. Boat Operation

Competent boat operation is critical for reduction of pollution in marina waters.

- Establish and enforce no-wake zones. In addition to the nuisance and potential damage caused by wakes in a dockage area, the wave action and prop wash suspend bottom sediments, which increase turbidity and may contain contaminants and nutrients. Wakes may also damage rooted aquatic plants, which are an important part of shallow water habitats.
- Avoid berthing deep-draft vessels in areas too shallow for them. Vessels dragging bottom as they transit shallow areas will also resuspend sediments in the water.
- If you have small outboard powerboats in shallow areas of the marina, instruct operators to row or pole their boats to deeper water. This will decrease turbidity and save propellers.
- Discourage engine idling to reduce hydrocarbon emissions to the air and water.

## 10. Shoreline Stabilization

Shoreline stabilization may be necessary to reduce erosion in some marinas.

- Shoreline stabilization at a marina normally requires bulkheads, riprap, jetties and breakwalls. If not properly designed, these measures, while effective in protecting the areas they are installed at, often transmit wave energy to adjacent areas and reduce biodiversity. Other measures, such as gabions, vegetation and sloping revetments should be employed when possible. Natural vegetation is generally preferable to non-indigenous species, because they require less effort to obtain good results. ***A freshwater or tidal wetland permit is required to install many shoreline improvements.*** Contact the NYS Division of Regulatory Services in your DEC Region prior to starting any project.
- Plan and design shoreline structures so that the energy of wave action and currents is not transferred to adjacent areas.
- Establish vegetated buffers along unprotected shoreline areas to reduce erosion and improve water quality.

## 11. Water Circulation

Adequate water circulation is necessary in a marina environment to prevent stagnation.

- There are limits to what modifications are practical to improve water flow through an existing marina. The layout of docks within the marina, however, can be altered to maximize circulation and minimize stagnant water and the build-up of pollutants and sediment.
- Eliminate square corners wherever possible to reduce the accumulation of silt and debris inside the marina.
- Establish entrances at opposite ends of the marina to promote circulation within the basin.
- Avoid dead-end channels. Arrange docks to enhance rather than obstruct the flow of water.
- To allow water to flow freely and maintain its velocity within the marina, boat lanes should progressively widen toward the seaward end and narrow toward the inland end.
- Do not dredge the marina basin deeper than the adjacent channel.
- Dredge the marina so the bottom contour deepens offshore. This will prevent the pooling of water in the marina.
- To reduce the need to construct long docks or dredge large areas, keep deep-draft vessels that do not require shore power or other services moored outside the marina.

## 12. Hazardous Materials Handling

Hazardous materials commonly found at marinas must be handled and stored correctly.

- Several substances used at marinas are classified as hazardous. Oils, paints, acids, solvents, chemicals and caustic solutions should be stored in a protected area to prevent their discharge into the groundwater or receiving water. Marina owners and operators are responsible for determining whether any materials handled at their facility are regulated and for complying with regulations regarding handling, storage and transportation of hazardous materials. For more information, refer to NYS DEC Division of Hazardous Substance booklet, *Are You A Small Quantity Generator?*

## 13. Public Education

Education is the best way to make the boating public aware of the repercussions of their activities on the water.

- Inform marina patrons of the rules you have enacted and services you offer through signs and mailings. Also inform them of the reasons for these measures and the expected benefits.
- Have patrons sign a pledge to obey the rules when they sign their slip rental contract.
- Support and participate in educational programs that encourage the boating public to follow practices consistent with their responsibilities as good neighbors on and off the water.
- Enlist the aid of the NYS DEC and local organizations in providing educational materials and giving presentations at public meetings.

Most of the pollution prevention measures in this pamphlet will not succeed without public participation and support.

## 14. SPDES Storm Water Program

There are two types of SPDES permits:

1. Individual (site-specific) SPDES

A State Pollutant Discharge Elimination System (SPDES) permit is required for non-storm-water discharges that might include oil, grease, solvents, detergents, or hazardous substances used to wash boats, pavements, or equipment. SPDES authorization may also be needed for storm water runoff, either under the individual SPDES permit or the SPDES General Permit for Storm Water (GP-98-03). Completed applications are filed with the DEC Regional Permit Administrator serving your county.

2. SPDES General Permit for Stormwater (GP-98-03)

The federal NPDES regulations also require a permit for storm water runoff from industrial activities defined under 40 CFR Part 122, Section 122.26(b)(14)(i) through (xi). A facility whose ***primary*** activity is identified as Standard Industrial Classification (SIC) Code 4493 is one that needs permit authorization for its storm water discharge to surface waterways. The main requirement of this type of permit is that each facility develop and implement a site-specific storm water pollution prevention plan.

If you need help deciding which permit you need, if any, call your DEC Regional Water Engineer. Application forms are available from the DEC Regional Offices, or on the DEC Storm Water Website at the following address: www.dec.state.ny.us/website/dow/mainpage.htm. Send completed Storm Water Notices of Intent to:

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, NY 12233-3505

## 15. Additional Information

If you would like more detailed information on ways to prevent nonpoint source pollution send for the EPA document *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* using the form attached to the back of this pamphlet. The document is free of charge.

## 16. References

EPA, 1993. *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., EPA 840-b-92-002.

Fugro & Mc Clelland, 1992. *Best Management Practices for Coastal Marinas*. Connecticut Department of Environmental Protection, Office of Long Island Sound Programs and Bureau of Water Management. Hartford, Ct.

EPA, 1994 August. *Protecting Coastal Waters from Vessel and Marine Discharges*. 842-B-94-004.

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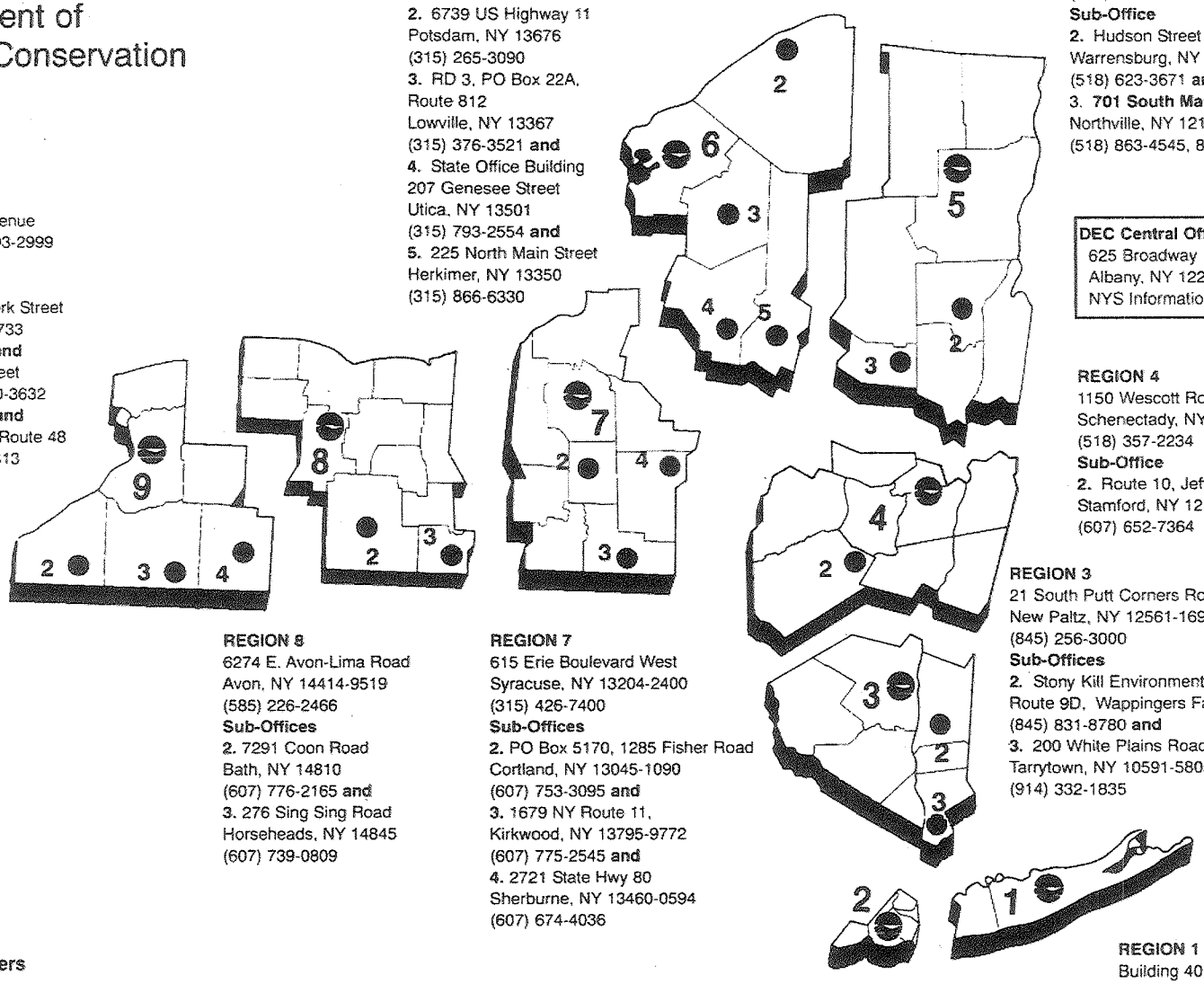


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June 2002

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