Illinois Clean Marina Guidebook

Foreword

The Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 require all coastal states to develop Coastal Nonpoint Source Programs to address polluted runoff within coastal zones. Nonpoint source pollution includes stormwater runoff from boatyards, drips from fuel docks, discharges of marine sewage and bilge water, and fish waste from recreational boaters.

In response to the CZARA requirement, the Illinois Department of Natural Resources, Chicago Park District, and Illinois-Indiana Sea Grant, along with the marine industry, have developed this comprehensive guide for marina and boatyard best management practices. This guidebook outlines Illinois laws, regulations, and programs that address marine facilities and nonpoint sources of pollution.

The *Illinois Clean Marina Guidebook* is intended as an educational tool for marina operators and owners and should be used for informational purposes only. The guidebook and checklist are not intended to be, nor should they be construed as, legal advice. This guidebook does not constitute a complete reference of state, federal, or local laws. The Illinois Department of Natural Resources, Chicago Park District, Illinois-Indiana Sea Grant, or other contributing agencies, organizations, or individuals cannot guarantee the accuracy or completeness of the guidebook or supporting material. Implementation of recommended practices does not ensure full compliance with the law. Participation in the Illinois Clean Marina Program is voluntary, and this guidebook does not create rights or duties that are enforceable in a court of law.

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ILLINOIS CLEAN MARINA

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Acronyms

AIS	Aquatic invasive species
AST	Aboveground storage tank
BMP	Best management practice
CVA	Clean Vessel Act
CZARA	Coastal Zone Act Reauthorization Amendments
EPA	United States Environmental Protection Agency
IDNR	Illinois Department of Natural Resources
IDOA	Illinois Department of Agriculture
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency
LEPC	Local Emergency Planning Committee
MPPRCA	Marine Plastic Pollution Research and Control Act
MSD	Marine sanitation device
MSDS	Material safety data sheets
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
OSRO	Oil Spill Response Organization
RCRA	Resource Conservation and Recovery Act
SPCC	Spill prevention, control and countermeasure plan
SWPPP	Stormwater pollution prevention plan
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground storage tank

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Illinois Clean Marina Program

Introduction

The Illinois Clean Marina Program is a voluntary program that provides guidance and education to help marina and boatyard operators protect the resources that sustain their livelihood—clean water, clean air, and healthy fish and wildlife communities.

The goal of the Clean Marina Program is to reduce pollution associated with recreational boating facilities and protect the state's aquatic habitats. The maintenance, operation, and storage of vessels at these facilities have the potential to pollute both air and water. Common contaminants include dust from hull maintenance operations, solvents from engine repair activities, petroleum from fueling practices and bilge releases, sewage discharges from boats, and heavy metals from antifouling paints. These pollutants may be deposited directly into waterways or carried in by stormwater runoff. Marina design and location may also contribute to environmental degradation by disturbing sensitive habitat areas or restricting water circulation.

This is not to say that marinas and boaters are the only contributors to environmental degradation. Environmental degradation is not the result of any particular industry or user group. The Clean Marina Program is a part of a larger effort to reduce nonpoint sources of pollution throughout the state.

The *Illinois Clean Marina Guidebook* provides an overview of actions that marine industry professionals can take to protect water and air quality. It is written primarily for the owners and operators of full-service marinas, but it is equally applicable to boaters and facilities that offer less than full service, including yacht clubs, transient docks, boatyards, and marine retailers. The guidebook provides best management practices (BMPs) and information on the following topics:

- ✓ Siting and design considerations for new and expanding marinas
- ✓ Marina maintenance and operation
- ✓ Stormwater management
- ✓ Vessel maintenance and repair
- ✓ Petroleum control
- ✓ Sewage handling
- ✓ Waste containment and disposal
- ✓ Safety and emergency preparedness
- ✓ Marina management
- ✓ Laws and regulations

Introduction

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Illinois Clean Marina Program Checklist

Adopting the BMPs recommended throughout this guidebook will make your marina or boatyard a safer, healthier place to work. Participation in the program will reduce costs for insurance, materials, waste cleanup, and disposal. Participating marinas may also increase profits by renting out equipment, such as vacuum sanders, and offering recycling collections. In addition, clean marina facilities will be more attractive to those who care about the health of our water, land, and air. Certified clean marinas will be in a better position to attract boaters who demand facilities that protect the environment, a consumer group that is growing rapidly.

Those marinas that adopt a significant proportion of the BMPs outlined in the guidebook will be recognized as clean marinas. They will receive a certificate acknowledging their environmentally responsible actions, permission to use the clean marina logo on their letterhead and advertising, a flag to fly from their property, and promotion by the Illinois Clean Marina Program in publications, on the web, and at public events.

How to Use this Guidebook

The *Illinois Clean Marina Guidebook* is intended to be used as a reference document. Chapters provide details to help implement the program requirements outlined in the Clean Marina Program Checklist. Review the chapters as needed. For example, as you prepare for spring commissioning, review the recommendations in the Vessel Maintenance and Repair chapter. Throughout the book, you will find references and web links to additional sources of information that will help you become certified as a clean marina.

The appendices for this guidebook also include sample emergency response, Stormwater Pollution Prevention (SWPPP), and Spill Prevention, Control, and Countermeasure (SPCC) plans. Use these samples as a guide when creating your own plans or as a reference to ensure that your current plans meet state and federal regulations.

Nine Clean Boater Tip Sheets are also included at the end of the guidebook. They provide a summary of best practices related to wastewater containment and disposal, engine maintenance, hull maintenance, non-toxic cleaning alternatives, boat cleaning, waste containment and disposal, fuel and oil control, aquatic invasive species, and antifreeze collection and disposal. These tip sheets are meant to be shared and distributed to your boaters. There is space on each sheet to include your marina's name and logo.

Clean Marina Certification Process

To be certified, marinas, harbors, and boatyards must complete the following steps:

1. Contact your Clean Marina Coordinator
2. Sign a pledge statement
3. Enroll in and complete the Clean Marina Classroom
4. Marina staff members perform self-evaluation using the certification checklist
5. Schedule a call or informal site visit to address issues/questions
6. Marina incorporates recommended BMPs
7. Schedule final site visit
8. Advisory board reviews checklist
9. Receive Illinois clean marina certification
10. Once approved, maintain clean marina status

Step 1: Contact your Clean Marina Coordinator

The Clean Marina Coordinator will provide you with all program documents and instructions and will be your contact for any questions you have along the way.

Kim Kreiling
Clean Marina Coordinator
Illinois Department of Natural Resources
Coastal Management Program
160 N. LaSalle St., S-703
Chicago, IL 60601

Phone: 312-814-6260
Fax: 312-793-5968
kim.kreiling@illinois.gov

Step 2: Sign a pledge statement

Send or fax the signed pledge to the Illinois Clean Marina Coordinator. The current coordinator is listed in Step 1.

Display a copy of the pledge in a public area so that your customers will be aware of your commitment to the environment. The Illinois Clean Marina Program will include your marina or boatyard's name on the Illinois Department of Natural Resources's (IDNR) list of pledged facilities, both in public displays and online.

Step 3: Enroll in and complete the Clean Marina Classroom

This training tool will help you and your staff choose the BMPs for your marina. The tool was developed by the

Michigan, Wisconsin, and Ohio Clean Marina Programs for use in the Great Lakes. Illinois specific sections have been added.

Enroll here: www.cleanmarinaclassroom.org

IDNR will reimburse the $100 registration fee after your marina receives its certified clean marina status.

Step 4: Marina staff members perform self-evaluation using the certification checklist

Conduct a self-evaluation of your facility using the Clean Marina Program Checklist and this guidebook.

To achieve clean marina status, a marina or boatyard must implement:

- ✓ 100% of all applicable mandatory law and regulation BMPs (denoted by "M" on the checklist)
- ✓ 100% of all applicable program-required BMPs (denoted by "P")
- ✓ A minimum of 50% of applicable program-recommended BMPs (denoted by "R")

By doing so, certified marinas demonstrate that they understand and intend to comply with state and federal requirements for marina or boatyard operations. In the event that it is not feasible to implement a particular program-required BMP, you may earn credit towards meeting the certification criteria by noting additional practices you employ that are listed in the program guidebook.

Step 5: Schedule a call or informal site visit to address issues/questions

IDNR and the Clean Marina Program are available to address any issues or concerns that may arise during the self-evaluation process.

Do not be discouraged if you have difficulty meeting the minimum score on the self-evaluation checklist. We want you to become an Illinois Clean Marina and can help you identify ways to achieve the minimum standards. Please contact the Illinois Clean Marina Coordinator for assistance. If the coordinator cannot answer your questions directly, he or she will put you in touch with one of the program's technical team members to provide the information you need. In addition, we are willing to participate with you in an informal site visit and assessment of your facility to provide

comments and recommendations for the implementation of appropriate BMPs for you to incorporate to reach the minimum program certification requirements.

Step 6: Marina incorporates recommended BMPs

Once you have completed the self-evaluation, contacted the coordinator for more information (if needed), or participated in an informal site visit, incorporate the necessary BMPs in order to reach the minimum Illinois clean marina certification criteria, as indicated by the program checklist.

Step 7: Schedule final site visit

A site review team appointed by the Illinois Clean Marina Program will visit your facility, verify the items checked on the checklist, and make a recommendation to the advisory board for certification.

Step 8: Advisory board reviews checklist

For more information of the approval process, see www.dnr.illinois.gov/cmp/Pages/IllinoisCleanMarina.aspx

Step 9: Sign the Clean Marina Certification Contract, receive Illinois clean marina certification status

The Clean Marina Program Coordinator will send you a certification contract to sign once the advisory board has approved your marina. To receive reimbursement for the Clean Marina Classroom registration fee, submit the following documents with your signed clean marina contract:

- ✓ Marina's W-9
- ✓ Receipt from Clean Marina Classroom
- ✓ Certificate of completion from the Clean Marina Classroom

Once the contract is received, the Illinois Clean Marina Program staff will help you prepare a news release recognizing your demonstrated commitment to environmental stewardship. You will be authorized to use the Illinois clean marina logo on your letterhead and in your advertising. You will receive an Illinois clean marina certificate and a clean marina flag to fly on your property. Your marina or boatyard will also be listed in Illinois clean marina publications, on the program website and in public displays.

Step 10: Once approved, maintain clean marina status

Annually, the coordinator will ask you to confirm in writing that you continue to meet the designation standards

described on the checklist. At least every third year, a program representative will contact you to set up a meeting to reaffirm your clean marina status. The Clean Marina Program may periodically update the BMP guidebook or checklist due to new information or changes in rules and regulations. You will be notified of program updates or changes in certification criteria. However, you are responsible for ensuring that your facility is in compliance with all current, applicable state and federal rules and regulations.

Illinois Clean Marina Pledge Statement

The Illinois Clean Marina Program promotes and celebrates the voluntary adoption of measures to reduce pollution from marinas and recreational boats. Designated "clean marinas" are recognized as environmentally responsible businesses.

As the first step toward achieving clean marina status on behalf of:

Name of Marina or Boatyard	
Address	
City	Zip

I pledge to do my part to keep Illinois waterways free of harmful chemicals, excess nutrients, and debris. I will identify opportunities and implement practices to control pollution associated with:

- -Marina siting
- -Marina maintenance and operation
- -Stormwater management
- -Vessel maintenance and repair
- -Petroleum control
- -Sewage handling
- -Waste containment and disposal
- -Marina management

I commit to actively pursuing full standing as an Illinois Clean Marina. I will implement appropriate environmental best management practices and will apply to the Illinois Clean Marina Program for recognition as an Illinois Clean Marina.

Printed Name of Marina or Boatyard Owner		Date
Signature of Marina or Boatyard Owner	Phone	Email

Printed Name of Marina or Boatyard Manager		Date
Signature of Marina or Boatyard Manager	Phone	Email

Please complete and return signed form to:

Kim Kreiling
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160 N. LaSalle St, S-703
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Illinois Clean Marina Program Checklist

Adapted from the Wisconsin Clean Marina program

Marina Name		Date of Assessment	
Name of Owner/Manager		Area Code and Telephone	
Signature of Owner/Manager			
Facility Address		City	Zip Code
Facility Mailing Address (if different)		City	Zip Code
Email Address		Website	

Types of Services Your Facility Offers (check **all** that apply)

- ☐ Outside winter storage
- ☐ Seasonal in-water slips
- ☐ Clubhouse or pavilion
- ☐ Inside cold winter storage
- ☐ Transient in-water slips
- ☐ Restaurant/bar
- ☐ Inside heated storage
- ☐ Rack in and out service
- ☐ Marina store
- ☐ Fish cleaning station
- ☐ Gasoline fuel pumps
- ☐ Diesel fuel pumps
- ☐ Pump-out facilities
- ☐ Launch ramp
- ☐ Hoist service
- ☐ Boat sales
- ☐ Yacht club
- ☐ Other

Types of Operations Performed (check **all** that apply)

- ☐ Use shrink wrap covers
- ☐ Fiberglass repairs
- ☐ Paved roadways
- ☐ Winterization
- ☐ Bottom sanding and painting
- ☐ Storm drains
- ☐ Mechanical/engine shop
- ☐ Boat bottom washing
- ☐ Oil changes
- ☐ Other:

What type of docking system do you have? ☐ Floating docks ☐ Fixed docks ☐ Bulkheads
What are the docks made of?

Petroleum storage: ☐ Aboveground ☐ Underground, gallons of diesel: gasoline:

Is the marina: ☐ Owned or leased by a government entity ☐ Privately owned ☐ Other:

Symbols used in the checklist indicate the following: M = practices mandated by laws and regulations; P = program mandates for certification as a clean marina; and R = program recommendations for BMPs. Marinas must implement 50% of the recommended best management practices in this matrix.

Please answer each question by checking either Yes, No, or N/A. The "not applicable" (N/A) option is offered so items that do not apply to your operation will not be tallied in the certification score. For example, chapter 1, Siting and Design Considerations for New and Expanding Marinas, applies only to developing marinas or those undergoing a significant expansion.

Siting and Design Considerations for New and Expanding Marinas	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. have the proper permits for marina construction and dredging? p. 15	M			
2. plan new facilities in previously developed waterfront sites? p. 16	R			
3. design facilities to meet the US Green Building Council's LEED (Leadership in Energy & Environmental Design) certification requirements? p. 20	P			
4. comply with all state and federal laws for rare and endangered species? p. 17	M			
5. minimize disturbances to wetlands? p. 17	M			
6. schedule construction to avoid critical migration, nesting, and spawning periods of important species of fish and wildlife? p. 17-18	M			
7. have a harbor/marina design that enhances water circulation and minimizes the need for dredging? p. 18-19	R			
8. develop the site to address stormwater drainage and infiltration? p. 20	M			
9. use environmentally neutral materials? p. 20	R			
Marina Maintenance and Operation	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. minimize impacts of dredging? p. 26	M			
2. use nonstructural shore erosion control measures? p. 23	R			
3. maintain structures using clean marina practices (i.e., scrape, sand, and paint structures according to the same management principles used for vessels; move floating structures to shore for scraping, painting, and major repairs.)? p. 25	P			
4. use upland and inland areas for boat storage/maintenance areas? p. 22-23	R			
5. provide dry-stack storage? p. 24-25	R			
6. conserve and protect existing sensitive areas and habitats? p. 25-26	R			
7. practice water conservation landscaping (e.g., water only "thirsty" plants, water deeply and infrequently, place mulch around plants, group plants with similar water needs together, etc.)? p. 26-27	P			
8. practice water conservation at facility (e.g., low flow toilets and shower heads, maintain and fix any leaks or hoses on the docks, etc.)? p. 25	R			
9. adopt integrated pest management practices (i.e., select native plants, use pesticides as a last resort, foster natural predators, etc.)? p. 28-29	P			
10. inform boaters and encourage the use of practices to help control the spread of aquatic invasive species and diseases? p. 29-31	P			
11. enhance aquatic and/or terrestrial habitats adjacent to the marina basin? p. 31-32	R			

12. provide markers or no wake signs to indicate areas with sensitive shorelines? p. 23	R			
13. have a winter lighting reduction plan? p. 24	R			
14. replace all incandescent bulbs with LED or fluorescent bulbs? p. 24	R			
15. discourage unnecessary idling? p. 26	P			
Stormwater Management	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. if applicable, have an National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit? p. 33-34	M			
2. have a written Stormwater Pollution Prevention Plan (SWPPP) or stormwater information map? p. 34	M			
3. capture and treat stormwater on-site? p. 35-36	R			
4. maintain and develop/cultivate vegetated areas by retaining natural vegetation, planting vegetated buffers, positioning downspouts to drain to vegetated areas, and using grassland swales for stormwater infiltration, erosion control, and to provide wildlife habitat? p. 35-36	P			
5. minimize the amount of impervious surface by only paving necessary areas and use permeable materials if appropriate? p. 35-36	R			
6. use soil erosion control practices during construction? p. 37	M			
7. have stormwater management structures that are appropriate for your property (e.g., rain barrels, rain gardens, or areas mentioned in #4 above)? p. 36	P			
8. stencil or label storm drains? p. 37	R			
Vessel Maintenance and Repair	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. meet all water quality regulations for wastewater from the outside washing of vehicles, equipment, and other objects? p. 40-41	M			
2. restrict maintenance activities to designated work areas? p. 39	P			
3. locate designated work areas as far from the shore as practical? p. 39	R			
4. collect maintenance debris and dispose of it properly? p. 40	P			
5. provide education, training, or signage describing best management practices that boat owners and contractors must follow? p. 50	P			
6. wash boats on land where the wash water can be collected and treated? p. 40	R			
7. collect and properly dispose of all bilge water from vessels when they are removed from the water? p. 44-45	R			
8. use or sell environmentally-friendly cleaning and maintenance products if possible (i.e., teak cleaners, varnishes, solvents)? p. 43	P			
9. prohibit the use of cleaners that contain ammonia, phosphates, petroleum distillates, sodium hypochlorite, or chlorinated solvents? p. 41	R			
10. minimize the impacts of pressure washing? p. 41	M			
11. handle solvents appropriately? p. 41-42	P			
12. keep records of solvent and paint usage? p. 42	M			
13. minimize the environmental impacts of engine repair and maintenance? p. 43-44	P			
14. winterize only with less toxic propylene glycol antifreeze? p. 45	P			
15. prohibit boaters from “blowing out” antifreeze from the boat when it is put in the water for the first time after being winterized? p. 45	R			

16. as a boatyard, not "blow out" antifreeze but collect and recycle from the boat when it is put in the water for the first time after being winterized? p. 45	R			
17. check that bilge contents are disposed of properly before the drain plug is pulled? If a vessel has a through-hull discharge, check bilges to ensure that no oily water or industrial water will be discharged to surface waters? p. 45	R			
18. inspect bilges prior to boat storage at your facility and require boat owners to keep bilges clean and dry during storage? p. 44-45	R			
19. recycle used shrink wrap covers? p. 46	P			
20. have appropriate procedures for the collection, storage, and disposal of spent lead acid batteries? p. 46	P			
21. rent or loan vacuum sanders to tenants and contractors? p. 47	R			
22. restrict or prohibit power sanding on the water? p. 47	R			
23. contain dust from sanding and dispose of it properly? p. 47	P			
24. contain debris from sand blasting and dispose of it properly? p. 47-48	P			
25. have an annual pesticide applicator license if you apply antifouling paints to boats? p. 49	M			
26. recommend antifouling paints with minimal environmental impacts? p. 49	R			
27. prohibit boaters from spray painting on the water? p. 49	R			
28. conduct all spray painting on land, in a spray booth, or under a tarp? p. 49	P			
Petroleum Control	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. have inspection records indicating compliance with petroleum storage requirements? p. 54	M			
2. always have a trained employee at the fuel dock to perform fueling (*41 IAC 175.250*)? p. 54	M			
3. have employees trained in marina fueling and spill procedures? p. 54-55	M			
4. remove fuel nozzle holding clips? p. 55	M			
5. have automatic back pressure shut-off nozzles on fuel pump discharge hoses? p. 55	M			
6. regularly inspect and repair fuel transfer equipment? p. 56	P			
7. make available and promote the use of oil-absorbent materials and collection devices at the fuel dock and for bilges (e.g., spill vents, oil-absorbent pads, and socks)? p. 56-57	P			
8. locate fuel docks in areas away from waves and wakes to prevent spills due to rocking? p. 56	R			
9. avoid fuel discharges to the water by discouraging topping off? p. 55	P			
10. install personal watercraft floats at fueling docks? p. 56	R			
11. use automatic shut-off nozzles on fuel lines? p. 55	M			
12. post signs for proper fueling? p. 54	M			
13. dispose of oil-absorbent materials properly? p. 56	M			
14. take precautions to minimize spills and leaks from machinery? p. 57-58	P			
15. locate aboveground storage tanks above the high water mark or have appropriate anchoring to prevent tank flotation (*41 IAC 160.50*)? p. 53	M			

16. offer spill-proof oil changes? p. 58	R			
17. have a Spill Prevention, Control, and Countermeasure (SPCC) plan that meets all SPCC rules in compliance with 40 CFR 112 (if the facility has an aggregate aboveground storage capacity of greater than 1,320 gallons or an underground storage capacity greater than 42,000 gallons)? p. 59	M			
18. have accessible, current written emergency response plans for likely threats (e.g., fuel or chemical spills, fire, etc.)? p. 59	P			
19. maintain oil spill response equipment to contain a potential spill in water at your facility? p. 59-60	M			
20. store your oil response equipment and booms where they are convenient and accessible at the most likely location of an oil or fuel spill? p. 60	M			
21. report petroleum spills to the U.S. Coast Guard National Response Center and post the notification numbers? p. 61	M			
22. register storage tanks with the Illinois Office of the State Fire Marshall (OSFM)? p. 53	M			
23. properly display your OSFM registration placard? p. 53	M			
24. have a current green sticker from OSFM? p. 54	M			
25. have annual fire inspection records indicating compliance with all applicable fire codes? p. 60	M			
26. maintain files of Material Safety Data Sheets (MSDSs) as required by OSHA? p. 60-61	M			
27. file Tier Two forms for hazardous waste as required by U.S. EPA? p. 61	M			
Sewage Handling	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. have a well-maintained pump-out facility appropriate for your facility? p. 64	P			
2. have a dump station, wand attachment, or an alternative procedure to empty portable toilets? p. 64	R			
3. if boat docking facilities are provided for overnight sleeping, have clean, functional restrooms available (*77 IAC 800.1300(b)*)? p. 65-66	M			
4. maintain your septic system regularly and post signs about what patrons can and cannot put into the system? p. 66-67	P			
5. address the special sewage handling needs of live-aboards? p. 66	R			
6. offer marine sanitation device (MSD) inspections of boats? p. 63-64	R			
7. prohibit the discharge of sewage in your marina and encourage compliance by including information about MSD requirements and sewage laws in contracts for slips, rentals, transients, and live-aboards? p. 63	M			
8. establish practices to control pet waste problems? p. 67-68	R			
9. discourage the feeding of waterbirds and waterfowl in your marina? p. 67-68	R			
10. educate boaters about graywater pollution impacts? p. 67	R			
11. prohibit the discharge of blackwater into surface waters? p. 63	M			
12. encourage the use of shoreside facilities such as laundry and showers? p. 67	R			
13. include language in lease agreements to promote the use of harbor pumpout and dump stations? p. 63	P			

14. require that all Y-valves on head discharge lines are closed? p. 63	P			
15. require that all Y-valves on head discharge lines are locked? p. 63	R			
Waste Containment and Disposal	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. store, use, and dispose of hazardous waste in accordance with federal and state regulations? p. 71-75	M			
2. recycle materials in accordance with state and local recycling laws? p. 80	M			
3. take steps to reduce waste (i.e., avoid having leftover materials by sizing up a job, minimize office waste, request alternative packing material, discourage the use of plastic and Styrofoam cups, etc.)? p. 70-71	R			
4. provide fish cleaning stations and require patrons to dispose of fish waste properly? p. 77-78	R			
5. provide fishing line and plastic bag disposal/recycling? p. 80	R			
6. provide trash and recycling receptacles that are covered, well labeled, and located in convenient locations? p. 79-80	P			
7. plant or construct wind screens around dumpsters? p. 79	R			
8. post signs indicating what may not be placed in the dumpster, such as engine oil, antifreeze, paints, solvents, varnishes, lead batteries, and transmission fluids, and indicate where to dispose of these hazardous wastes? p. 79	P			
9. post signs indicating what must be recycled and where? p. 80	P			
10. pick up stray litter at least twice per day? p. 79	R			
11. organize a shoreline cleanup at least once per year? p. 80	R			
12. educate boaters on the proper disposal of waste safety flares, fluorescent HID lamps, and bilge switches? p. 75	R			
13. provide a location for the safe storage of used batteries prior to recycling and store batteries with caps closed on an impervious surface that is protected from the weather? p. 74-75	P			
14. provide or promote recycling of liquid waste (e.g., used oil, antifreeze, and solvents; have proper containers and containment areas)? p. 76-77	P			
15. place used oil in containers, drums, or tanks labeled “USED OIL”? p. 76	P			
16. send used oil to a permitted facility for recycling? p. 76	P			
17. maintain a contract with a used oil transporter that is licensed to operate in Illinois? p. 76	R			
18. minimize your use of hazardous products? p. 71	R			
19. follow recommended waste disposal methods? p. 82-84	P			
20. track pollution incidents? p. 77	R			
Safety and Emergency Preparedness	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. have an emergency action plan prepared and on-site? p. 87-88	R			
2. include severe weather procedures in your emergency action plan? p. 87	R			
3. include written fire safety procedures in your emergency action plan? p. 87	R			
4. keep fire extinguishers clearly marked and readily available throughout the harbor? p. 88-89	M			

5. maintain fire extinguishers in good working order with current inspection tags? p. 89	M			
6. keep all ingress and egress clear of obstacles in case of fire? p. 89	M			
Marina Management	**Status**	**Yes**	**No**	**N/A**
Do you:				
1. provide staff training on the Stormwater Pollution Prevention Plan (SWPPP)? p. 90	M			
2. review emergency response plans and procedures with staff? p. 90	R			
3. train staff to watch for inappropriate discharge and activities? p. 90-91	P			
4. train staff on your emergency action plan? p. 90	R			
5. train staff on proper waste management? p. 90	P			
6. have regular emergency training and drills for staff (at least twice annually)? p. 90	R			
7. have established procedures for approaching polluters? p. 97-98	R			
8. maintain training records? p. 91	R			
9. incorporate best management practices into all of your contracts: slip holders, live-aboards, transients, charters, workers, contractors, and tenants? p. 91	P			
10. educate boaters on best management practices (sample signage provided in guidebook)? p. 91-96	P			
11. provide environmental education materials to boaters (e.g., provide information on the importance of the Great Lakes, host workshops to demonstrate BMPs, recognize boaters who try to prevent pollution, offer environmental audits, distribute Clean Boaters Tip Sheets, or include articles about BMPs in your newsletter)? p. 97-98	P			

Extra Credit: List any additional operating procedures or practices that your facility uses that have reduced waste or pollution. (*Note: Each additional practice is worth the same as one recommended practice on the checklist.*)

Scoring

	# Yes Responses	# Applicable Items	Actual % (#Yes ÷ # Applicable) x 100	Required %
Mandatory Practices (M)				100
Program Required BMPs (P)				100
Recommended BMPs (R)				50

Siting and Design Considerations for New and Expanding Marinas

Environmental Concerns

The natural plant and animal communities in coastal areas serve multiple functions. Wetlands, for example, provide habitat for fish and fowl, minimize erosion, and act as a filter to purify stormwater runoff. Coastal areas have such ecological, economic, recreational, and aesthetic values that shoreline development must be done carefully.

Many factors influence the long-term effect a marina will have on water quality within the immediate vicinity of the marina and the adjacent waterway. Initial marina site selection is the most important factor. Selecting a site that has favorable hydro-geographic characteristics and requires the least amount of modification can reduce both potential impacts and the expense of retroactively addressing adverse environmental or public impacts.

Laws and Permits

Building in Navigable Waters

Construction of any bridge, dam, dike, or causeway over or in the navigable waters of the U.S. without authorization from the U.S. Coast Guard is prohibited by Section 9 of the Federal Rivers and Harbors Act of 1899 (33 U.S.C. 401). Section 10 of the act (33 U.S.C. 403) also requires that businesses receive permits from the U.S. Army Corps of Engineers (USACE) before building structures such as wharfs, jetties, or piers.

Marina Construction and Dredging

The Clean Water Act sets standards for the discharge of dredge or fill materials into navigable waters, including wetlands. Under Section 404 of the act (33 U.S.C. 1344), the majority of marina development and expansion projects along the Great Lakes, including dredging, will require a joint permit from USACE, the Illinois Department of Natural Resources (IDNR), and the Illinois Environmental Protection Agency (IEPA). In addition, 17 IAC 3704 requires a permit from IDNR for construction projects in any public body of water. More information on dredging permits can be found at www.dnr.state.il.us/Wetlands/ch4b.htm.

Fish and Wildlife Impact Review

The Fish and Wildlife Coordination Act (16 U.S.C. 661) requires a U.S. Fish and Wildlife Service (USFWS) review of potential effects on fish and wildlife from proposed water resource development projects. The act requires that fish and wildlife resources receive

Environmental Concerns

Laws and Permits
- Building in Navigable Waters
- Marina Construction and Dredging
- Fish and Wildlife Impact Review

Best Management Practices for Site Selection
- Redevelop Existing Sites
- Characterize Project Site
- Identify Rare and Endangered Species
- Avoid Submerged Aquatic Vegetation
- Minimize Disturbance to Wetlands
- Minimize Disturbance to Fish and Wildlife
- Enhance Water Circulation
- Consider Bottom Configurations
- Evaluate Upland Impacts
- Design Environmentally-Friendly Facilities

consideration equal to other project features. In addition, it also requires federal agencies that construct, license, or permit water resource development projects, such as USACE, to first consult with USFWS and relevant state and local agencies to mitigate impacts on fish and wildlife.

Best Management Practices for Site Selection

Redevelop Existing Sites

Redeveloping previously used sites (brownfields) restores property to productive uses, reduces pressure to develop unused areas (greenfields), increases property values, and mitigates public health and safety concerns. The state offers financial assistance for the redevelopment of brownfields. For more information, visit www.epa.state.il.us/land/brownfields/faq.html.

- ✓ Locate new facilities on brownfields rather than disturbing greenfields.
- ✓ Secure the proper permits before beginning any development project, including dredging. See the Marina Design and Maintenance chapter for more details.

Characterize Project Site

Marina protection must be carefully designed. Incorrectly designed structures may amplify wave action, thereby exacerbating erosion, creating excessive shoaling, and interrupting or restricting circulation.

- ✓ Identify local nearshore coastal processes to ensure any new development will not change these natural processes.
- ✓ Determine the different habitat types in the area and how the site is used by fish, waterfowl, and other organisms.
- ✓ Find the present shoreline and avoid designing shoreline facilities that extend past that line.
- ✓ Identify areas prone to ice flows, which can cause oil and gas spills and the deposition of debris and other substances.
- ✓ Determine the size, configuration, location, and proper materials for protection structures. For additional information, refer to the Environmental Protection Agency (EPA) Coastal Marina Assessment Handbook.
- ✓ Hire a private consulting firm to perform a site assessment, if necessary.
- ✓ Ensure that any previous environmental contamination has been cleaned up.

Identify Rare and Endangered Species

- ✓ Do not disturb rare and endangered species. (520 ILCS 10/1 and 17 IAC 1075).
- ✓ Ensure that USFWS and IDNR have assessed all proposed development sites for endangered and threatened species and habitat protection areas. For more information on nearby sensitive habitat areas, submit a project description and a photocopy of a United States Geological Survey topographic quadrangle map, with the site identfied, to USFWS at www.fws.gov.
- ✓ Implement an approved protection plan if protected species are identified. A protection plan must be implemented for a project to receive approval.
- ✓ Submit a mitigation or habitat enhancement plan to USACE and USFWS.

Avoid Submerged Aquatic Vegetation

- ✓ Avoid or mitigate any disturbances to submerged aquatic vegetation (SAV). SAV provide habitat for fish and food for waterfowl and are an important component of a healthy coastal ecosystem.
- ✓ Avoid depositing dredged material where it can interfere with SAV.
- ✓ Position new or expanded marinas where navigation over SAV beds won't be necessary.

Minimize Disturbance to Wetlands

Any construction that extends into wetland areas requires authorization or permits from IDNR and USACE.

- ✓ Minimize disturbance to wetlands and native vegetation in coastal or shoreline areas. Refer to 17 IAC 1090.20 for a list of activities that require state review.
- ✓ Preserve and, where possible, increase wetland acreage and function.
- ✓ Mitigate disturbances to wetlands when loss is unavoidable.
- ✓ Build wetlands on the down-current side of marinas.

Minimize Disturbance to Fish and Wildlife

- ✓ Consult with IDNR for site-specific assessments of the potential impacts to wildlife populations caused by marina siting or construction.
- ✓ Schedule construction to avoid critical migration,

nesting, and spawning periods of important species of fish and wildlife (42 U.S.C. 4321).

- ✓ Preserve nesting trees and other natural habitats where possible.
- ✓ Locate marinas away from waterfowl nesting and staging areas (16 U.S.C. 703-712).

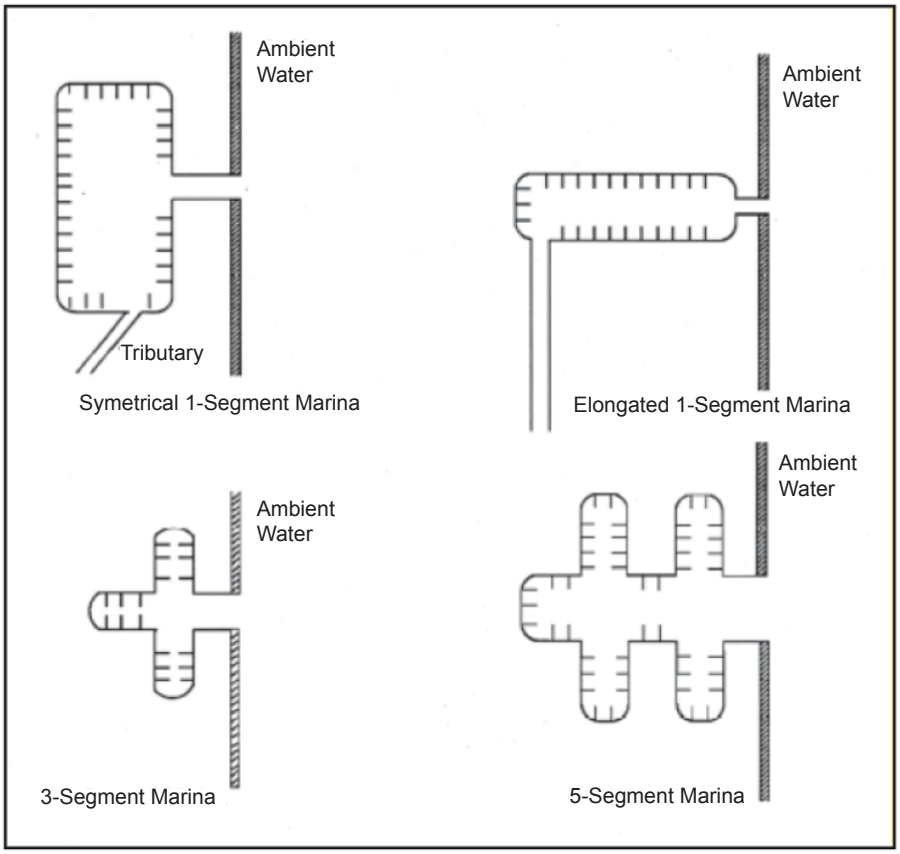
Enhance Water Circulation

The water quality and biological health of marinas depend largely on how well water circulates and is flushed within and through the basin. If a marina is not properly designed, pollutants will build up in the water or sediment. Excess dredging to create deeper water can also slow flows and diminish the re-oxygenation of water in the marina basin.

- ✓ Select an open design for new or expanding marinas. Open marina designs have little or no fabricated or natural barriers to restrict the exchange of water between the lake or river and the marina.
- ✓ Design new or expanding marinas with as few segments as possible to promote circulation within the basin (refer to figure on the next page). The fewer the segments, the better the circulation.
- ✓ Locate marinas along well-flushed waterways.
- ✓ Align entrance channels with natural channels to increase flushing.
- ✓ Avoid locating the entrance channel perpendicular to the natural channel, as shoaling may increase the need for maintenance dredging.
- ✓ Avoid using long, winding channels to connect marinas to open water.
- ✓ Where possible, establish two openings at opposite ends of the marina to promote flow-through currents.
- ✓ Choose fixed or floating structures that encourage rather than impede water movement. Floating dock systems can be removed in the winter to avoid ice damage and the debris that may result. Floating structures also accumulate zebra and quagga mussels, which can be easily removed when the docks are stored on land.
- ✓ Install wave attenuators to reduce the force of incoming water if protection is necessary. Wave attenuators do not restrict water exchange or significantly interfere with fish migration or shoreline processes. They are also easily

removed

- ✓ Use a mechanical aeration system to aerate areas with poor circulation. Circulators can also minimize icing during winter.
- ✓ Inspect aeration systems routinely to avoid encrustation of zebra or quagga mussels and other organisms. Submersible pumps, or airlines for bubbling systems, may be protected with materials that resist attachment, such as



Example of marina designs (Source: U.S. EPA 2001)

copper, brass, and galvanized steel.

Consider Bottom Configurations

- ✓ Develop facilities by cutting into the upland areas rather than building out into the bottomland or shallow nearshore areas. This prevents the loss of access to public trust waters and bottomland.
- ✓ Design marinas to accommodate a gradual downward slope from the berthing area into deeper water, if possible.
- ✓ Avoid canals, irregular pockets, and sumps that are deeper than adjacent channels.
- ✓ Avoid square corners in marina basins and dead-end

channels wherever possible.

Evaluate Upland Impacts

- ✓ Investigate runoff drainage through the proposed site and avoid siting buildings in drainage areas (40 CFR 122.26).
- ✓ Avoid steep slopes where serious erosion can occur.
- ✓ Identify and avoid areas with high groundwater during wet periods.

Design Environmentally-Friendly Facilities

- ✓ Design facilities to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design certification requirements. Visit new.usgbc.org/leed for more information.
- ✓ Build new pilings and other structures in or above the water with materials that will not leach hazardous chemicals into the water or degrade in fewer than 10 years. Possible materials include reinforced concrete, coated steel, recycled plastic, vinyl sheet piling, or plastic reinforced with fiberglass.

- ✓ Contain shavings when cutting plastic pilings and timbers at your marina.
- ✓ Do not use wood treated with creosote for pilings or similar structures in or above the water.
- ✓ Use naturally durable timbers conservatively. Black locust, cedar, chestnut, and white oak are naturally durable but expensive and may be hard to find.
- ✓ Avoid exotic timbers. Although tropical trees such as greenheart and bongossi are also naturally durable, their harvest is harmful to tropical forests.
- ✓ Use recyclable decking material.
- ✓ Purchase floatable foams that have been encapsulated in plastic to ensure that degraded foam is contained as floats age.

Marina Maintenance and Operation

Environmental Concerns

Land management decisions, operating procedures, and structural improvements may all contribute to—or detract from—the quality of the land and water surrounding your marina. Roads and parking areas may convey stormwater directly into adjacent waterways. Dredging may re-suspend toxic compounds such as heavy metals, hydrocarbons, and synthetic chemicals. Hazardous chemicals may be leached into the water from piers and other similar structures. And, the installation of lakeside and in-water structures may lead to accelerated coastal erosion and sedimentation that can bury bottom-dwelling organisms, block sunlight, and clog fish gills.

The final design of a marina should be a compromise of marina capacity, services, and access, while minimizing environmental impacts, dredging requirements, protective structures, and other site-development costs. When marinas are designed with consideration of land and water quality in mind, they can be an asset instead of a detriment to the ecosystem.

Laws and Permits

Marina Construction and Dredging

The Clean Water Act sets standards for the discharge of dredge or fill materials into navigable waters, including wetlands. Under Section 404 of the act (33 U.S.C. 1344), the majority of marina development and expansion projects along the Great Lakes, including dredging, will require a joint permit from the U.S. Army Corps of Engineers (USACE), the Illinois Department of Natural Resources (IDNR), and the Illinois Environmental Protection Agency (IEPA). In addition, 17 IAC 3704 requires a permit from IDNR for construction projects in any public body of water. More information on dredging permits can be found at www.dnr.illinois.gov/WaterResources/Pages/Permit%20Programs.aspx.

Before a Section 404 permit can be issued, IEPA must certify that the proposed project is in compliance with the state's water quality standards (33 USC 1341). For individual permits, certification occurs during the application review. In order for nationwide permits and other general permits issued by USACE to be valid in Illinois, IEPA must have already certified that the activities they permit will meet water quality standards. Applications that fail to meet water quality standards can be denied even if the proposed activity complies with all other Section 404 provisions. For additional information on the certification program, call the IEPA Watershed Management Section at (217) 782-3362.

Environmental Concerns

Laws and Permits
- Marina Construction and Dredging
- Endangered Species Assessment
- Fish and Wildlife Impact Review
- Pesticide Application

Best Management Practices for Marina Facilities and Structures
- Use Upland and Inland Areas
- Limit Shaded Areas over the Water
- Minimize the Need for Dredging
- Employ Nonstructural Shore Erosion Control Measures
- Minimize Impervious Areas
- Implement a Light Reduction Plan
- Build Dry-Stack Storage
- Conserve Water at Facilities
- Meet Recycling Collection Needs
- Maintain Structures Using Clean Marina Practices

Best Management Practices for Protecting Habitats
- Conserve Sensitive Land
- Minimize the Impacts of Dredging
- Practice Water Conservation Landscaping
- Adopt Integrated Pest Management Practices
- Help Control the Spread of Aquatic Invasive Species

Best Management Practices for Creating Habitats
- Enhance Habitats

References

Sediment testing is not required for every dredging project. However, in some cases, IEPA may require sediment sampling prior to dredging to determine the appropriate disposal options (35 IAC 395.203). It is strongly recommend that you contact IEPA early to see what is required. If required, sediment testing data needs to be submitted with the permit applications.

Endangered Species Assessment

The Endangered Species Act (33 U.S.C. 1251-1376) protects species that are in danger of extinction throughout all or a significant portion of their range. Under this act, a biological assessment is required to determine if endangered species are present before construction activities may begin.

Fish and Wildlife Impact Review

The Fish and Wildlife Coordination Act (16 U.S.C. 661) provides authority for the U.S. Fish and Wildlife Service (USFWS) to review impacts to fish and wildlife from activities that require a USACE permit, such as dredging.

Pesticide Application

Part of the National Pollutant Discharge Elimination System (NPDES), Illinois created the General NPDES Permit for Pesticide Application Point Source Discharge in 2011. Marinas are required to have this permit if they use biological or chemical pesticides on the water or along the shoreline to manage plants, insects, or animals (35 IAC 309). Marinas can either acquire this permit for themselves or contract with a permitted commercial pesticide applicator. Eligibility and application requirements can be found at www.epa.state.il.us/water/permits/pesticide/general-permit.pdf.

As a condition of the General Permit for Pesticide Application, marinas that apply pesticides to more than 80 acres of water surface area or 20 linear miles of shoreline annually must develop and implement a Pesticide Discharge Management Plan. Visit www.epa.state.il.us/water/permits/pesticide/pdmp.html for more information.

Best Management Practices for Marina Facilities and Structures

Use Upland and Inland Areas

- ✓ Locate buildings, workshops, and waste storage facilities in upland areas, away from fragile shore-side ecosystems, whenever possible. Upland areas also provide a measure of protection against floods.
- ✓ Locate parking and vessel storage areas away from the

water, where feasible, and provide infiltration greenbelts between these areas and the water.

- ✓ Consider inland areas for boat repair activities and winter storage. Use hydraulic trailers to quickly and easily move boats to inland storage locations.

Limit Shaded Areas over the Water

- ✓ Limit the number of covered slips in order to provide nearshore bottom-dwelling organisms with as much sunlight as possible.
- ✓ Choose docking systems that minimize light blockage.

Minimize the Need for Dredging

- ✓ Design new marinas so that deep water can be reached with minimum excavation, filling, and dredging.
- ✓ Consider options to increase circulation or reduce sediment accumulation if your marina requires maintenance dredging more frequently than once every four years. Possibilities include:
  - Extending piers and docks into naturally deep waters.
  - Locating slips for deep draft boats in naturally deep water.
  - Dredging channels to follow the course of the natural channel.
  - Providing dry storage for smaller boats.

Employ Nonstructural Shore Erosion Control Measures

- ✓ Use nonstructural measures that encourage the preservation of the natural environment, such as beach nourishment, wetlands creation, and shoreline plantings, to manage shore erosion.
- ✓ Use revetments or breakwaters to stabilize and ensure the long-term viability of nonstructural controls when they are not sufficient to control erosion alone.
- ✓ Build structural controls as a last resort and in this order of preference: shoreline revetments, breakwaters, and bulkheads.
- ✓ Minimize the adverse effects of erosion control projects on adjacent properties, navigation, threatened or endangered species, and significant historic or archaeological resources.
- ✓ Post “no wake” signs to indicate areas with sensitive shorelines.

Minimize Impervious Areas

- ✓ Keep paved areas to an absolute minimum.
- ✓ Use pervious pavers or porous pavement where pavement is needed.
- ✓ Maintain vegetated buffers, such as rain gardens, trees and shrubs, or grasses, between all impervious surfaces and the water. Properly constructed rain gardens and woody vegetation are more effective than turf grass in absorbing runoff and pollutants.
- ✓ Check with local authorities to ensure compliance with local zoning ordinances.

Implement a Light Reduction Plan

- ✓ Become familiar with and adhere to local building and development codes related to light pollution.
- ✓ Follow LEED standards. Visit new.usgbc.org/leed for more information.
- ✓ Minimize site lighting wherever possible.
- ✓ Define the project boundary and consult with a lighting engineer when determining where to place luminaries to ensure that light trespass is controlled.
- ✓ Minimize light trespass using technologies that restrict light to where it is needed, such as full cutoff luminaries, low-reflectance surfaces, and low-angle spotlights.
- ✓ Install timers, occupancy sensors, or other controls to extinguish light when not needed.
- ✓ Replace incandescent bulbs with LED or fluorescent bulbs. These produce the same amount of light output for less energy.
- ✓ Train marina employees and boaters to use lighting systems efficiently.

Build Dry-Stack Storage

- ✓ Consider expanding storage capacity by adding covered dry-stack storage rather than wet slips. Dry-stacked boats:
  - Do not accumulate marine growth, making antifouling unnecessary and the associated need to wash, scrape, and paint minimal
  - Are less likely to accumulate water in their bilges and, therefore, discharge oily bilge water
  - Require less weathering and maintenance
  - Allow for greater public access to waterways and an increased number of rental units

- ✓ Manage stormwater runoff from dry-stack areas and any expanded parking areas to reduce the flow of runoff and prevent pollutants from entering the water.
- ✓ Use absorbent booms to collect any grease or oil in the launching and retrieval areas for the dry-stack building.
- ✓ Plan for accidental spills and possible fires in dry-stack storage facilities, which concentrate boats in a relatively small area. See the Safety and Emergency Preparedness chapter for more information.

Conserve Water at Facilities

- ✓ Equip all freshwater hoses with automatic shutoff nozzles.
- ✓ Fix any leaks and drips from dockside faucets or hoses.
- ✓ Install low-flow faucets, toilets, and shower heads.
- ✓ Install automatic faucets and toilet fixtures.

Meet Recycling Collection Needs

- ✓ Provide recycling containers for waste materials banned from landfill disposal or incineration, including lead acid batteries, waste oil, used oil filters, and electronic waste (415 ILCS 5).
- ✓ Anticipate need for collection bins and pick-up services when designing new marinas.

Maintain Structures Using Clean Marina Practices

- ✓ Scrape, sand, and paint land-side structures according to the same management principles used for vessels. See the Vessel Maintenance and Repair chapter for more information.
- ✓ Move floating structures to shore for scraping, painting, and major repairs, if possible.

Best Management Practices for Protecting Habitats

Conserve Sensitive Land

- ✓ Preserve natural habitats whenever possible.
- ✓ Minimize disturbance to native vegetation in areas along the banks of rivers, streams, lakes, ponds, reservoirs, and wetlands.
- ✓ Consider how changes to the shoreline will affect wildlife before making any changes.
- ✓ Minimize the use of riprap where possible and maintain

native vegetation along shorelines. If structural shoreline protection must be used, use riprap revetments instead of vertical bulkhead walls (concrete or steel sheet pile) as much as possible.

- ✓ Discourage unnecessary idling. Emissions can be harmful to the surrounding habitats and contribute to climate change.
- ✓ Provide a serene setting for your marina by placing adjacent sensitive land in a conservation trust. Income, estate, and property tax benefits may be available.
- ✓ Participate in programs to preserve farmland, forestland, waterfront, wetlands, rare or unique areas, scenic areas, endangered species habitats, historic properties, and open spaces.
- ✓ Sell or donate the land, or the development rights, to a local land trust or a non-profit organization.

Minimize the Impacts of Dredging

Dredging has the potential to reduce fish spawning and threaten juvenile fish survival due to the removal of bottom substrates and resulting high levels of suspended silt. Currents can also move silt particles suspended during dredging away from the site and deposit them in other spawning or juvenile fish habitats.

- ✓ Contact and work with the IEPA Bureau of Water to ensure that dredging projects have minimal impact on the environment and are in line with state laws.
- ✓ Do not dredge during critical migration or spawning periods of important species of fish and wildlife. Contact IDNR to learn when these periods are.
- ✓ Avoid colonial waterbird nesting areas and historic waterfowl staging and concentration areas.
- ✓ Ensure that your dredging contractor selects an appropriate disposal site and containment design for the sediment. The disposal site must have minimal impact on public safety, adjacent properties, and the environment. Dredge material must be disposed of in accordance with 35 IAC 807-810.
- ✓ Use dredging methods that minimize environmental impacts, like hydraulic dredging.

Practice Water Conservation Landscaping

- ✓ Replace lawn areas with wildflowers, groundcover, shrubs, and trees.

- ✓ Select plants that are suited to the existing soil type, moisture, and sunlight. These types of plants will require minimal water, fertilizer, and pesticides.
- ✓ Select perennial plants instead of annuals. Perennial plants only need to be planted once and tend to shade out most weeds. Consult with University of Illinois Extension or local nurseries for advice on selecting the right plants.
- ✓ Place mulch (wood chips, bark, grass clippings, nut shells, etc.) to a depth of 3-4 inches around plants and at the base of trees to keep water in the soil, prevent weeds, and reduce the amount of soil picked up by stormwater.
- ✓ Group plants with similar water needs together. This practice will ease your maintenance burden, conserve water, and benefit the plants.
- ✓ Water only when shrubs wilt and grass lies flat and shows footprints.
- ✓ Water in the early morning or early evening when temperatures generally are cooler to minimize water loss due to evaporation.
- ✓ Water deeply and infrequently. Deep watering promotes stronger root systems that enable plants to draw on subsurface water during hot spells and droughts.
- ✓ Select equipment that is appropriate for your watering needs. Sprinklers work well for lawns. Soaker hoses or drip irrigation systems deliver water directly to the roots of shrubs, flowers, and vegetable plants with minimal loss from evaporation.
- ✓ Collect rainwater by directing downspouts into covered containers, such as commercially-available rain barrels or cisterns. Use the collected water on your landscaped areas.
- ✓ Recycle graywater—wastewater from activities like dishwashing and bathing that does not contain sewage or chemicals. Graywater can be filtered and used to water landscaped areas, but it must be conveyed in a plumbing system separate from potable water. Check local ordinances for permit requirements and obtain written approval before pursuing this option.

Adopt Integrated Pest Management Practices

Integrated pest management is an ecological approach to pest control. It integrates cultural, mechanical, biological, and, as a last resort, chemical control methods while minimizing effects on non-target species and wildlife. See lawntogreatlakes.org for more information on green lawn care.

- ✓ Select native plants that are disease and insect resistant, will out-compete common weeds, and are adapted to your geography and soil conditions. Consider the degree of sun/shade exposure, slope, drainage, wind, volume of foot traffic, soil type, temperature variations, and other environmental factors. For information on Illinois native plants, visit www.il.nrcs.usda.gov/technical/plants/npg/.
- ✓ Rotate plants periodically to disrupt the life cycle of pests.
- ✓ Mow when grass reaches 3-4 inches. Set your mower to cut at 2-2 1/2 inches in height and avoid cutting more than a third of the height.
- ✓ Use mulches to reduce weed problems, conserve moisture, and prevent soil erosion.
- ✓ Tolerate weeds and other pests that are not harmful.
- ✓ Foster natural predators such as spiders, praying mantises, dragonflies, lacewings, soldier beetles, birds, bats, frogs, lizards, toads, and certain snakes.
- ✓ Use natural agents such as *Bacillus thuringiensis* (BT) or inorganic insecticides that kill pests on contact and pose little threat to the environment. Check the label to be sure that the natural agents are approved for use in aquatic systems.
- ✓ Pull weeds by hand instead of relying on herbicides.
- ✓ Use pesticides only after all other options have been exhausted. An IEPA permit is required to apply pesticides to aquatic plants. More information on permit requirements can be found at www.epa.state.il.us/water/permits/pesticide/index.html.
- ✓ Apply pesticides directly to problem areas. Select pesticides that are designed to kill only the insect, weed, or disease organism that is causing the problem.
- ✓ Treat only serious or intolerable pest infestations and purchase the least toxic chemical in the smallest amount practical.
- ✓ Do not use pesticides just before it rains or on a windy day.

- ✓ Apply insecticides during the evening, when honeybees and other beneficial insects are less active.

Help Control the Spread of Aquatic Invasive Species

Biologists estimate that more than 180 aquatic invasive species (AIS) now inhabit the Great Lakes region, causing billions of dollars of economic damage and significant ecological change. Invading species—such as zebra and quagga mussels, round goby, and Eurasian water milfoil—have displaced native species, drastically altered aquatic ecosystems, and interfered with business and recreational activities. Because invasive species are virtually impossible to eliminate, preventing new introductions is essential. Boats and equipment can transport invasive species, and unwanted bait dumped by sport anglers can become invaders. Encouraging best management practices at your marina can help limit the spread of AIS to other water bodies.

Training and Facilities

- ✓ Become familiar with the invasive species in Illinois. For a list of species, visit www.dnr.illinois.gov/adrules/documents/17-805.pdf.
- ✓ Train marina personnel and boaters to identify AIS. For identification resources, access the Great Lakes Aquatic Nonindigenous Species Information System through www.glerl.noaa.gov.
- ✓ Encourage anglers to use non-invasive or native species as bait.
- ✓ Train marina personnel and boaters on procedures for washing the exterior and interior surfaces of boats. Refer to the section below for a list of procedures.
- ✓ Consider providing pressure washing stations—either fixed or portable—or a boat decontamination unit.
- ✓ Consider dedicating parking area for boaters to inspect and clean boats.
- ✓ Prohibit personnel and customers from dumping removed species into the water (17 IAC 805.30).
- ✓ Remind personnel and boaters that it is illegal in Illinois to drive on public roads with aquatic plants or animals attached to a boat or trailer (625 ILCS 45/5/23).
- ✓ Post signs reminding boaters of steps to take before retrieving or launching boats. Visit iiseagrant.org/catalog/ais/SAH_launch.html to order a Stop Aquatic Hitchhikers sign.
- ✓ Distribute the AIS Clean Boater Tip Sheet included at the

end of this guidebook.

- ✓ Include best practices and laws with renewal fee orders and other yearly mailings.
- ✓ Instruct boaters to contact marina personnel if they believe they have identified an invasive species.
- ✓ Report new infestations to USFWS at (877) 786-7267.
- ✓ Train marina personnel on the Stop Aquatic Hitchhikers Clean Boats Crew program. Visit www.iiseagrant.org/ais/cleanboats.html for more information.
- ✓ Participate in the Hydrilla early detection and rapid response program. More information about the program and instructions for reporting a possible siting of this aquatic invasive plant can be found at www.niipp.net.

Cleaning and Removing

- ✓ All equipment surfaces exposed to water should be cleaned and dried, especially if the equipment has been left for more than a day on water infested with zebra or quagga mussels.
- ✓ Special attention should be given to cleaning and drying boats before moving between water bodies.
- ✓ Mud, plants, and animals should be removed from boats, propellers, trailers, and accessory equipment whenever boats are launched or retrieved. Anchors and anchor ropes, downrigger cables, fishing tackle, and scuba gear can harbor invasive species. All mud, plants, and animals must be removed before leaving the marina (625 ILCS 45/5-23).
- ✓ Invasive species should be discarded in trash cans (17 IAC 870.30) located away from the water to prevent re-entry.
- ✓ The bilge, live well, and other water containing devices should be drained before leaving the marina.
- ✓ Equipment should be left to dry for at least five days or wiped with a towel before reuse.
- ✓ Equipment that has been left in the water for more than a day or has been exposed to a known infested body of water should be cleaned using additional decontamination methods:
  - Spray hull and other external areas or recreational equipment with high pressure, hot water. Water temperature should be as hot as possible.

- Flush motors according to owner's manual with hot water.
- Rinse interior compartments with hot water.
- Use 100 percent vinegar or a 3 1/2 percent salt water solution if hot water is unavailable. Sanitizing solutions of bleach should be avoided because they may be harmful to beneficial organisms.

✓ Unused bait, worms, and fish parts should be disposed of in proper collection receptacles. Unused bait should never be dumped into the water.

Best Management Practices for Creating Habitats

Enhance Habitats

✓ Add rocks to the shoreline to create new areas for feeding and spawning.

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

✓ Maintain proper soil pH and fertility levels. These two measures together tell you which plants your soil can support.

✓ Adjust soil pH by adding lime (base) or gypsum (acid), if needed.

✓ Add organic matter such as compost, leaf mold, manure, grass clippings, bark, or peat moss to improve soil fertility. Be careful to not deposit organic matter into any water body.

✓ Submit a soil sample to your University of Illinois county extension office or soil conservation district office periodically to determine fertility, pH, and application rates for soil amendments. Visit www.aiswcd.org/Guide/swcd.htm to find your soil conservation district and web.extension.illinois.edu/state/findoffice.html for information about extension offices.

✓ Foster beneficial organisms such as pillbugs, which aerate the soil and improve the flow of water and air to plant roots.

✓ Compost leaves, branches, grass trimmings, and other organic matter. Use the mature compost to nourish your soil.

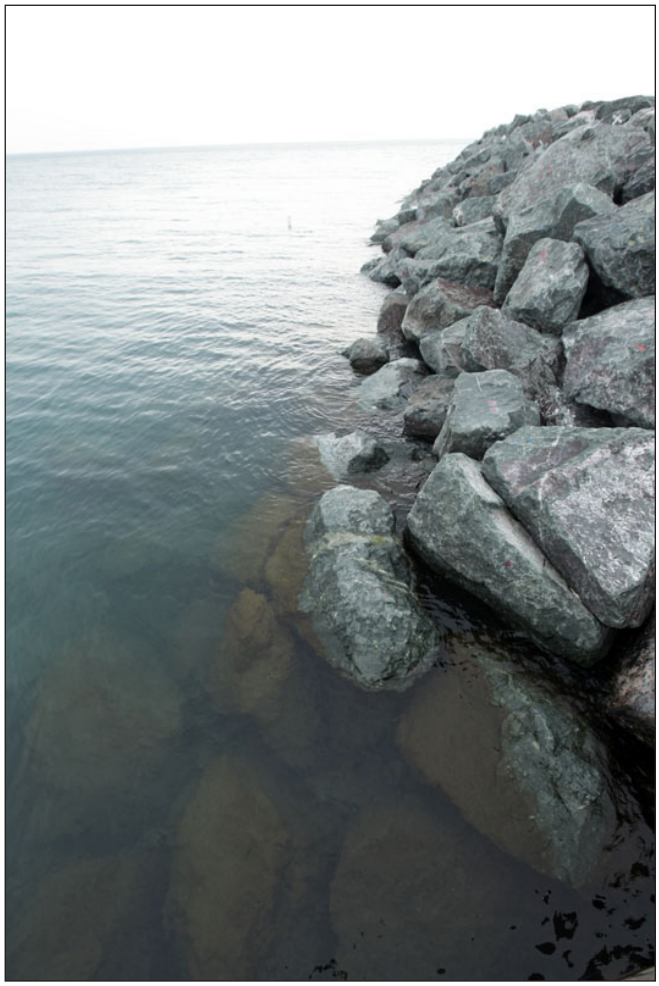
✓ Chip branches and leaves and use them as mulch to

discourage weeds and conserve moisture.

- ✓ Consider using captive beaches between rock headlands to protect shorelines and provide beach habitat for shorebirds, waterfowl, and turtles.
- ✓ Add spawning-sized rocks at the toe of breakwalls to enhance fish-spawning habitat. Consult the IDNR Division of Fisheries for the proper rock size for desired fish species in your area.
- ✓ Create or allow development of wetland vegetation along the outside perimeter of the marina or in shallow-water areas. Wetland vegetation provides habitat for fish and wildlife and helps reduce erosion and shoreline damage from storms and wave action.

References

United States Environmental Protection Agency. 2001. *National Management Measures Guidance to Control Nonpoint Source Pollution from Marinas and Recreational Boating*. Washington, DC: EPA-841-B-01-005.



Stormwater Management

Environmental Concerns

Heavy rains and snow melt can produce more water at one time than the ground can absorb. This excess water—called stormwater runoff—flows over the land and carries pollutants into nearby lakes and rivers. Common pollutants found in marina stormwater include sediment, nutrients, litter, oil, grease, fuel, sanding and paint chips, copper, and other heavy metals.

Pollutants carried by stormwater runoff impair water quality by increasing levels of nitrogen, phosphorus, suspended solids, and organic materials that increase oxygen demand as they decompose. Stormwater runoff also increases the levels of toxic metals and hydrocarbons from petroleum products in the water. At the same time, dissolved oxygen and water clarity decrease, and the acidity/alkalinity of the water typically changes. The result is nearshore areas that are less able to support wildlife like young fish and water quality that is less desirable for human recreation.

Hard surfaces like buildings, roofs, parking lots, driveways, and roads prevent water from being absorbed, so runoff in developed areas moves faster and with greater volume than in undeveloped areas. This heavier runoff can severely degrade receiving water bodies by accelerating erosion and pollution delivery, leading to flooding, harm to plant and animal life, and loss of habitat.

Laws and Permits

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) Storm Water Management Program, created in an amendment to the Clean Water Act (33 U.S.C. 1342), regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. The Illinois Environmental Protection Agency (IEPA) is in charge of implementing the program and issuing general permits in Illinois. For more information, visit www.epa.state.il.us/water/permits/storm-water/index.html.

Most marinas and boatyards are considered Tier II industries and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (35 IAC 309). For more information and to access permit forms, visit www.epa.state.il.us/water/permits/storm-water/industrial.html. Some marinas, such as those managed by the Chicago Park District, may be covered by a Municipal Separate Storm Sewer System (MS4) permit. Consult with your municipality to deter-

Environmental Concerns

Laws and Permits
- National Pollutant Discharge Elimination System

Best Management Practices for Controling Stormwater Runoff
- Practice Low-Impact Development
- Cultivate Vegetated Areas
- Minimize Impervious Surfaces
- Use Structural Controls as Necessary
- Minimize Pollution in Runoff
- Control Sediment from Construction Sites
- Stencil Storm Drains

mine if your marina is part of an MS4 or visit www.epa.state.il.us/water/permits/storm-water/2000-urbanized-area-list.pdf for a list of cities with MS4 permits.

Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent to request coverage under these permits. Instructions and permit forms can be found at www.epa.state.il.us/water/permits/storm-water/construction.html.

As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality. Guidance for developing a SWPPP for construction sites can be found at www.epa.gov/npdes/pubs/sw_swppp_guide.pdf. Similar information for industrial operators can be found at www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf. A sample SWPPP is also included in Appendix III.

As part of the SWPPP, marinas are required to perform monitoring and keep records for five years. Monitoring must include a visual inspection of non-stormwater discharges, an annual facility site compliance inspection, and regular visual monitoring of stormwater quality.

Best Management Practices for Controling Stormwater Runoff

Practice Low-Impact Development

Low-impact development maximizes a site's natural features, such as vegetation, and minimizes the need for expensive stormwater control devices. Ideally, low-impact development allows for the development of a site without altering the predevelopment runoff quantity and quality.

- ✓ Cluster structures on the lot to avoid sensitive resources, steep slopes, riparian buffers, wetlands, and floodplains without sacrificing development.
- ✓ Protect sensitive areas, such as floodplains, riparian areas, wetlands, woodlands, prairies, natural flow pathways, and steep slopes.
- ✓ Protect areas particularly susceptible to erosion and sediment loss.
- ✓ Minimize damage to soil by reducing disturbances caused by design and construction practices, heavy equipment

use, and unnecessary clearing or stockpiling of topsoil.

- ✓ Protect natural drainage features and vegetation.
- ✓ Consider using ground cover and landscaped beds of native plants instead of turf. These require less water, fertilizer, pesticides, and maintenance.
- ✓ Minimize stormwater volume by disconnecting roof leaders, impervious roads, and driveways and rerouting runoff to areas that allow infiltration at the site.

Cultivate Vegetated Areas

- ✓ Preserve areas of natural vegetation wherever possible.
- ✓ Plant landscapes at the edge of parking lots or within islands in parking lots to absorb runoff.
- ✓ Plant vegetated buffers, trees, and shrubs between your upland property and the water's edge. Construct wetlands where appropriate.
- ✓ Choose the correct plants for your location. For more information on identifying the right plants, visit www.iiseagrant.org/catalog/downlds_09/rightplants_rightplace.pdf.
- ✓ Plant slower growing species that need less pruning and create less yard waste.
- ✓ Use a variety of native trees, shrubs, grasses, and wild flowers where possible to reduce disease and infestation.
- ✓ Group plants with similar water needs together.
- ✓ Position downspouts so that they drain into vegetated areas. Avoid draining to concrete or asphalt.
- ✓ Consider using rain barrels to capture downspout water that can be used to water vegetation during dry weather.

Minimize Impervious Surfaces

The fewer impervious areas there are on-site, the less runoff you will have to manage.

- ✓ Pave only where it is absolutely necessary.
- ✓ Minimize the length of new roadways required to serve new or expanding marinas.
- ✓ Plan roads so they do not cross sensitive areas, such as wetlands.
- ✓ Consider alternatives to asphalt for parking lots and vessel storage areas, such as gravel, pervious pavers, or engineered porous pavement. For more information on

pervious pavement, visit www.cmap.illinois.gov/strategy-papers/stormwater-best-management-practices/green-infrastructure.

- ✓ Contact local authorities about size requirements for road and parking lot surfaces. Your marina may have to receive permission to use porous surfaces because of aesthetic requirements that are consistent with traditional paving.

Use Structural Controls as Necessary

Grants to support the installation of stormwater management structures in developed areas are available through IEPA. For more information, visit www.epa.state.il.us/water/financial-assistance/igig.html.

- ✓ Select a stormwater management structure that is appropriate for your property. Visit www.lid-stormwater.net/lid_techniques.htm for more information on structures. Some to consider include:
  - Stormwater pond systems that capture and slowly release stormwater runoff. Ponds may hold water permanently (retention ponds) or only temporarily (detention ponds).
  - Man-made wetland systems that are designed to mimic the ability of natural wetlands to cleanse and absorb stormwater runoff.
  - Infiltration systems that take advantage of the soil's natural infiltration and removal capacities. Bioswales, rain gardens, and porous pavement are examples of infiltration systems.
  - Filter systems that "strain" runoff to remove pollutants. Conventional sand filters and oil/grit separators are examples of filter systems.
- ✓ Develop and follow maintenance schedules for stormwater management structures.

Minimize Pollution in Runoff

- ✓ Cover work and storage areas to avoid contact between rainfall and equipment, fuelling, and work areas. See the Vessel Maintenance and Repair chapter for more information.
- ✓ Keep heavy equipment well-tuned to prevent grease or oil from dripping onto staging areas or into the water.
- ✓ Control stormwater runoff from dry-stack and expanded parking areas.
- ✓ Scrape, sand, and paint land-side structures according to the same management principles for vessels. See the Vessel Maintenance and Repair chapter for more information.

- ✓ Conduct maintenance on floating structures in areas set aside for scraping, painting, and major repairs whenever possible.

Control Sediment from Construction Sites

- ✓ Become familiar with and adhere to soil erosion regulations for construction sites (35 IAC 309).
- ✓ Use devices such as straw bales, silt fences, storm drain filters, sediment traps, and earth dikes to prevent sediments from leaving construction areas. Additional erosion control strategies can be found at ftp-fc.sc.egov.usda.gov/IL/pdf/pubs/Urb_ErosSedim_Control08.pdf and www.dot.state.il.us/desenv/environmental/idot%20field%20guide.pdf.
- ✓ Use chipped wood for sediment control instead of floatable mulches in areas where runoff could wash the mulch into the water. Engineered wood products and dimensional lumber make up a large percentage of the wood waste from construction activities, and they can be chipped to provide an effective and inexpensive method of erosion and sediment control.

Stencil Storm Drains

- ✓ Stencil or label storm drains with the words "Don't Dump—Drains to Lake (River)" and "No Fish Waste" wherever appropriate. Stencils and instructions are available from local watershed groups and councils. For more information, visit www.lakecountyil.gov/Stormwater/Documents/Public%20Information%20and%20Mapping/Stenciling%20Guide_0306.pdf.
- ✓ Get permission from the county or city department that maintains storm drains in your community prior to applying any stencils or labels.

Links

Forms for stormwater management requirements are available at www.epa.state.il.us/water/forms.html.

Vessel Maintenance and Repair

Environmental Concerns

Many common maintenance activities have the potential to introduce pollutants into the environment. Sanding, blasting, and pressure washing used to remove paint and aquatic growth can release toxic heavy metals, such as copper and tin. If heavy metals find their way into the water, they may be consumed by 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 they may substantially increase the disposal cost of any dredged material.

Paints, solvents, thinners, and brush cleaners generally are toxic. If spilled, they may harm aquatic life and water quality. Additionally, the fumes—known as volatile organic compounds (VOCs)—released by some paints and solvents contribute to air pollution. Likewise, oil and grease from maintenance areas threaten aquatic life.

Many of the cleaning products meant for use in boat shops are also toxic and contain caustic or corrosive elements. They may also contain chlorine, phosphates, inorganic salts, and metals. Even non-toxic products can be harmful to wildlife. For example, detergents found in many boat-cleaning products will destroy the natural oils on fish gills, reducing their ability to take up oxygen.

Laws and Permits

Antifouling Paints

The Illinois Pesticide Act (415 ILCS 60) requires marinas that apply antifouling paints to boats to follow certain licensing and certification regulations. These requirements differ depending on whether the marina is applying the antifouling paints in a for-hire status and whether the paint is a restricted-used product. In Illinois, antifouling paints containing tributyl tin are classified as a restricted-use pesticide. The federal Organotin Antifouling Paint Control Act (OAPCA) also restricts the use of tin-based paints on aluminum vessels, boats larger than 82 feet (25 meters), outboard motors, and lower drive units.

Marinas that apply antifouling paint for-hire need a commercial pesticide applicator license. In addition, the person(s) applying the antifouling paint would need to be a certified pesticide applicator in the antifouling paint category and be licensed as an individual commercial pesticide applicator for-hire. This is required regardless of whether the antifouling paint contains a restricted-use or nonrestricted-use pesticide.

A pesticide applicator license is not required for people to apply

Environmental Concerns

Laws and Permits
- Antifouling Paints

Best Management Practices for Vessel Maintenance and Repair
- Work Areas
- Boat and Equipment Washing
- Solvents
- Compound Waxing
- Fiberglassing
- Teak Refinishing
- Varnishing
- Repairing and Maintaining Engines
- Maintaining Bilges
- Winterizing
- Battery Storage and Disposal
- Boat Disposal
- In-Water Maintenance
- Sanding
- Blasting
- Painting Operations
- Paint Stripping
- Educating Boater

References

a non-restricted pesticide to their boat or a boat owned by their employer. However, a person must be certified as a pesticide applicator in the antifouling paint category and be licensed as an individual commercial applicator to apply a restricted-use pesticide. Businesses do not need to obtain a commercial pesticide applicator license for employees to be able to apply antifouling paint to a boat owned by the business.

For more information on the certification process, visit www.agr.state.il.us/Environment/Pesticide/training/commappl.html.

Best Management Practices for Vessel Maintenance and Repair

Marinas that provide maintenance and repair services should implement the practices described in this chapter to control pollution caused by common maintenance activities. Where boaters are allowed to perform their own maintenance work, marina personnel should encourage them to follow relevant procedures as well.

Work Areas

One of the easiest ways to control waste and runoff pollution is to restrict the area where the maintenance activities may be performed.

- ✓ Require marina personnel and boaters to perform all major repairs, such as stripping, fiberglassing, and spray painting, in designated areas as far away from the water as possible.
- ✓ Prohibit maintenance or repair work outside of designated maintenance areas.
- ✓ Clearly mark the work area with signs, such as "Maintenance Area for Stripping, Fiberglassing, and Spray Painting."
- ✓ Locate boat maintenance areas for new marinas upland of a 100-foot shoreline buffer zone.
- ✓ Locate boat maintenance areas on an impervious surface where debris can be collected easily and, where practical, under a roof. Sheltering the area from rain will prevent stormwater from carrying debris into surface waters.
- ✓ Perform work over filter fabric, canvas, or plastic tarps if asphalt, cement, or other impervious surfaces are not practical. Filter fabric will retain paint chips and other debris while still allowing water to pass through. Tarps may potentially be reused.
- ✓ Surround maintenance areas on impervious surfaces with a berm or retaining wall to contain waste and spills. This practice is not recommended for pervious surfaces, as it would promote ponding and infiltration of

contaminated water.

- ✓ Clean work areas after completing each operation or at the end of the day, whichever comes first. Remove sanding dust, paint chips, fiberglass, and trash.
- ✓ Ensure that stormwater runoff from other areas does not flow over the maintenance area.
- ✓ Use vegetative or structural controls described in the Stormwater Management chapter to treat stormwater runoff.
- ✓ Place a screen or filter fabric over storm drain grates to collect paint chips and other debris.
- ✓ Establish a schedule for inspecting and cleaning stormwater systems. Remove paint chips, dust, sediment, and other debris. Clean oil/water separators.
- ✓ Post signs in the boatyard describing BMPs that boat owners and contractors must follow, such as "Use Tarps to Collect Debris."
- ✓ Distribute your environmental policy to boaters.
- ✓ Develop procedures for managing requests to use the work space, to move boats to and from the site, and to ensure the use of BMPs.

Boat and Equipment Washing

Wastewater from equipment washing can contain contaminants like detergents, oils, dirt, solvents, and other chemicals that can flow into nearby rivers and lakes if not properly managed. Marinas can reduce the need for a NPDES Permit of Industrial Storm Water for washing activities (see the Stormwater Management chapter for additional information) by adopting the following practices:

- ✓ Require personnel and boaters to wash boats and equipment in designated areas away from the shoreline.
- ✓ Locate washing facilities on a permeable surface, such as grass or gravel. If a permeable surface is not possible, ensure that washing is done in a contained area where the wash water can be collected and treated, such as a bermed, impermeable surface.
- ✓ Direct water containing solids and particulates to a seepage

area, such as a vegetative buffer, so that solids are trapped by the soil.

- ✓ Remove collected solids from settling and filtration areas periodically to ensure continued settling and filtration capacity and to prevent solids from being carried into surface waters.
- ✓ Use devices such as compost socks, screens, filter fabrics, oil/water separators, sand filters, and hay bales to remove particles from water discharged directly to surface waters.
- ✓ Prohibit personnel and boaters from washing engine parts at a boat washing station.
- ✓ Prohibit the use of cleaners that contain ammonia, phosphates, petroleum distillates, sodium hypochlorite, or chlorinated solvents (415 ILCS 5/12).
- ✓ Use cleaning products that are non-toxic and phosphate free. Always follow the instructions on the label and test the product in an inconspicuous area. Beware of biodegradable products that may cause water-quality problems.
- ✓ Use products sparingly and only when "elbow-grease" is not working.
- ✓ Keep boats waxed to make it easier to clean and prevent surface dirt from becoming ingrained in the hull.
- ✓ Use the least amount of pressure necessary to remove growth but still leave the paint intact when pressure washing ablative/antifouling paint. Use a regular garden-hose and a soft cloth where practical.
- ✓ Reuse wash water. For example, recycle it through the power washing system (a closed water recycling operation) or use it to irrigate landscaped portions of the marina. The recycled water may be treated with an ozone generator to reduce odors.
- ✓ Use alternative cleaning techniques, such as:
  - Chemical treatments that rely on the addition of some type of catalyst to cause the heavy metals and paint solids to settle out of the water.
  - Physical treatments that can be used to concentrate pollutants, such as swirl concentrators. These are small, compact soil separation devices with no moving parts that discharge clean water. The process will only remove large particulate material.

Solvents

Refer to the Waste Contaminant and Disposal chapter for more

information about requirements for handling, storing, and transporting hazardous wastes.

- ✓ Store containers of usable solvents, as well as waste solvents, rags, and paints, in covered, UL-listed approved containers.
- ✓ Use one cleaning solvent to simplify disposal.
- ✓ Use the minimum amount of solvent needed for a given job.
- ✓ Direct solvents used to clean spray equipment into containers to prevent evaporation of volatile organic compounds. A closed gun cleaning system will reduce cleaning material costs.
- ✓ Pour solvents into containers that are the appropriate size for the job. This practice will prevent the contamination of a large amount of solvent.
- ✓ Use citrus-based solvents and other products with no or low volatility.
- ✓ Plan your spray painting jobs to minimize coating changes. Fewer changes mean less frequent purging of the spray system. Order your work light to dark.
- ✓ Allow solids to settle out of used strippers and thinners so you can reuse solvents.
- ✓ Keep records of solvent and paint usage so you know the amount of hazardous waste generated on-site (35 IAC 722).
- ✓ Hire a permitted and registered hazardous waste hauler to recycle or dispose of used solvents.

Compound Waxing

- ✓ Check all product material safety data sheets (MSDSs) and purchase products that are non-hazardous.
- ✓ Conduct compounding and waxing away from the water.
- ✓ Use phosphate-free, biodegradable, and non-toxic soap when prepping a hull, if possible. When removing tough stains, use only as much stain remover as necessary, or use a more abrasive rubbing or polishing compound.

Fiberglassing

- ✓ Minimize waste by working with small batches of resin.
- ✓ Avoid putting liquid hardener in the trash. It can spontaneously combust when mixed with sawdust and other materials.

- ✓ Store acetone appropriately. Refer to the Waste Containment and Disposal chapter for more information on handling, storing, and disposal requirements.

Teak Refinishing

- ✓ Avoid teak cleaners containing acids or those labeled as caustic, corrosive, or acidic. These cleaners can be toxic to marine life when spilled in water.
- ✓ Clean teak with a mild, phosphate-free detergent and bronze wool, if possible.
- ✓ Refinish teak in an upland maintenance area, if possible. If not, use safer cleaners and avoid flushing excess teak cleaner and teak oil into the marina basin.
- ✓ Consider selling environmentally friendly cleaning and maintenance products.
- ✓ Use a dustless or vacuum sander when sanding teak.

Varnishing

- ✓ Mix only as much varnish as is needed for a job.
- ✓ Consider sharing leftover varnishes with customers or setting up an exchange area for customers to swap unused items.
- ✓ Use less hazardous, water-based varnishes that pose less threat to human health or the environment.
- ✓ Clean up if varnish spills on land with absorbant materials and collect any contaminated soils. Spills in waterways should be contained and mopped up with booms or pads that repel water but absorb petroleum.

Repairing and Maintaining Engines

- ✓ Avoid unnecessary parts cleaning.
- ✓ Do not wash engine parts over the bare ground or water.
- ✓ Use dry pre-cleaning methods, such as wire brushing.
- ✓ Adopt alternatives to solvent-based parts washers, such as bioremediation systems that take advantage of microbes that digest petroleum. Bioremediation systems are self-contained with no effluent discharge and use a mixture of detergent and hot water.
- ✓ Use water-based, non-VOC cleaners that are less hazardous than solvent-based degreasers. These are also less toxic and non-flammable.
- ✓ Clean engine parts in a container or parts washer with a lid when using a solvent to prevent evaporation of VOCs. Keep the container lid closed when not in use. Continue to

reuse the solvent until it is totally spent, then recycle it.

- ✓ Use funnels to transfer fluids.
- ✓ Use drip pans when handling any type of liquid. Use separate drip pans for each fluid to avoid mixing.
- ✓ Recycle collected fluids whenever possible. Mixed liquids cannot be recycled and must be stored and disposed of as hazardous waste.
- ✓ Prohibit the discharge of antifreeze into drains or surface waters.
- ✓ Drain all fluids from parts prior to disposal.
- ✓ Clean engine repair areas regularly using dry cleanup methods, such as cleaning petroleum spills with oil-absorbent pads.
- ✓ Prohibit personnel from hosing down the shop floor.
- ✓ Store engines and engine parts under a cover on impervious surfaces, such as asphalt or concrete.

Maintaining Bilges

- ✓ Ensure that bilge water is not discharged into any waterway or public drain without proper filtration to separate the oil from the water. Any unfiltered bilge water or oil accumulated by oil/water separators should be treated as waste oil and handled accordingly. Refer to the Waste Containment and Disposal chapter for more information.
- ✓ Require boats to pull out and away from the water to the boat ramp so bilgewater does not drain back into the water.
- ✓ Provide oil/water separators for boaters to purchase and install in their boats. Consider providing land-mounted oil/water separators for boaters to empty their bilges at dockside.
- ✓ Check local regulations to determine whether filtered water can be discharged into the waterway when an oil/water separator is mounted on a vessel.
- ✓ Inspect lines and hoses for deterioration and prevent lines from chafing.
- ✓ Check for oil and fuel leaks into the bilge and fix leaks that contaminate bilgewater.
- ✓ Use absorbent pads to remove as much oil and fuel from bilgewater as possible.

- ✓ Remove pollutants before removing the plug or drain the water ashore into oil/water separators.
- ✓ Clean all water, oil, and foreign materials from the bilge prior to extended boat storage using oil-absorbent materials.
- ✓ Avoid using emulsifying soaps such as dish detergent to clean the bilge. Emulsified oil and water will make oil/water separators unusable. Use products that are either non-emulsifying or that quickly separate into oil and water.
- ✓ Check that bilge contents are disposed of properly before the drain plug is pulled. If a vessel has a through-hull discharge, check bilges to ensure that no oily or industrial water will be discharged to surface waters.
- ✓ Require boaters to keep bilges clean and dry throughout storage.
- ✓ Place absorbents around areas where pollutants can drain into the stormwater system.
- ✓ Educate boaters on the importance of the proper discharge of contaminated bilge.

Winterizing

Antifreeze

- ✓ Use the minimum amount of antifreeze necessary for a job.
- ✓ Use propylene glycol antifreeze for all systems. Do not use ethylene glycol. It is highly toxic and cannot be reliably purged come springtime.
- ✓ Prohibit any "blow out" of antifreeze directly into the water or onto any surface that drains to the water.
- ✓ Provide an antifreeze recapture and recycling service.
- ✓ Collect and recycle antifreeze when boats are put in the water for the first time after being winterized.
- ✓ Dispose of any antifreeze not recycled in a closed loop system on-site as hazardous waste. See the Waste Containment and Disposal chapter for more information.

Gasoline

- ✓ Add stabilizers to fuel to prevent degradation and eliminate the need to dispose of stale fuel in the spring. 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.
- ✓ Fill fuel tanks to 85-90 percent capacity to prevent flammable fumes from accumulating and to minimize the

possibility of corrosion due to condensation. Do not fill the tank more than 90 percent full. Fuel expands as it warms in the springtime and will spill out the vent line of a full inboard tank.

- ✓ Ensure the gas cap seals tightly.

Covers

- ✓ Promote reusable canvas or recyclable plastic covers. Some manufacturers will clean and store canvas covers during the boating season.
- ✓ Recycle used plastic and shrink wrap covers.

Battery Storage and Disposal

Do not burn lead acid batteries or dispose of them in landfills (415 ILCS 5/22.23). See the Waste Containment and Disposal chapter for more information on managing spent batteries.

Boat Disposal

- ✓ Empty fuel tanks and reuse or dispose of used gasoline as hazardous waste.
- ✓ Remove and recycle the following boat parts and fluids:
  - Used oil
  - Used antifreeze
  - Boat engine (recycle as scrap metal)
  - Any metal with recyclable value, such as lead, zinc, aluminum, copper
  - Appliances or HVAC equipment containing refrigerants
- ✓ Remove all mercury-containing devices (some electronic equipment, bilge pump switches, old ship barometers, fluorescent lights) and manage as universal waste. See the Waste Containment and Disposal chapter for more information.
- ✓ Break the hull into smaller pieces as directed by the solid waste facility. The smaller the pieces, the easier it is for the facility to take. Measures should be taken during this process to control fugitive dust. Many marine products contain toxic materials that may become airborne.

In-Water Maintenance

- ✓ Do not allow debris or chemical wastes to fall into the water.
- ✓ Remove the boat from the water if the impacts of in-water cleaning or maintenance activities cannot be contained or mitigated.
- ✓ Keep containers of cleaning and maintenance products closed.

- ✓ Restrict or prohibit sanding on the water.
- ✓ Use vacuum sanders to prevent dust from falling into the water when it is necessary to sand on the water.
- ✓ Do not sand in a heavy breeze.
- ✓ Plug scuppers to contain dust and debris.
- ✓ Restrict or prohibit spray painting on the water.
- ✓ Discourage underwater hull cleaning in your facility. Underwater cleaning is dangerous to divers and the heavy metals released are harmful to aquatic life.

Sanding

- ✓ Conduct sanding in the maintenance area or over a drop cloth.
- ✓ Do not let dust fall onto the ground, flow into the water, or become airborne.
- ✓ Restrict or prohibit sanding on or near the water.
- ✓ Establish a marina policy that prohibits sanding without vacuum equipment.
- ✓ Consider renting or loaning vacuum sanders and grinders to tenants and contractors. These tools collect dust as soon as it is removed from the hull. Vacuum sanders allow workers to sand a hull more quickly than with conventional sanders. Additionally, because paint is collected as it is removed from the hull, health risks to workers are reduced.
- ✓ Use a damp cloth to wipe off small amounts of sanding dust.
- ✓ Collect and dispose of debris as appropriate. If it is non-hazardous and does not contain free liquids, dispose of debris at a municipal landfill or in a dumpster. Refer to the Waste Containment and Disposal chapter for information on how to dispose of debris classified as hazardous waste.

Blasting

- ✓ Prohibit uncontained abrasive blasting at your facility.
- ✓ Perform abrasive blasting in the maintenance area, within a structure, or under a plastic tarp enclosure. Do not allow debris to escape from the enclosure.
- ✓ Avoid blasting on windy days when using tarp enclosures. Because tarps are not rigid, they allow the wind to carry blasting material and residue into surface waters.
- ✓ Consider alternatives to traditional media blasting. Hydroblasting and mechanical peeling essentially eliminate air quality problems, but still require a filter

cloth to collect debris on the ground.

- ✓ 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 then stripped off. When the strips are removed, the paint is lifted from the hull.
- ✓ Invest in a closed, plastic media blast (PMB) system. These systems blast small plastic bits and then vacuum spent material and paint chips into a machine that separates the plastic from the paint dust. The plastic is then cleaned and reused. A 50-foot boat will produce about a gallon of paint dust, substantially less than the many barrels of sand and paint that must be disposed of with traditional media blasting methods.
- ✓ Collect debris and provide for proper disposal. If the waste is hazardous, send it to a permitted hazardous waste disposal facility. See the Waste Containment and Disposal chapter for more information.
- ✓ Recycle used blast media. Investigate companies that recycle used blast media into new media or other products.

Painting Operations

- ✓ Limit in-water painting to small jobs. Any substantial painting should be done in the maintenance area or over a ground cloth.
- ✓ Use brushes and rollers whenever possible.
- ✓ Restrict painting outside of designated shops to the use of rollers and brushers. Ensure that proper tarps and tenting are also used to protect the surrounding area.
- ✓ Transfer the paint to the boat in a small (less than 1 gallon), tightly covered container if painting with a brush and roller on the water. Small containers mean small spills.
- ✓ Mix paints, solvents, and reducers in a designated indoor or covered area far from the shore.
- ✓ Mix only as much paint as is needed for a job.
- ✓ Consider sharing leftover paints with customers or setting up an exchange area for customers to swap unused items.
- ✓ Keep records of paint use. Use the information to prevent over-mixing.

Antifouling Painting

- ✓ Become familiar with state, federal, and local antifouling paint regulations.

- ✓ Maintain a pesticide applicator license if applying anti-fouling paints to boats (415 ILCS 60/1).
- ✓ Recommend antifouling paints that contain the minimal amount of toxic ingredient necessary for the expected conditions to your customers.
- ✓ Stay informed about antifouling products like Teflon, silicone, polyurethane, and wax that have limited negative impacts.
- ✓ Avoid soft ablative paints.
- ✓ Use water-based paints whenever practical.
- ✓ Store boats out of the water, where feasible, to eliminate the need for antifouling paints.
- ✓ Dispose of waste antifouling paints containing pesticides, solvents, or metals such as barium, chromium, cadmium, or lead as hazardous waste. Hazardous waste antifouling paints cannot be mixed with non-hazardous paints for disposal. Refer to the Waste Containment and Disposal chapter for more information on the disposal of hazardous waste.

Spray Painting

- ✓ Consider establishing a marina policy that prohibits customers from spray painting.
- ✓ Prohibit spray painting on the water. Conduct all spray painting on land, in a spray booth, or under a tarp.
- ✓ Minimize the use of spray equipment or use equipment with high transfer efficiency to reduce paint overspray and solvent emissions. Tools such as high-volume, low-pressure (HVLP) spray guns release less paint and volatile organic compounds into the air, use less paint, and are cheaper to clean up. Air atomizer spray guns and gravity feed guns are other types of highly efficient spray equipment.
- ✓ Educate personnel on how to properly operate spray equipment to reduce overspray and minimize the amount of paint per job.

Paint Stripping

- ✓ Consider alternatives to chemical paint stripping, such as using a heat gun, scraping, sanding, or abrasive blasting. The best practice to use depends on the characteristics of the surface being stripped, the type of paint being removed, and the volume and type of waste produced.

- ✓ Use citrus-based or water-based products if paint strippers must be used. These products are less hazardous.
- ✓ Use only the minimum amount of paint stripper needed for a job.
- ✓ Use tight-fitting lids or stoppers to prevent evaporation. Reducing evaporation protects air quality and saves product and money.
- ✓ Store paint strippers on an impervious surface and where they are most used in the designated maintenance area.
- ✓ Train employees to use less paint stripper, to properly store new and used paint strippers, to use wise clean-up procedures, and to prevent leaks and spills.

Educating Boaters

- ✓ Copy the Clean Boater Tip Sheets from this guidebook and distribute them to your boaters. There is room to add the name and logo of your marina to these tip sheets. Applicable Clean Boater Tip Sheets for this section include Engine Maintenance, Hull Maintenance, Spring Start-Up: Antifreeze Collection and Disposal, and Boat Cleaning.
- ✓ Inform all workers and operators of the hazardous nature of chemicals and products used in maintenance activities, as well as the purchasing and recycling costs.
- ✓ Inform your boaters/clients when and where they can take their recyclable materials and any hazardous waste.

References

United States Environmental Protection Agency. 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. Washington, DC: EPA-840-B-92-002

Petroleum Control

Environmental Concerns

Petroleum in or on the water is harmful, flammable, and, in some cases, fatal to aquatic life. Petroleum products typically contain a wide range of volatile organic compounds. Gasoline contains benzene, a carcinogen, and motor oil contains zinc, sulfur, and phosphorus.

Once petroleum is spilled into the water, it may float at the surface, evaporate into the air, become suspended in the water column, or settle to the lake bottom. Floating gasoline is flammable, and 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 uppermost portion of the water column, which contains thousands of aquatic plant, animal, and microbe species.

Laws and Permits

Spill Response and Reporting

The Clean Water Act (33 U.S.C 1321) prohibits discharges of oil or oily waste into or upon navigable waters of the United States that cause a film or sheen upon, or discoloration of, the surface of the water or cause a sludge or emulsion beneath the surface of the water.

In Illinois, all spills must be reported immediately to the Illinois Emergency Management Agency (IEMA) at (800) 782-7860 and to the Local Emergency Planning Committee (LEPC) for the area affected by the release (41 IAC 176.300). Petroleum spills must also be reported to the National Response Center (NRC) at (800) 424-8802. Report the location, source, size, color, substance, and time of the spill. Failure to report a spill may result in substantial fines. In addition, the U.S. Coast Guard must be notified of spills that produce a sheen on the water. For more information, visit www.epa.state.il.us/emergency-response/.

All boats 26 feet or more in length are required to display a placard that is at least 5x8 inches, made of durable material, and fixed in a conspicuous place, such as in the machinery spaces or at the bilge pump control station. The placard must read as shown on the following page:

Environmental Concerns

Laws and Permits
- Spill Response and Reporting
- Oil and Hazardous Substance Liability
- Spill Prevention, Control, and Countermeasure Plans
- Petroleum Use and Storage
- Tier Two Reporting

Best Management Practices for Preventing Spills at the Source
- Install and Protect Petroleum Storage Tanks Properly
- Supervise Fueling
- Install Environmental Controls
- Maintain Fuel Transfer Equipment
- Avoid Waves and Wakes
- Use and Manage Oil-Absorbent Materials
- Minimize Impacts of Spills and Leaks from Machinery
- Offer Spill-Proof Oil Changes
- Provide an Oil/Water Separator
- Educate Boaters

Best Management Practices for Spill Response Planning
- Maintain a Spill Prevention, Control, and Countermeasure (SPCC) Plan
- Make Information Accessible
- Maintain Oil Spill Response Equipment
- Store Oil Spill Response Equipment Wisely
- Comply with Fire Codes
- Maintain Material Safety Data Sheets
- Train Employees
- Follow Spill Procedures

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 any time a spill produces a sheen on the water. Failure to report a spill may result in civil penalties. Report spills to (800) 424-8802.

State law also requires owners and operators of fuel storage tanks to contain and clean up petroleum spills of 25 gallons or less (41 IAC 176.340). The Clean Water Act prohibits the use of soaps or other agents used to dissipate oil on the water or in the bilge without permission from the U.S. Coast Guard. Soaps, emulsifiers, and dispersants cause the petroleum to sink and mix with the sediments, where it may remain for years. Also, the soaps themselves are pollutants. Marinas that use soap or other dispersing agents on the water or in the bilge may be fined up to $25,000 per incident.

Oil and Hazardous Substance Liability

Accountability and penalties of a fuel discharge to waters within federal jurisdictions, including the Great Lakes, are regulated by federal law (33 U.S.C. 1321). Calling the NRC does not designate the reporter as the responsible party for a spill or initiate a penalty. The cause and source of a spill will be investigated by the U.S. Coast Guard. Marinas will not be held accountable for spills that did not originate at their facility. However, failure to report spills to the U.S. Coast Guard may result in civil penalties.

Marinas will be held liable for any oil discharges that come from their facility (33 U.S.C. 2101-2720). Boaters are also responsible for any spills originating from their boat. The financial liability for all non-tank vessels is $600 per gross ton or $500,000, whichever is greater.

Spill Prevention, Control, and Countermeasure (SPCC) Plans

The U.S. Environmental Protection Agency's (EPA) oil pollution prevention regulation (40 CFR 112.3) requires that marinas prepare and implement a plan to prevent any discharge of oil into navigable waters or adjoining shorelines if the facility has an aggregate aboveground storage capacity greater than 1,320 gallons or an underground storage capacity greater than 42,000 gallons.

Oil is defined in the SPCC regulations as "oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil and oily mixtures."

Petroleum Use and Storage

It is illegal under 41 IAC 175.250 for boaters to fuel their own ves-

sels at a marina. Marinas must ensure that an attendant is always available to fuel vessels for customers. This rule also requires that emergency shutoff switches be installed at each fueling facility in case of fire or physical damage.

Marinas are required to follow additional rules governing the handling and storage of petroleum, particularly the installation and operation of aboveground and underground storage tanks. General storage laws are listed under 41 IAC 160. For more information about underground tank regulations, contact the Office of the State Fire Marshal (OSFM) Division of Petroleum and Chemical Safety at (217) 785-1020. Questions regarding aboveground tanks should be directed to OSFM Division of Fire Prevention at (217) 785-4714.

Tier Two Reporting

The Emergency Planning and Community Right-to-Know Act (EPCRA) requires that marinas with 10,000 pounds or more of hazardous materials, including petroleum (approximately 1,250 gallons), file Tier Two forms with emergency response agencies by March 1 of each year (42 U.S.C.11004-11049). The form must be submitted to IEMA, your LEPC, and your local fire department. Marinas are not included in the retail gas exemption, which only applies to motor vehicles on land. Forms and contact information for LEPCs are available from IEMA at www.state.il.us/iema/disaster/serc_tier2.htm.

Best Management Practices for Preventing Spills at the Source

Install and Maintain Petroleum Storage Tanks Properly

Because fuel storage tanks at marinas typically hold from 1,000 to 10,000 gallons of fuel, the consequences could be devastating if a tank were to rupture. Even if the tank system leaks or drips, the impact to the environment can be significant and expensive to remediate.

- ✓ Register storage tanks with OSFM (41 IAC 176.440) and display your registration placard (430 ILCS 15/3.5).
- ✓ Hire a certified installer to install underground storage tanks (USTs). Certified personnel are also needed to repair and close tanks.
- ✓ Locate aboveground storage tanks (ASTs) at least 10 feet from the ordinary high water mark of a navigable body of water or have appropriate anchoring to prevent tank flotation (41 IAC 160.50).
- ✓ Allow space between stored boats and ASTs.
- ✓ Consider covering ASTs with a roof made of noncombustible material to prevent rainwater from

filling the containment area or providing a way to pump out any accumulated oil/water mix. Ensure that the tank is still properly vented if you build a roof.

- ✓ Position single-walled ASTs within a dike or over an impervious storage area with the same capacity as the largest storage tank. Double-walled tanks over land do not need a dike.
- ✓ Consult with municipality officials about additional siting requirements.
- ✓ Consider measuring inventory every operating day. Record the amount of fuel dispensed and the amount remaining in the tank.
- ✓ Take a daily reading of the amount of fuel delivered and pumped.
- ✓ Inspect ASTs and piping regularly for drips or leaks and check for leaks in USTs every 30 days (41 IAC 175.650).
- ✓ Ensure marina personnel who work with the tanks receive operator training (41 IAC 176.625). Visit www.sfm.illinois.gov/commercial/ust/operatortraining.aspx for information on the three classes of operator training.
- ✓ Maintain UST operator training records on-site (41 IAC 176.645).
- ✓ Maintain a current green sticker from OSFM (41 IAC 177.115).
- ✓ Keep inspection records indicating compliance with UST requirements (41 IAC 176.430).

Supervise Fueling

- ✓ Ensure that there is a trained employee at the fuel dock to conduct fueling. Self-service at marinas is prohibited in Illinois (41 IAC 175.250).
- ✓ Post signs that read "No dispensing by anyone other than the attendant" on or near fuel dispensers (41 IAC 175.250).
- ✓ Train employees (41 IAC 175.210) to:
  - Maintain nozzle contact with the fill pipe to prevent static spark.
  - Use a slow filling rate at the beginning and end of fueling.
  - Listen to filler pipes to anticipate when tanks are nearly full and stop when tanks are filled to 90 percent capacity.

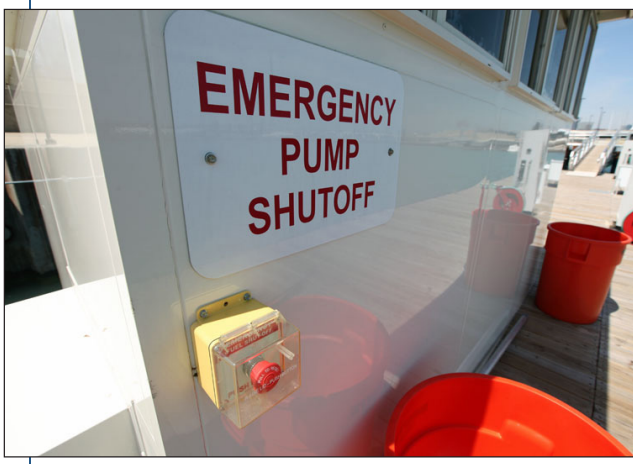
- Leave expansion space in fuel tanks of boats going into storage.
- Avoid topping off to prevent fuel discharges to the water.
- Ensure fuel does not accidently flow into the holding or water tank.
- Attach a container to the external vent fitting to collect overflow. There are products on the market that may be attached to the hull with suction cups. A rubber seal on the container fits over the fuel vent, allowing the overflow to enter the container. Fuel captured in this manner can be used to fuel the next boat.
- Use oil absorbent pads to capture backsplash and vent line overflow.
- Place small gas cans in drip pans when filling.

✓ Require all passengers to disembark from gasoline-powered vessels before fueling.

✓ Require boaters to stay with their craft during fueling.

✓ Instruct boaters to:
- Stop all engines and auxiliaries
- Shut off all electricity, open flames, and heat sources
- Extinguish all cigarettes, cigars, and pipes
- Close all doors, hatches, and ports
- Inspect the bilge after fueling for leakage or fuel odors
- Turn on bilge blowers for several minutes before starting the engine and ventilate until odors are gone

✓ Encourage boaters to keep their engines well-tuned. Properly maintained engines use fuel and oil more efficiently and are less likely to leak or emit oil and vapor emissions into the environment.



Install Environmental Controls

✓ Install emergency shutoff switches at each fueling facility at your marina in case of fire or physical damage (41 IAC 175.20). Inspect and test emergency shutoff switches annually.

✓ Install automatic back pressure shut-off nozzles on fuel pump discharge hoses to automatically stop the flow of fuel into a fuel tank when sufficient reverse pressure is created (41 IAC 175.405).

✓ Consider installing fuel nozzles that redirect blow-back into fuel tanks or vapor control nozzles to capture fumes.

✓ Remove fuel nozzle holding clips. The use of holding clips to keep fuel nozzles open is illegal at marina fuel docks (41 IAC 175.460).

- ✓ Offer to install fuel/air separators on boats.
- ✓ Ask your fuel company representative to set the delivery rate based on the size of the boats at your marina. Problems with backsplash and vent-line overflow are often due to high-pressure flow from the pump.

Maintain Fuel Transfer Equipment

- ✓ Inspect transfer equipment regularly for frayed fabric or other damage that may lead to leaks and immediately fix all leaks.
- ✓ Reel, rack, or otherwise protect fuel hoses longer than 18 feet from damage (41 IAC 175.460).
- ✓ Ensure good connections can be made with the delivery nozzles on fuel delivery trucks.
- ✓ Hang nozzles vertically when not in use so that fuel remaining in hoses does not drain out.

Avoid Waves and Wakes

Spillage around fueling areas is often caused by unanticipated movement of the boat or dock.

- ✓ Locate fuel docks in areas protected from wave action and boat wakes when constructing new or upgrading existing facilities. For safety reasons, all fueling stations should be accessible by boat without having to enter or pass through the main berthing area.
- ✓ Consider placing the personal watercraft fueling area at the end of the fuel pier to reduce conflict with larger boats.
- ✓ Provide a stable platform for fueling personal watercrafts. Consider purchasing prefabricated drive-on docks or modify an existing dock by cutting a v-shaped berth and covering it with outdoor carpeting.

Use and Manage Oil-Absorbent Materials

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

- ✓ Require tenants to use oil-absorbent materials as part of your lease agreement.
- ✓ Ensure absorbent materials and collection devices are readily available at the fuel dock and for bilges.
- ✓ Distribute pads, pillows, or booms to your customers.

- ✓ Make bilge pillows available to boaters to remove oil from bilge water.
- ✓ Place plastic or nonferrous drip trays lined with oil-absorbent material beneath fuel connections at the dock to prevent fuel leakage from reaching the water.
- ✓ Post instructions at the fuel dock directing staff and patrons to clean up spilled fuel from the dock and water immediately with oil-absorbent materials.
- ✓ Secure oil-absorbent materials at the waterline of fuel docks to quickly capture small spills. Look for oil-absorbent booms that are sturdy enough to stand up to regular contact with the dock and boats.
- ✓ Store used absorbents in covered fireproof containers to prevent evaporation.
- ✓ Dispose of used oil-absorbent materials as appropriate for the product and how it was used (415 ILCS 5). Visit www.epa.state.il.us/small-business/used-rags/index.html for more information.
  - Standard absorbents saturated with oil or diesel only (no gasoline) may be wrung out over oil recycling bins and reused.
  - Bioremediating bilge booms may be discarded in the trash as long as they are not dripping any liquid. Because the microbes need oxygen to function, do not seal them in plastic bags.
  - Small pads used to clean up minor drips at the fuel pump may be allowed to air dry and be reused.
  - Standard absorbents saturated with gasoline should be disposed of as hazardous waste.
- ✓ Call your municipal solid waste department or the Illinois Environmental Protection Agency (IEPA) Bureau of Land for locations to recycle used oil collected by absorbent materials. There are long term collection sites in Naperville, Rockford, Chicago, and Lake County. Service stations and retail outlets may also accept used motor oil for reuse and recycling.

Minimize Impacts of Spills and Leaks from Machinery

- ✓ Use non-water-soluble grease on Travelifts, fork lifts, cranes, and winches.
- ✓ Place containment berms around fixed pieces of machinery that use oil and gas. Berms should be able to contain volumes equal to 1.1 times the capacity of the machinery's fuel tank.
- ✓ Design containment areas with spigots to drain collected materials.

- ✓ Cover machinery with a roof if possible to prevent rainwater from filling the containment area.
- ✓ Park machinery on an impervious pad.
- ✓ Place oil-absorbent pads under machinery.
- ✓ Position leak-proof drip pans beneath machinery and empty the pans regularly.
- ✓ Dispose of all collected materials appropriately. Refer to the Waste Containment and Disposal chapter for more information.

Offer Spill-Proof Oil Changes

- ✓ Encourage the use of spill-proof oil change equipment as a condition of your slip rental agreement.
- ✓ Purchase a non-spill pump 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.
- ✓ Slip a plastic bag over used oil filters prior to their removal to capture any drips.
- ✓ Hot drain filters by punching a hole in the dome end and draining for 24 hours.
- ✓ Purchase or rent an oil filter crusher. This device will crush the filter to approximately one-fifth its original size, removing the majority of excess oil for recycling. Crushing filters also makes it possible to place five times more crushed filters in a disposal drum.
- ✓ Recycle the metal filter canister and any oil collected. Call your municipal solid waste department or the IEPA Bureau of Land for more information.

Provide an Oil/Water Separator

- ✓ Invest in a portable or stationary oil/water separator to draw contaminated water from bilges, capture hydrocarbons in a filter, and discharge clean water.
- ✓ Subcontract bilge cleaning services at your facility.

Educate Boaters

- ✓ Photocopy the Fuel and Oil Control tip sheet from the back of this guidebook and distribute it to your customers. There is room to add your marina's name and logo.

Best Management Practices for Spill Response Planning

Maintain a Spill Prevention, Control, and Countermeasure (SPCC) Plan

Use Appendix I as a guide for creating your SPCC plan.

- ✓ Develop an SPCC plan (40 CFR 112.3) that addresses:
  - Operating procedures implemented by the facility to prevent oil spills
  - Control measures installed to prevent a spill from entering navigable waters or adjoining shorelines
  - Countermeasures to contain, clean up, and mitigate the effects of an oil spill that affects navigable waters or adjoining shorelines
- ✓ Certify your plan. In some cases, an SPCC plan must be certified by a professional engineer. Visit www.epa.gov/osweroe1/content/spcc/ to view up-to-date rules and criteria.
- ✓ Keep your SPCC plan on-site for EPA review.
- ✓ Submit a copy of your plan to EPA Region 5 if a single spill of greater than 1,000 gallons occurs or if two discharges of 42 gallons or more occur within one year. For more information call (312) 886-7187.
- ✓ Ensure your SPCC plan is reviewed by the marina owner or manager at least every five years (40 CFR 112.5).
- ✓ Store review records at the beginning of the plan. Records should include the reviewer's signature, the date signed, and a list of any changes.
- ✓ Amend your SPCC plan for major changes, such as new tank installations or removals. Amendments must be signed by an engineer.

Make Information Accessible

- ✓ Keep copies of all emergency response plans in a readily accessible location. See the Safety and Emergency Preparedness chapter for more information on developing emergency response plans.
- ✓ Place a copy of the SPCC plan in the oil spill response kit.
- ✓ Post emergency contact numbers in various places at your marina to ensure proper notification of a spill.

Maintain Oil Spill Response Equipment

- ✓ Maintain enough oil spill response equipment to contain the greatest potential spill at your facility (29 CFR

1910.106).

- ✓ Ensure your marina has enough booms to encircle the largest boat in your facility. Booms should be three times the length of the vessel.

Store Oil Spill Response Equipment Wisely

- ✓ Store response equipment and booms in fuel-receiving and fuel-dispensing areas (29 CFR 1910.106).
- ✓ Mark the storage site with a sign reading "Oil Spill Response Kit."
- ✓ Store materials in an enclosed container or bin accessible to all staff, especially those who handle fueling operations.
- ✓ Consider leaving the storage container unlocked so that it is available to patrons as well as staff. If leaving the bin unlocked at all times is not feasible, try leaving it unlocked just on weekends and holidays, when both activity and risk are greatest.
- ✓ Check the inventory regularly if the bin is left unlocked.
- ✓ Include instructions in the kit for deploying pads and booms and a notification that all spills must be reported to the NRC at (800) 424-8802 and IEMA at (800) 782-7860 (41 IAC 176.340).

Comply with Fire Codes

- ✓ Meet the National Fire Protection Association standards for marinas. Refer to the Safety and Emergency Preparedness chapter for more information.
- ✓ Schedule annual fire inspections to ensure compliance with all applicable fire codes.
- ✓ Maintain fire inspection records (41 IAC 176.430).

Maintain Material Safety Data Sheets

- ✓ Keep a file of material safety data sheets (MSDSs) for all products used at your facility (29 U.S.C. 657).
- ✓ Ensure MSDSs are readily accessible to employees who use the chemicals, materials, or products.
- ✓ Inform employees that MSDSs cannot be used during an emergency to determine the presence or quantities of materials onsite.
- ✓ Notify your LEPC of the materials you store and what is released when they burn.

- ✓ Submit Tier II forms to IEMA, your LEPC, and the local fire department annually if you have an MSDS for any hazardous chemical. Visit www.state.il.us/iema/disaster/serc_tier2.htm for additional information.

Train Employees

- ✓ Review plans and response procedures with staff at the beginning of each boating season.
- ✓ Train employees on containment measures (41 IAC 175.210).
- ✓ Remind employees that using detergents to dissipate fuel spills on the water is prohibited (33 CFR 153.305).
- ✓ Run emergency response drills at least twice a year.
- ✓ Invite the U.S. Coast Guard and local fire department to demonstrate emergency response procedures at your marina.

Follow Spill Procedures

- ✓ When oil, gas, or diesel is spilled on the water:
  - Protect yourself and others.
  - Identify the spilled material and determine how much has spilled, if possible. This information will help you assess the risks to human health, the environment, and property.
  - Confine the oil or diesel spill using absorbents in your spill kit. If a spill happens on land, confine it before it can spread to the water. Do not try to confine gasoline spills. Due to the risk of explosive fumes or fires, gas spills should be allowed to dissipate and vaporize from the water surface.
  - Stop the source.
  - Contact authorities. Call the NRC at (800) 424-8802 and IEMA at (800) 782-7860.
  - Clean up the remaining oil, gas, or diesel.
  - Remove or neutralize any hazardous materials that have accumulated during the spill to decontaminate the site and equipment.

Sewage Handling

Environmental Concerns

Pollutants tend to concentrate within the sheltered environment of marina basins, making the illegal discharge of untreated sewage from boats a water quality and public health concern. The nutrients found in sewage can result in excessive algae and underwater plant growth within the marina basin. In severe cases, the decomposition of raw sewage may result in a large die-off of fish, known as fish kills. As the sewage is broken down by bacteria, the bacteria consume oxygen from the water—the same oxygen required for the survival of the fish. Additionally, raw sewage contains disease-causing bacteria and viruses that are a threat to swimmers and others coming into direct contact with the water. Every year there are a number of beach closures in Illinois due to elevated *E. coli* bacteria levels, which is an indicator of sewage contamination.

Boats release relatively small amounts of sewage compared to municipal sewer overflows. However, the concentration of the sewage from boats can be much higher because marine toilets use little or no water.

Laws and Permits

Marine Sanitation Devices

The Federal Clean Water Act (33 U.S.C. 1322) requires that all vessels with installed toilets have a U.S. Coast Guard-certified marine sanitation device (MSD). Type I and II MSDs are used to pretreat boat sewage before it is discharged. Type I systems mechanically cut solids and disinfect waste, and Type II systems treat sewage to a higher standard and generally require more space and energy to run. Both Type I and II MSDs must have a secured Y-valve to allow waste to enter an on-board holding tank for future drainage at a pump-out station. Type III MSDs are holding tanks and do not discharge sewage. Type III MSDs must be pumped out ashore at a proper facility and cannot be discharged overboard.

Portable toilets are not considered installed toilets. As a result, MSD requirements do not apply to vessels with portable toilets. Portable toilets should be properly emptied on shore. It is illegal to discharge sewage into state waterways (625 ILCS 45/4-9). Most pump-out facilities have wand attachments to empty portable toilets, and some marinas have portable toilet dump stations.

Pump-Out Stations and Restrooms

Any marina where boats equipped with toilets are allowed to

Environmental Concerns

Laws and Permits

- Marine Sanitation Devices
- Pump-Out Stations and Restrooms

Best Management Practices for Handling Sewage

- Prohibit Discharge at the Slip or Mooring
- Offer MSD Inspections
- Install a Pump-Out System
- Provide Shoreside Restrooms
- Provide Facilities for Live-Aboards
- Maintain Septic Systems
- Handle Graywater Properly
- Manage Pet Waste and Wildlife
- Educate Boaters

References

dock in recreational areas must provide pump-out stations. Marinas are also required to provide both male and female restrooms if boaters are allowed to sleep overnight while at dock (77 IAC 800.1300).

Best Management Practices for Handling Sewage

Prohibit Discharge at the Slip or Mooring

Effluent from Type I and Type II systems contains nutrients and potentially toxic chemicals, and probably pathogens. Discharges from Type I and Type II systems in crowded, enclosed areas such as marinas pose a threat to human health and water quality.

- ✓ Prohibit discharge of sewage in your marina as a condition of your lease agreement (625 ILCS 45/4-9). State that failure to comply with MSD laws and marina policy will result in expulsion from the marina and forfeiture of fees.
- ✓ Include information about MSD requirements and sewage laws in contracts for slips, rentals, transients, and live-aboards.
- ✓ Follow these procedures if a customer fails to observe the law or honor your contract:
  - Discuss the matter with him or her.
  - Mail a written notice asking that the offending practice stop immediately and keep a copy for your records.
  - Evict the boater.
- ✓ Report any illegal discharge of raw sewage to the Illinois Department of Natural Resources (IDNR). Provide as much information as possible—name of the owner, vessel, location, etc.
- ✓ Require boaters to keep Y-valves on head discharge lines closed and locked to prevent illegal discharge.
- ✓ Discourage the discharge of graywater in your marina as a condition of your lease agreements. See the Handle Graywater Properly section later in this chapter for more information.
- ✓ Post signs prohibiting the discharge of head waste, discouraging the discharge of graywater, and directing people to use shoreside restrooms and dishwashing areas.

Offer MSD Inspections

- ✓ Offer to inspect boaters' MSDs annually to ensure that their Y-valves are secured.
- ✓ Encourage boaters to run dye tablets through their Type I

and 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.

Install a Pump-Out System

Contact IDNR at (217) 782-2602 for information about receiving up to $12,500 in grant funding to install a pump-out system. Any public or private marina is eligible for Clean Vessel Act (CVA) Program grants, which can be used for the construction, renovation, operation, and maintenance of pump-out and dump stations.

- ✓ Install pump-out facilities and dump stations meet the marina's needs. Ask the manufacturer for a written assurance that their system will operate effectively within the specific conditions at your marina. There are three types of onshore sewage collection systems:
  - Fixed-point systems are stationary systems that require boats to move to the pump-out station.
  - Portable systems can be used wherever a boat is located when it needs service. These are good for smaller marinas, especially those that offer limited maneuverability within the marina. However, these systems require more hands-on cleaning and still require marinas to have a fixed system where portable systems can be pumped out.
  - Dedicated slip-side systems provide continuous wastewater collection at select slips within a marina. These systems are good for serving live-aboard vessels.
- ✓ Locate fixed-point systems at a central location and where they can be easily accessed by boats.
- ✓ Provide portable toilet dump stations near small boat slips and boat ramps.
- ✓ Ensure that boats using pump-out systems do not prevent another boat from fueling.
- ✓ Avoid installing a pump-out system where stormwater runoff can come in contact with equipment.
- ✓ Post signs with information about the use and cost of the pump-out station, hours of operation, and where to call for service if the system is out of order. Be careful how signs are worded to avoid confusion between sewage pump-out, bilge pump-out, and fuel pump stations. "Sewage Pump-Out" or "Sewage Dump Station" are recommended identifiers.
- ✓ Ensure signs are visible from the channel so that passing boats are aware of the facility.

- ✓ Make sure public sewage pump-out stations are identified in maps, boating publications, and other boating resources for your marina.
- ✓ Consider having an attendant operate the pump-out. Install a buzzer or paging system so boaters at the pump-out station can easily locate the attendant.
- ✓ Train employees to take precautions to avoid coming into direct contact with sewage. Require that employees wear rubber gloves during pumping and respirators when maintaining or repairing MSDs.
- ✓ Decide whether to charge a fee and whether live-aboards will be charged as well. No more than $5 may be charged if CVA grant funds were accepted for the purchase or installation of the system. Make arrangements to collect a fee from unattended stations.
- ✓ Consider providing a free pump-out with a fuel fill-up.
- ✓ Keep the pump running until it has been rinsed with clean water. Do not allow rinse water or residual waste in the hoses to drain into receiving waters.
- ✓ Dispose of collected waste by connecting directly to the public sewer line. If a sewer line is not available in your area, you will need a holding tank. Holding tank size and location is generally determined by the local health department.
- ✓ Pump out holding tanks periodically and transport the contents to a treatment plant.
- ✓ Inspect the system regularly and keep a log of your observations.
- ✓ Test the efficiency of the pump weekly during the boating season by measuring the length of time required for the system to empty a 5-gallon bucket of water.
- ✓ Keep a variety of nozzles in stock to replace broken ones.
- ✓ Establish a maintenance agreement with a contractor qualified to service and repair pump-out facilities.
- ✓ Contact the pump-out manufacturer for specific maintenance and winterization recommendations.

Provide Shoreside Restrooms

- ✓ Provide clean, functional restrooms to encourage people not to use their heads while in port.
- ✓ Make restrooms available 24 hours a day.

- ✓ Ensure that the dock and route to the restrooms are well lit at night.
- ✓ Install a security system on restroom doors so people will feel safe, particularly at night.
- ✓ Provide air conditioning and heating in the restrooms.

Provide Facilities for Live-Aboards

- ✓ Require that live-aboards place dye tablets in holding tanks to make any discharge clearly visible as a condition of the lease agreement.
- ✓ Reserve slips closest to shoreside restrooms for live-aboards.
- ✓ Provide a portable pump-out system or require that live-aboards contract with a mobile pump-out service.
- ✓ Consider installing direct sewer hookups for live-aboards. Keep in mind that most live-aboards expect and are willing to pay a premium for extra service and more convenient slips.
- ✓ Offer to demonstrate the proper way to secure the Y-valve.

Maintain Septic Systems

- ✓ Watch for signs of septic failure, such as wet areas, standing water above the drain field, toilets that run slowly or back up, and odor. Septic failures can contaminate drinking water and threaten public health.
- ✓ Post signs in the restrooms requesting that patrons not place paper towels, tissues, cigarette butts, disposable diapers, sanitary napkins, or tampons in the toilet. These items can clog the septic system.
- ✓ Provide adequate covered disposal for items that cannot be flushed down the toilet.
- ✓ Post signs in the laundry room requesting that patrons use minimal amounts of detergents and bleaches.
- ✓ Prohibit personnel and customers from dumping pesticides, solvents, and other harsh chemicals, fats, and oils down the drain.
- ✓ Post signs explaining what materials cannot be poured down the drain.
- ✓ Use small amounts of drain cleaners, household cleaners, and other products that can damage the system.
- ✓ Do not use septic system additives, such as “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.

- ✓ Hire a licensed professional to pump the septic tank every 2-3 years.
- ✓ Direct downspouts and runoff away from the septic field to avoid saturating the area with excess water. Be careful not to direct the flow or runoff toward paved areas.
- ✓ Prohibit driving on or parking over the infiltration area to prevent soil from being compacted.

Handle Graywater Properly

Graywater is wastewater from the sink and shower that may contain detergents, soap, other chemicals, and food wastes. When it is released into the environment, it can pollute water, promote algae growth, and reduce oxygen levels as bacteria break down wastes and algae.

- ✓ Encourage boaters to use the showers and restrooms provided by the marina when docked.
- ✓ Discourage boaters from using dish soaps to clean dishes on board their boats. Recommend environmentally-friendly soaps in moderation when soap is necessary for hard-to-clean jobs.
- ✓ Sell only low-phosphorus detergents and biodegradable soaps and shampoos in your store.
- ✓ Consider providing shoreside dishwashing and coin-operated laundry facilities for boaters and encourage their use.
- ✓ Educate boaters about the effects of graywater and the steps they can take to help reduce them.

Manage Pet Waste and Wildlife

- ✓ Provide a grassy area away from the shoreline and storm drains for pets to be taken for walks.
- ✓ Install fences and provide park benches to encourage owners to use the space.
- ✓ Require owners to clean up after their pets.
- ✓ Provide a supply of pet waste cleanup bags and a refuse container with a lid on it.
- ✓ Educate your patrons about the problems posed by pet waste.
- ✓ Prohibit personnel and customers from feeding wild birds,

including ducks, geese, and seagulls. This encourages birds to flock to the marina, where their waste can contaminate water and create a mess on boats and walkways.

- ✓ Control wild bird populations if they become established at your marina. For information on reduction measures, visit icwdm.org. Some options include:
  - Fencing to restrict access to water and grazing areas
  - Chemical repellents
  - Scare devices (both visual and sound)
  - Habitat alterations
  - Reproductive control (requires permits)
  - Trained border collies

Educate Boaters

As the generators and conveyors of sewage, boaters need to be educated about the effects of sewage and its proper disposal.

- ✓ Photocopy the Wastewater Containment and Disposal tip sheet from the back of this manual and distribute it to your customers.
- ✓ Encourage boaters to maintain their MSDs properly and to purchase environmentally-friendly treatment products for their heads and holding tanks
- ✓ Post signs directing boaters to the closest public pump-out if you do not have a pump-out system.

References

Miller, Thomas H. and Paula A. Eubanks. 1993. Septic Records and Maintenance Guidelines. College Park, MD: University of Maryland Cooperative Extension Service.

Waste Containment and Disposal

Environmental Concerns

All marinas generate some waste that could threaten human health, be hazardous to aquatic and terrestrial wildlife, and be costly to coastal communities.

Solid waste, particularly plastics, must be well managed. Plastics can trap or choke aquatic animals, become entangled in propellers, and clog engine intake systems. Divers are likewise vulnerable to entanglement. Solid waste that washes up on shore is also unattractive and may be costly to remove.

Hazardous waste—materials that are corrosive, reactive, toxic, or ignitable—generated at marinas also pose a significant threat to public and environmental health. Proper storage, disposal, and recycling of these materials reduce the threat of harmful chemicals. In fact, most hazardous wastes can be recycled into new, safe products.

Laws and Permits

Pollution Prevention

Federal law (33 U.S.C. 407) bans the disposal of any waste into the waters of the United States. Under this law, marina operators are also prohibited from allowing personnel or customers to throw any trash, garbage, oil, or other liquid pollutant into the water. In addition, the Marine Plastic Pollution Research and Control Act (33 U.S.C. 1914-1915) restricts the overboard discharge of garbage and makes it is illegal to dump plastic, paper, rags, glass, metal, crockery, dunnage (lining and packing material, nets, lines, etc.), and food into any lake, river, and bay. Marinas must provide adequate and convenient receptacles for their customers, including transients. The act also requires that all boats over 40 feet have a written waste management plan on board.

Waste Management

The federal Resource Conservation and Recovery Act (42 U.S.C. 6921-6939) establishes standards for handling, transporting, and disposing of materials that are ignitable, corrosive, reactive, or toxic. Facilities that generate these materials, known as hazardous waste, are categorized according to the quantity of waste generated on-site. Some requirements laid out in this law apply to all hazardous waste generators, but most are specific to the amount of waste being generated. Similar procedures are required under state laws governing the management of hazardous waste, universal waste, and used oil in the state of Illinois (35 IAC 700-871).

Environmental Concerns

Laws and Permits
- Pollution Prevention
- Waste Management
- Hazardous Material Notification
- Hazardous Waste Contingency Plans
- Recycling

Best Management Practices for Waste Containment and Disposal
- Reduce Waste
- Minimize Use of Hazardous Products
- Manage Hazardous Waste
- Manage Universal Waste
- Manage Used Oil
- Manage Waste from Boat Owners
- Track Pollution Incidents
- Manage Fish Waste
- Manage Pet Waste
- Manage Trash
- Recycle
- Educate Boaters

Table of Recommended Disposal Methods

Pollution Report and Action Log

Marinas must apply for an Environmental Protection Agency (EPA) identification number before transporting their own hazardous waste (17 IAC 722.112). An identification number is also needed if the facility accepting your waste or the waste hauler requires a Uniform Hazardous Waste Manifest, which allows state and federal agencies to track waste shipments. A Special Waste Hauling Permit is required to haul any hazardous waste, industrial process waste, or pollution control waste. For additional information and forms, visit www.epa.state.il.us/land/regulatory-programs/transportation-permits/index.html.

Hazardous Material Notification

Under the Emergency Planning and Community Right-to-Know Act (40 CFR 355), marinas with "extremely hazardous substances" stored on-site must complete an Emergency Planning Notification Form. The form must be submitted to the Illinois Emergency Management Agency (IEMA) and the marina's Local Emergency Planning Commission within 60 days of receiving the chemical. For a list of these chemicals, visit ehs.uark.edu/DocumentPages/ExtremelyHazardousChemicals.pdf. Marinas do not have to report sulfuric acid from lead acid batteries on customer boats. Contact the Emergency Planning and Community Right-to-Know Information Hotline at (800) 424-9346 for more information.

Hazardous Waste Contingency Plans

EPA regulation (40 CFR 262.34) requires large quantity generators of hazardous waste to have a written contingency plan that includes emergency procedures in the event of a fire, explosion, spill, or other emergency. The plan must include the names, addresses, and telephone numbers of everyone qualified to act as emergency coordinator, a description of all emergency equipment and their locations onsite, and a facility evacuation plan. The plan must also describe the arrangements a marina has made with local emergency authorities to coordinate emergency services.

Recycling

The Illinois Environmental Protection Act (415 ILCS 5) prohibits the disposal of certain materials in state landfills or incineration facilities. Materials include major appliances, lead acid batteries, yard waste, waste oil, and electronic waste. Local jurisdictions are also required to implement recycling programs to ensure proper recycling of these materials. Visit www.epa.state.il.us/land/waste-mgmt/facility-tables/index.html for a list of approved recycling facilities.

Best Management Practices for Waste Containment and Disposal

Reduce Waste

- ✓ Avoid having leftover materials by sizing up a job,

evaluating what your actual needs are, and buying just enough products for the job. Encourage boaters to do the same.

- ✓ Minimize office waste by making double-sided copies, using scrap paper for notes and messages, purchasing recycled office paper, and reusing polystyrene peanuts or giving them to small-scale packing and shipping companies that will reuse them.
- ✓ Request alternative packing material, such as paper, potato-starch peanuts, and popcorn, from vendors.
- ✓ Discourage the use of non-biodegradable products, such as plastic and Styrofoam cups, food containers, utensils, and bags.
- ✓ Encourage boaters to share excess paints, thinners, and varnishes. Provide a bulletin board where boaters can post notices.
- ✓ Post the names of local organizations willing to accept excess non-toxic paints, such as schools and theater groups.

Minimize Use of Hazardous Products

By minimizing your use of hazardous products, you can reduce health and safety risks, lower disposal costs, decrease liability, and reduce the need for costly clean-up of inappropriately disposed material.

- ✓ Avoid using products that are corrosive, reactive, toxic, or ignitable whenever possible. The use of these materials is likely to generate hazardous waste.
- ✓ Purchase hazardous materials in quantities that you can quickly use.
- ✓ Do not store large amounts of hazardous materials.
- ✓ Establish a "first-in, first-out" policy to reduce storage time.
- ✓ Design and implement an inventory-control plan to minimize the amount of hazardous material you purchase, store, and discard.
- ✓ Dispose of excess material every 6 months.

Manage Hazardous Waste

Requirements for handling hazardous waste differ depending on how much is generated on-site. These regulations can be found at www.ipcb.state.il.us/documents/dsweb/Get/Document-13838. To determine the requirements that apply to you, first determine

the amount of hazardous waste that is generated on a monthly basis. Visit www.epa.state.il.us/land/hazardous-waste for more information.

All Generators

- ✓ Determine if waste generated by your operations are hazardous. Visit www.ipcb.state.il.us/documents/dsweb/Get/Document-30295/ for a list of hazardous wastes and information on how to identify them.
- ✓ Include information about the prohibition on dumping hazardous waste in water in your slip agreements and service provider contracts.
- ✓ Store hazardous waste in containers that meet U.S. Department of Transportation standards (49 CFR 178). Approved containers will carry specification markings, such as DOT 4B24ET, in an unobstructed area. Small quantities of solvents may be stored in the containers they were purchased in.
- ✓ Separate hazardous chemicals by class. Contact the Illinois Environmental Protection Agency (IEPA) to determine the classification for chemicals you have on-site.
- ✓ Clearly label each hazardous waste container.
- ✓ Keep storage containers closed unless waste is being added or removed.
- ✓ Store containers on pallets in an area where leaks can be contained.
- ✓ Keep the storage area neat.
- ✓ Ensure that there is enough aisle space between containers for inspections and to clean up spills or leaks.
- ✓ Cap solvents and paint thinners whenever they are not in use to reduce air pollution.
- ✓ Store rags or paper saturated with solvents in tightly closed, clearly labeled containers.
- ✓ Inspect containers weekly for corrosion or leaks.
- ✓ Train employees in the proper management of hazardous waste to ensure compliance with state regulations.
- ✓ 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.
- ✓ Encourage boaters to contact marina staff to handle hazardous waste.

- ✓ Call your local fire official to schedule a basic fire inspection. The inspection will determine whether you meet state fire codes, including hazardous material storage requirements.

Very-Small-Quantity Generators

Very-small-quantity generators produce fewer than 100 kilograms (220 pounds or 30 gallons) of hazardous waste per month and are allowed to store up to 1,000 kilograms at any time.

- ✓ Treat or dispose of waste in an on-site facility or deliver it to an approved hazardous waste treatment, storage, or disposal facility. Very-small-quantity generators can also self-transport waste to a household hazardous waste collection facility.
- ✓ Obtain an EPA identification number only if you self-transport waste or if the waste hauler or disposal facility requires a manifest (17 IAC 722.112). For application instructions and permit forms, visit www.epa.gov/epawaste/inforesources/data/form8700/8700-12.pdf.

Small-Quantity Generators

Small-quantity generators produce 100 to 1,000 kilograms of hazardous waste during any calendar month.

- ✓ Install a secondary containment system that prevents waste from entering the soil or water (35 IAC 724.293).
- ✓ Mark the date accumulation begins on each container.
- ✓ Check the date of materials routinely to prevent them from outlasting their shelf life.
- ✓ Obtain an EPA identification number (17 IAC 722.112). For application instructions and permit forms, visit www.epa.gov/epawaste/inforesources/data/form8700/8700-12.pdf.
- ✓ Ship hazardous waste to an approved hazardous waste treatment, storage, or disposal facility within 180 days of generation and before you accumulate 6,000 kilograms (13,230 pounds). If the waste must be shipped 200 miles or more, it can accumulate for up to 270 days.
- ✓ Contract with a state-licensed transporter to ship waste.
- ✓ Prepare a Uniform Hazardous Waste Manifest for every shipment. Visit www.epa.state.il.us/land/regulatory-programs/permits-and-management/forms/manifest-request-form.pdf to access the manifest request form.
- ✓ Submit an annual report to IEPA summarizing

hazardous waste activities during the previous year.

- ✓ Keep all records, including manifests, waste analysis, and annual reports, for at least three years. The files must be available for inspection by IEPA.
- ✓ Maintain emergency equipment needed for the types of hazardous waste generated, such as fire extinguishers, spill control equipment, and alarms.
- ✓ Establish emergency response procedures.
- ✓ Assign at least one employee to be responsible for coordinating and responding to spills or other emergencies.
- ✓ Post the location of emergency response equipment and phone numbers for the emergency coordinator and the fire department near telephones.

Large-Quantity Generators

Large-quantity generators produce more than 1,000 kilograms (2,205 pounds or about 220 gallons) of hazardous waste during any calendar month and are allowed to store the waste up to 90 days.

- ✓ Comply with requirements for small-quantity generators.
- ✓ Document emergency response procedures in a written emergency contingency plan.
- ✓ Share copies your contingency plan with local police departments, fire departments, hospitals, and state and local emergency response teams.
- ✓ Conduct annual employee training on how to handle hazardous waste.
- ✓ Keep training records on-site.

Manage Universal Waste

Some hazardous wastes, such as waste lamps, batteries, mercury-containing devices, and some pesticides, can be safely managed using streamlined procedures designed to encourage recycling. Universal waste laws can be found at www.ipcb.state.il.us/documents/dsweb/Get/Document-12255. Most marinas are classified as small-quantity handlers.

All Handlers

- ✓ Store spent lead acid batteries upright in a secure location that is protected from weather.
- ✓ Layer stacked batteries with wood to prevent them from being stacked directly on top of one another.

- ✓ Inspect batteries weekly and keep written inspection records.
- ✓ Do not drain batteries or crack the casings.
- ✓ Send accumulated batteries to a reclaimer within 6 months of receipt. Ship more frequently if you accumulate large quantities of spent batteries.
- ✓ Strap batteries to pallets or wrap the batteries and pallets in plastic before transporting.
- ✓ Recycle batteries and mercury-containing products, such as lamps and bilges, at local collection centers. Visit www.epa.state.il.us/land/fluorescent-lamps for a list of companies that accept universal waste. Used batteries can also be recycled with retailers that sell lead acid batteries (415 ILCS 5/22.23).
- ✓ Clean up spills and broken glass from lamps or batteries immediately.
- ✓ Train staff in the proper management of universal waste.
- ✓ Educate boaters on the proper disposal of waste safety flares, fluorescent high density discharge lamps, and bilge switches.

Small-Quantity Handlers

- ✓ Place cracked or leaking batteries and mercury-containing equipment in a sturdy, acid-resistant, leak-proof, sealed container.
- ✓ Label containers "universal waste" or "waste-" or "used-" lamps, batteries, etc.
- ✓ Keep containers closed except when adding or removing waste.
- ✓ Record the date accumulation starts on the container, in the storage area, or in your records.
- ✓ Send the waste to another universal waste handler or destination facility within a year.

Manage Used Oil

Used oil can become hazardous waste when mixed with other solvents or materials. For more information, visit www.epa.state.il.us/small-business/used-oil.

- ✓ Reduce the amount of used oil you generate by using longer-lasting synthetic oils, reconditioning and reusing used oil, and using reusable filters.

- ✓ Store used oil in clearly labeled containers, tanks, or approved units that are in good condition and are not leaking (35 IAC 739.122).
- ✓ Keep storage containers closed except when oil is being added or removed.
- ✓ Drain used oil filters with a funnel into the appropriate labeled waste collection container to allow the excess petroleum product to drain into the container.
- ✓ Collect and recycle filters.
- ✓ Designate an area for storing used oil that is clearly marked and readily accessible.
- ✓ Build a secondary containment system and place containers on an impermeable surface, such as cement or asphalt, to prevent oil from entering the soil or water (35 IAC 739.154).
- ✓ Avoid storing used oil for longer than a year.
- ✓ Maintain a contract with a licensed used oil transporter to ship used oil to an oil recycler. Used oil generators can also self-transport 55 gallons or fewer of used oil to a collection facility. Visit www.epa.state.il.us/land/waste-mgmt/facility-tables/oil-recyclers.html for a list of licensed recyclers.
- ✓ Require proper used oil management as a condition of your lease.
- ✓ Post signs explaining how to manage used oil and filters.

Manage Waste from Boat Owners

Hazardous waste generated by private boat owners is not subject to hazardous waste requirements as long as it is managed with normal household trash. Universal wastes, used oil, and antifreeze collected from boat owners should be managed according to the requirements outlined in this chapter.

- ✓ Provide separate, clearly labeled containers to collect used oil, antifreeze, solvents, and each of the different types of universal waste.
- ✓ Post signs reminding boaters to dispose of materials in the appropriate container only. See the Marina Management chapter for sample signs.
- ✓ Lock the intake to the oil and antifreeze recycling containers to prevent contamination.
- ✓ Instruct boaters to get the key from the appropriate staff person or to leave their oil or antifreeze next to the

collection container or tank.

- ✓ Assign a staff member to inspect the collection site daily for any material that may have been dropped off.
- ✓ Require personnel and boaters to use funnels when disposing of waste to prevent spills.
- ✓ Remove the funnel and cap the container when waste is not to be added or use a funnel with a spring-loaded cover.
- ✓ Prohibit boaters from pouring gasoline, solvents, paint, varnishes, or pesticides into the oil or antifreeze recycling containers. Those mixtures are considered hazardous waste and must be disposed of differently.
- ✓ Check with your recycler before mixing any materials. Ask if engine oil, transmission fluid, hydraulic fluid, and gear oil may all be placed in waste oil containers. Also ask if ethylene glycol and propylene glycol antifreeze need to be collected separately.
- ✓ Shelter storage containers from wind and rain.
- ✓ Confirm that waste haulers and recycling treatment, storage, and disposal facilities are in compliance with legal requirements before allowing them to manage your waste.
- ✓ Post information about household hazardous waste collection facilities located nearby. Include addresses, phone numbers, hours of operation, and the types of waste accepted. Visit www.epa.state.il.us/land/hazardous-waste/household-haz-waste/hhwc-schedule.html for a list of collection facilities.

Track Pollution Incidents

- ✓ Copy and use the Pollution Report and Action Log included at the end of this chapter to track pollution incidents and actions taken.
- ✓ Post the log on a clipboard in the maintenance area or another easily accessible location.
- ✓ Consult the log daily.

Manage Fish Waste

Improperly handled fish waste can degrade water quality, create odors, and attract vermin and undesirable insects.

- ✓ Designate an area within the marina where fish can be cleaned and prohibit boaters from cleaning fish at their slip.

- ✓ Position cleaning stations away from the water on impervious surfaces equipped with floor drains (77 IAC 800.1400).
- ✓ Shelter stations from wind and rain.
- ✓ Build cleaning stations large enough to accommodate the volume of fish waste generated at your marina.
- ✓ Clean tables and impervious surfaces daily to control flies and insects (77 IAC 800.1400).
- ✓ Supply cleaning stations with potable water hoses fitted with vacuum breakers and watertight disposal containers with tight-fitting lids (77 IAC 800.1400).
- ✓ Consider providing or stocking your ship's store with heavy-duty, biodegradable garbage bags to accommodate fish waste.
- ✓ Prohibit boaters from dumping fish waste into the water.
- ✓ Connect mechanical grinders to the sanitary sewer. Consult local sewage officials to confirm municipal sewage treatment plants are cable of handling biological oxygen demand.
- ✓ Store wash water and ground fish waste in properly sized below-ground septic tanks if a municipal connection is unavailable.
- ✓ Vent storage tanks in a way that disperses fish odors away from the marina facility and adjacent properties.
- ✓ Freeze carcasses if volume is low and properly dispose of the waste when feasible. Freezing allows for less frequent waste hauling and minimizes the associated odor.
- ✓ Dispose of stored fish waste periodically using a licensed liquid industrial waste hauler. Check with local Type II landfills to determine if they accept liquefied fish waste.
- ✓ Work with your waste hauler to arrange a pick-up schedule that ensures fish waste does not accumulate and break down.
- ✓ Consider instructing boaters to place fish scraps in plastic bags and dispose of them in a dumpster or at home.
- ✓ Consider composting fish waste. Proper composting will control the odor and produce an excellent soil conditioner that can be used for your landscaping needs. Visit www.seagrant.umn.edu/publications/F5 to request a free composting manual.

Manage Pet Waste

- ✓ Provide dog walks and receptacles for waste disposal.

- ✓ Prohibit boaters from throwing pet waste overboard.

Manage Trash

- ✓ Develop a waste and recycling management strategy based on the number of patrons supported, the types of waste generated, the layout of your marina, and the amount of staff time you can devote. Ask boaters specifically what their needs are.

- ✓ Establish a recycling program for materials that cannot be incinerated or disposed of in landfills, such as appliances, lead acid batteries, yard waste, used oil, and electronic waste. Visit www.publicplacerecycling.org/index.html for information on how to coordinate public-venue recycling.

- ✓ Locate trash and recycling receptacles in convenient, high-traffic areas, such as at the landside foot of the dock, near bathrooms and showers, alongside vending machines, adjacent to the marina office, or on the path to the parking lot.
- ✓ Do not place trash or recycling containers on docks. Waste or recyclables may inadvertently be tossed or blown into the water.
- ✓ Provide containers that are large enough to hold the expected volume of trash or recyclables. On average, 4 to 6 gallons of reception capacity is needed per person, per vessel, per day. A cubic yard of dumpster space holds 216 gallons of trash.
- ✓ Post signs directing people to trash receptacles if they are not in plain view.
- ✓ Provide lights around trash receptacles so that they are easy to find and safe at night.
- ✓ Provide lids or some other means to trap the waste inside and prevent animals and rainwater from entering receptacles.
- ✓ Post signs listing materials that cannot be placed in the dumpster, such as engine oil, antifreeze, paints, solvents, varnishes, pesticides, lead batteries, transmission fluid, and distress flares. Include information on where to dispose of these wastes.
- ✓ Plant or construct a windscreen around the dumpster to make the area more attractive and to prevent trash from blowing away. Use native plants to develop natural windbreaks.
- ✓ Pick up stray litter from your grounds and nearshore

area at least twice a day.

- ✓ Use a pool skimmer to collect floating debris that collects within your marina.
- ✓ Organize a shoreline cleanup at least once a year.

Recycle

- ✓ Know what materials must be recycled under state and local laws (415 ILCS 5).
- ✓ Contact a waste hauler or your local solid waste recycling coordinator to learn what materials are collected in your area.
- ✓ Provide containers to collect, at a minimum, plastic, glass, aluminum, and paper.
- ✓ Consider providing additional collection receptacles for used oil filters, oil absorbent materials, used fishing line, and plastic films such as shrink wrap or bags.

- ✓ Explore setting up a collection program for boat shrink wrap. Many marinas have been successful in diverting shrink wrap used for boat storage from solid waste to recycling facilities.
- ✓ Provide lids or some type of restricted opening to prevent material from blowing away and rainwater from collecting inside.
- ✓ Place the collection bins for solid recyclables in high-traffic areas near trash receptacles.
- ✓ Ensure that recycling bins look different from the standard trash cans by using a different color or material and clearly marking them as recycling receptacles.
- ✓ Clearly mark each container so people know what may and may not be put in it. See the Marina Management chapter for sample signs.
- ✓ Consider including the location of recycling containers on maps of your facility.
- ✓ Post signs with information on what products must be recycled and where the appropriate recycling containers are located.
- ✓ Post information about local recycling services if you are not able to provide all of the desired services at your facility.

Educate Boaters

- ✓ Photocopy the Waste Containment and Disposal tip sheet in the back of this guidebook and distribute it to your customers. There is room to add your marina's name and logo.
- ✓ Post information about county household hazardous waste collection events and recycling centers.

Table of Recommended Disposal Methods

Waste	Disposal Options Listed in order of preference
Antifreeze	• Recycle. • Hire a waste hauler to dispose of used antifreeze. Determine beforehand if they will accept mixed antifreeze. • Purchase an on-site recovery unit.
Chloroflourocarbons (CFCs)	• Recycle. You must be certified with EPA and use approved recovery and recycling equipment to recover CFCs from equipment and appliances. • Use alternative refrigerants.

Containers (empty)
• Paint cans
• Buckets
• Spent caulking tubes
• Aerosol cans
	• Discard as trash if:
	  ○ No more than 1 inch of residue is on the bottom or inner liner.
	  ○ Aerosol cans are at atmospheric pressure.

Epoxy and polyester resins	• Catalyze and dispose of as solid waste.
Expired distress-signal flares	• Encourage boaters to keep flares on board as extras. • Use for safety demonstrations in the winter. • Encourage boaters to bring expired flares to their local fire department.

Fish waste	• Establish a fish-cleaning station and adopt one of the following disposal methods:
	  ○ Equip the cleaning station with a garbage disposal connected to the municipal sewer.
	  ○ Compost the scraps.
	  ○ Instruct boaters to bag scraps in plastic and discard as trash.

Glue and liquid adhesives	• Catalyze and dispose of as solid waste.
Kerosene	• Filter and reuse for as long as possible before recycling. • Dispose of as hazardous waste.
Latex and water-based paints and varnishes	• Use leftover material for other projects, such as an undercoat for another boat. • Encourage tenants to exchange unused material. • Discard as trash after allowing materials to dry completely.
Lead batteries	• Recycle or sell to dealers. • Encourage boaters to exchange their used batteries for a refund or a new battery with a dealer.
Light bulbs • Fluorescent bulbs • Mercury vapor lamps • High-pressure sodium lamps • Low-pressure sodium lamps • Metal halide lamps	• Recycle as universal waste.
Mineral spirits	• Filter and reuse. • Dispose of as hazardous waste.

Waste	Disposal Options Listed in order of preference
Monofilament fishing line	• Recycle through a manufacturer or tackle shop.
Non-terneplated (automotive type) oil filters	• Recycle after allowing filter to hot drain for at least 12 hours. • Use an oil filter crusher.
Oil-based paints and varnishes	• Use leftover material for other projects. • Dispose of as hazardous waste.
Paint brushes	• Discard as trash after allowing brushes to dry completely.
Paint filters	• Treat as hazardous waste if paint contains heavy metals above regulatory levels. Allow filters to dry completely before disposal.
Pesticides	• Dispose of as hazardous waste.

Pet waste	• Establish a pet walk area and instruct boaters to do one of the following:
	  ○ Flush pet waste to treatment facility.
	  ○ Bag waste and discard as trash.

Plastic shrink wrap	• Recycle.
Quart-size oil cans	• Drain completely and discard as trash.
Rags soaked with hazardous substances	• Wring rags out over a collection receptacle and have them laundered by an industrial laundry. Dispose of the solvent in the container as hazardous waste. • Dispose of rags that fail the TCLP test as hazardous waste.
Residue from pressure washing	• Dispose of as solid waste if non-hazardous.
Residue from sanding, scraping, and blasting	• Dispose of as solid waste if non-hazardous.
Scrap metal	• Recycle.
Scrap tires	• Recycle. Register with IDNR if you will be collecting more than 500 tires.
Sludge recovered from a solvent listed as hazardous waste or that exhibits hazardous characteristics	• Dispose of as hazardous waste.
Sludge recovered from a solvent not listed as hazardous waste and that does not exhibit hazardous characteristics	• Let sludge dry in well-ventilated area, wrap in newspaper, and discard as trash.
Solvents • Acetone • Methylene chloride	• Reuse as long as possible before recycling. • Dispose of as hazardous waste.
Stale gasoline	• Mix with fresh fuel and use. • Hire a hazardous waste hauler to collect and dispose of gasoline.

Waste	Disposal Options Listed in order of preference
Terneplated oil filters (sometimes used in heavy equipment and heavy-duty trucks)	• Dispose of as hazardous waste after draining the oil. Recycle the drained oil.
Used bioremediating bilge booms	• Discard as trash if no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.
Used oil-absorbent material	• Wring out rags used for oil or diesel over recycling bins and reuse. • Dispose of rags used for gasoline as hazardous waste. • Reuse small absorbent pads used to mop up gasoline drips and backsplash from fuel pumps after allowing them to air dry.
Waste oil • Engine oil • Transmission fluid • Hydraulic oil • Gear oil • #2 diesel	• Recycle. • Send the waste to a used oil processor or re-refiner. • Self-transport 55 gallons or fewer to a local collection site. • Hire a licensed waste hauler to periodically collect stored waste oil. Determine beforehand if oils can be collected in one container.

Pollution Report and Action Log

Report Date	Staff Reporting	Problem Description	Action Taken	Action Date	Staff Handling

Safety and Emergency Preparedness

Environmental Concerns

Being adequately prepared can ensure the safety of employees and boaters during a spill, fire, or other emergency situation and potentially mitigate any negative environmental impact. Calling 911 may be appropriate in some instances, but additional staff response is necessary in nearly every emergency situation. Proper employee training and easy access to quick reference guides are necessary for ensuring that important steps are not overlooked.

Laws and Permits

Workplace Emergency Action Plans

Organizations, including marinas, with more than 10 employees are required to develop and maintain an emergency response plan (29 CFR 1910.38). The plan must be kept in the workplace and be available to employees for review. Marinas with fewer than 10 employees may communicate the plan orally. In Illinois, this and other regulations set by the Occupational Health and Safety Administration are enforced by the Illinois Department of Labor. Visit www.illinois.gov/idol/Laws-Rules/safety/Pages/default.aspx for more information.

Hazardous Material Notification

Under the Emergency Planning and Community Right-to-Know Act (40 CFR 355), marinas with "extremely hazardous substances" stored on-site must complete an Emergency Planning Notification Form. The form must be submitted to the Illinois Emergency Management Agency (IEMA) and the marina's Local Emergency Planning Commission within 60 days of receiving the chemical. For a list of these chemicals, visit ehs.uark.edu/DocumentPages/ExtremelyHazardousChemicals.pdf. Marinas do not have to report sulfuric acid from lead acid batteries on customer boats. Contact the Emergency Planning and Community Right-to-Know Information Hotline at (800) 424-9346 for more information.

Hazardous Waste Contingency Plans

EPA regulation (40 CFR 262.34) requires large quantity generators of hazardous waste to have a written contingency plan that includes emergency procedures in the event of a fire, explosion, spill, or other emergency. The plan must include the names, addresses, and telephone numbers of everyone qualified to act as emergency coordinator, a description of all emergency equipment and their locations on-site, and a facility evacuation plan. The plan must also describe the arrangements a marina has made with local emergency authorities to coordinate emergency services.

Environmental Concerns

Laws and Permits
- Workplace Emergency Action Plans
- Hazardous Material Notification
- Hazardous Waste Contingency Plans
- Fire Prevention and Response

Best Management Practices for Emergency Planning
- Assess Hazards
- Develop Emergency Response Plans
- Share Your Emergency Response Plan
- Be Prepared for a Fire

Fire Prevention and Response

The National Fire Protection Association's Automotive and Marine Service Station Code (NFPA 30A) requires marinas with service stations to design and manage them to prevent spills, fire, and other dangers. These requirements are adopted locally. Contact your municipal fire marshal to determine whether this code is enforced in your area. Additionally, the Life Safety Code, adopted by Illinois in 41 IAC 100.7, lays out construction, protection, and occupancy requirements necessary to minimize danger to life from the effects of fire. For more information, call the Office of the Illinois State Fire Marshal at (217) 785-0969.

Best Management Practices For Emergency Planning

Assess Hazards

- ✓ Consider and plan for:
  - Fuel spills (see the Petroleum chapter for additional information)
  - Holding or water tank filled with gas
  - Used oil, antifreeze, or solvent spills at the storage site
  - Fires
  - Health emergencies
  - High winds or tornados
  - Floods
  - Vehicular collisions

Develop Emergency Response Plans

Use the example emergency response plan in Appendix II to create your emergency plan.

- ✓ Develop a clear, concise, and easy to use emergency response plan. The plan should:
  - Include a list of emergency phone numbers for local fire and police departments, the marina owner, neighboring marinas that have emergency response equipment, IEMA, the U.S. Coast Guard National Response Center, and spill response contractors. Consider putting this list on the cover of the plan.
  - Describe the type, amount, and location of hazardous and potentially hazardous materials on-site.
  - Describe the type of response equipment available on-site and where it is stored.
  - Provide a list of equipment and services available from neighboring marinas and spill response firms.
  - Identify what actions should be taken during an emergency and what equipment should be used.
  - Describe what to do in the case of severe weather, such as securing dumpsters, objects that could potentially blow or wash away, and waterside

sewage pump-out and dump stations.
- Include written fire safety procedures.
- Identify who is responsible for specific actions.
- Explain how the equipment should be used and how to dispose of waste and used equipment.
- Indicate when additional people should be called for assistance.
- Designate a single staff member as the official spokesperson for the facility.
- Describe each agency's jurisdiction.
- Include a laminated map of the facility showing valves, pipes, tanks, structures, roads, hydrants, docks, power and fuel shut-offs, hazardous material storage locations, and telephones.

✓ Update the plan annually to include any new technology or equipment and to confirm phone numbers.

✓ Contact local emergency response providers or the local U.S. Coast Guard Marine Safety Office at (202) 475-3400 for information on how to handle emergencies and for training opportunities.

Share Your Emergency Response Plan

✓ Keep all copies of the emergency response plan in a readily accessible location.

✓ Include a copy of the plan in your spill response kit.

✓ Train employees on how to implement the emergency response plan at least twice a year.

✓ Review the plan and response procedures with staff at the beginning of each boating season.

✓ Inform your local fire department and harbormaster, if applicable, about your emergency response plan and equipment.

✓ Let neighboring marinas know what resources are available at your marina.

Be Prepared for a Fire

✓ Meet the National Fire Protection Association's standards for marinas (NFPA 30A, 33, 302, 303, 307). Visit www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp to review these codes.

✓ Install and regularly test smoke detectors.

✓ Ensure that hydrants are available throughout your facility to allow firefighting.

✓ Maintain adequate, readily accessible, and clearly marked

fire extinguishers throughout the marina, especially near fueling stations (41 IAC 251).

- ✓ Ensure that municipal firefighting equipment can easily access all piers, floats, and wharves.
- ✓ Keep all entrances and exits clear in case of a fire (NFPA 4.5.3.2).
- ✓ Inspect all firefighting equipment and systems monthly.
- ✓ Test fire extinguishers annually and maintain current inspection tags (41 IAC 251).
- ✓ Schedule annual fire inspections to ensure your facility is in compliance with applicable fire codes.
- ✓ Maintain fire inspection records (41 IAC 176.430).
- ✓ Train personnel on fire safety and response.
- ✓ Invite the local fire department to conduct training at your marina annually. These visits will also help the fire department become familiar with your facility.

Marina Management

Staff Training

Review Emergency and Pollution Prevention Plans

- ✓ Train employees on emergency response procedures at least twice a year.
- ✓ Run emergency response drills at least twice a year.
- ✓ Review emergency plans with staff at the beginning of each boating season.
- ✓ Invite the U.S. Coast Guard and the local fire department to demonstrate emergency response procedures at your marina.
- ✓ Train employees on the components and goals of your Stormwater Pollution Prevention Plan at least twice a year (40 CFR 122.26). Training must address:
  - The need for a pollution prevention plan
  - Used oil management
  - Used solvent management
  - Used battery management
  - Proper disposal of used abrasives
  - Disposal of boat wastewater
  - Spill prevention and control
  - Fueling procedures
  - Pump-out operations
  - Painting and blasting procedures
  - Use of equipment such as dustless sanders and high-volume low-pressure spray guns
  - General good housekeeping
  - Strategies for communicating rules to patrons and contractors

Encourage Diligence

- ✓ Share the best management practices in this guidebook with your employees.
- ✓ Require marina personnel to pick up any stray litter from the grounds and nearshore area.
- ✓ Encourage personnel to look for and immediately stop:
  - Hull cleaning that results in colored plumes in the water
  - Bilge water discharge with a sheen
  - Uncontained sanding, painting, varnishing, or cleaning
  - Washing of maintenance debris into the water
  - Discharges of sewage within the marina

Staff Training
- Review Emergency and Pollution Prevention Plans
- Encourage Diligence
- Investigate Course and Workshop Offerings
- Maintain Training Records

Public Awareness
- Incorporate Best Management Practices into Contracts
- Post Signs Describing Best Management Practices
- Distribute Green Boating Information to Boaters
- Host a Workshop on Green Boating Practices
- Recognize Boaters
- Approach Polluters

Business Practices
- Offer Environmental Audits for Boaters
- Avoid Environmental Surcharges

Public Relations
- Become an Illinois Clean Marina
- Publicize Your Good Deeds

- The use of environmentally harmful cleaning products

Investigate Course and Workshop Offerings

Look for courses, workshops, or webinars related to environmental protection. To learn more about programs in your area, visit web.extension.illinois.edu/state/index.html.

Maintain Training Records

- ✓ Record training dates, topics, and names of employees and instructors.
- ✓ Require staff to fill out and sign forms showing they have completed training.
- ✓ Keep copies of instructional material.

Public Awareness

Incorporate Best Management Practices into Contracts

In addition to being legal documents, contracts are very effective educational tools. Use the contract to inform boaters and contractors of how to minimize their environmental impacts.

- ✓ Include language requiring the use of best management practices in all of your contracts for slip holders, live-aboards, transients, charters, workers, contractors, and tenants.
- ✓ Specify the consequences for not using best management practices, such as "Failure to use best management practices will result in expulsion from the marina and forfeiture of rental fees."

Post Signs Describing Best Management Practices

- ✓ Post signs at fuel docks and pump-out stations, along piers, in vessel maintenance areas, and at dumpsters and recycling stations. See samples on the next page.
- ✓ Be sure the signs are visible, durable, eye catching, and appropriately sized.
- ✓ Post your facility's environmental policy for public viewing.

Suggested Signs

Notice: The Discharge of Oil Is 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 water. Violators are subject to a penalty of $5,000.

The use of soaps to disperse oil is illegal. Violators may be fined up to $25,000 per incident.

Report oil spills to U.S. Coast Guard at (800) 424-8802 and the Illinois Emergency Management Agency at (800) 782-7860.

Fresh Water Habitat Sanctuary

This marina provides food and shelter for young fish. Help fish and other wildlife by:

- Preventing oil spills
- Keeping bilges clean
- Using oil-absorbent pads
- Recycling or properly disposing of used oil, antifreeze, solvents, cleaners, plastics, and other waste

No Fish Scraps

Do not discard fish scraps in the marina basin. Use our fish cleaning system, bag scraps, and dispose of them in dumpsters or at home.

Think Before You Throw

The following items may not be placed in this dumpster:

- Oil
- Antifreeze
- Paint or varnish
- Solvents
- Pesticides
- Lead batteries
- Transmission fluid
- Distress flares
- Loose polystyrene peanuts
- Hazardous waste

Pump-Out Station

[Instructions for use]

[Hours of operation]

[Fee]

[Name and number of person to call in case of malfunction]

Recycle Oil

This container is for:

- Engine oil
- Transmission fluid
- Hydraulic fluid
- Gear oil
- #2 diesel
- Kerosene

[Tailor to fit your hauler's requirements.]

Gasoline is STRICTLY PROHIBITED.

[If container is locked, include information about where to find the key or leave the oil.]

Environmental Policy

It is the policy of this marina to protect the health of our boaters, staff, and the environment by minimizing the discharge of pollutants into the water and air.

Do Not Discharge Sewage

Please use our clean, comfortable restrooms while you are in port. Nutrients and pathogens in sewage impair water quality.

Vessel Maintenance Area

- Conduct all major repairs in the vessel maintenance area.
- Perform blasting and spray painting within the enclosed booth or under tarps.
- Use tarps or filter fabric to collect paint chips and other debris.
- Use a vacuum sander [include rental information, if appropriate].
- Use high-volume, low-pressure spray guns [include rental information, if appropriate].
- Use pans with all liquids.
- Reuse solvents.
- Store waste solvents, rags, and paints in covered containers.

Oil Spill Response Kit

[Include name and number of a person to contact at the marina in case of a spill.]

Recycle Antifreeze

This container is for:

- Ethylene glycol antifreeze
- Propylene glycol antifreeze

[Tailor to fit your hauler's requirements.]

Gasoline, diesel, kerosene, and all other materials are STRICTLY PROHIBITED.

[If container is locked, include information about where to find the key or leave the antifreeze.]

Recycle Items

- Oil
- Antifreeze
- Lead batteries
- Glass
- Plastic
- Aluminum
- Corrugated cardboard
- Mixed paper
- Newspaper
- Solvents
- Steel
- Scrap metal
- Tin
- Tires
- Metal fuel filter canisters

[Indicate which items you recycle and where the collection sites are. Include information about local recycling services for materials that you do not collect.]

Distribute Green Boating Information to Boaters

- ✓ Distribute your environmental policies to boaters.
- ✓ Post information about best management practices on a marina bulletin board.
- ✓ Copy and distribute the Clean Boater Tip Sheets included in this guidebook, or create your own.
- ✓ Send the tip sheets with monthly mailings and place in dock boxes or on vessels. Make sure they do not end up in the water.
- ✓ Include articles about best management practices in your newsletter.
- ✓ Get copies of clean boating materials from organizations such as Boat U.S. at www.boatus.com and the National Oceanic and Atmospheric Administration at coastalmanagement.noaa.gov/marinas.html.
- ✓ Contact the U.S. Coast Guard for publications summarizing federal boating requirements.
- ✓ Convey pollution prevention information in conversations with patrons and contractors.

Host a Workshop on Green Boating Practices

- ✓ Include a walking tour of the facility to demonstrate best management practices.
- ✓ Schedule workshops to coincide with an existing marina function that is traditionally well attended, if possible.
- ✓ Offer incentives for patrons to attend workshops, such as door prizes, discounts, product samples, and food.

Recognize Boaters

Publicly recognize boaters who are making an effort to control pollution. Feature clean boaters in your newsletter, post a flyer with the boater's picture on a public bulletin board, or give an award.

Approach Polluters

- ✓ Determine who can confront boaters and contractors who are polluting. Except in an emergency, this usually is a job for the manager.
- ✓ Inform boaters and contractors why their actions are harmful.
- ✓ Suggest a more environmentally sensitive method and ask that the work stop until it can be done with less environmental impact.

- ✓ Follow-up if the problem persists by:
  - Talking to the boater or contractor again.
  - Mailing a written notice asking that the harmful practice stop. Keep a record of the mailing.
  - Charging the boater or contractor for the cost of clean-up.
  - Asking the tenant or contractor to leave your marina.

Business Practices

Offer Environmental Audits for Boaters

- ✓ Expand your business by offering environmental audits.
- ✓ Inspect engines, bilges, fuel systems, and holding tanks.
- ✓ Provide pollution prevention materials, such as oil-absorbent pads, bilge pillows or socks, and air/fuel separators.

Avoid Environmental Surcharges

- ✓ Charge fees for the use of tangible items, such as tarps, vacuum sanders, and protective clothing, rather than implementing a flat environmental surcharge.
- ✓ Consider donating a portion of rental fees to an environmental organization.

Public Relations

Become an Illinois Clean Marina

- ✓ Apply to be an Illinois Clean Marina. See the Clean Marina Certification Process section in the introduction of this guidebook for more information.
- ✓ Use the Illinois clean marina logo in your advertising and correspondence and fly a clean marina flag.
- ✓ Use your certification as an opportunity to prepare a press release.
- ✓ Maintain your clean marina status by continuing to meet program standards and scheduling on-site assessments when required.

Publicize Your Good Deeds

- ✓ Prepare news releases to highlight your innovative practices, new equipment or services, available literature, or a workshop you are sponsoring.
- ✓ Plan news releases to coincide with seasonal activities, such as 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, such as "Visit the marina for a demonstration of the new plastic media blasting system." The news release should be no longer than two pages. Visit www.las.illinois.edu/news/communications/resources/newsrelease for more writing tips and to view sample press releases.

- ✓ Learn media deadlines and send releases in time to meet them.
- ✓ Send news releases to the editors of the publications and be sure names are spelled correctly.
- ✓ Ask for press kits from manufacturers of environmentally sensitive products and use their photographs and product information.
- ✓ Participate in National Marina Day. Visit www.nationalmarinaday.org for more information on National Marina Day and event resources.

Laws and Regulations

This chapter of laws, regulations, and permit information is by no means comprehensive. It is meant to provide the following:

- ✓ An introduction to the responsibilities of certain federal and state agencies
- ✓ An overview of some relevant laws
- ✓ A synopsis of information about pertinent permits and licenses

Selected Federal Agencies

U.S. Environmental Protection Agency (EPA)

This agency is responsible for ensuring that environmental protections are included in U.S. policies concerning economic growth, energy, transportation, agriculture, industry, international trade, and environmental quality. EPA's policies are targeted to prevent pollution wherever possible and to reduce risk to people and ecosystems in the most cost-effective manner. The agency also provides business, state and local governments, communities, and citizens with information on how to prevent pollution and protect human health and the environment. The Office of Water is responsible for implementing the Clean Water Act, portions on the Coastal Zone Act Reauthorization Amendments of 1990, the Resource Conservation and Recovery Act, and the Marine Plastics Pollution Research and Control Act, among others.

National Oceanic and Atmospheric Administration (NOAA)

An agency within the U.S. Department of Commerce, NOAA's mission is to conserve and wisely manage the nation's coastal and marine resources to ensure sustainable economic opportunities. NOAA is also responsible for describing and predicting changes in the earth's environment. The agency provides a wide range of observational, assessment, research, and predictive services for estuarine and coastal Great Lakes regions. In partnership with the EPA, NOAA implements the Coastal Zone Act Reauthorization Amendments of 1990.

U.S. Army Corps of Engineers (USACE)

USACE is responsible for ensuring adequate flood control, hydropower production, navigation, water supply storage, recreation, and fish and wildlife habitat. USACE contracts and regulates coastal engineering projects, particularly harbor dredging and beach nourishment projects. They also review and permit coastal development and restoration projects. The majority of marina development and expansion projects, including dredging, will require a permit from USACE.

Selected Federal Agencies

- U.S. Environmental Protection Agency (EPA)
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Army Corps of Engineers (USACE)
- U.S. Fish and Wildlife Services (USFWS)
- U.S. Coast Guard (USCG)

Selected State Agencies

- Illinois Department of Natural Resources (IDNR)
- Illinois Environmental Protection Agency (IEPA)
- Illinois Emergency Management Agency (IEMA)
- Office of the Illinois State Fire Marshal (OSFM)

Selected Federal Laws that Affect Marinas

- Clean Boating Act of 2008
- Clean Vessel Act
- Coastal Zone Act Reauthorization Amendments of 1990
- Federal Endangered Species Act
- Federal Water Pollution Control Act
- Fish and Wildlife Coordination Act
- Marine Plastic Pollution Research and Control Act
- Oil Pollution Act of 1990
- Refuse Act of 1899
- Resource Conservation and Recovery Act

Selected State Laws that Affect Marinas

- Boater Registration and Safety Act
- General Solid Waste Management
- Hazardous Waste Management
- Illinois Environmental Protection Act
- Illinois Pesticide Act
- Oil Spill Reporting and Response
- Petroleum Dispensing and Fueling
- Rivers, Lakes, and Streams Act
- Sewage Management
- Stormwater Management

Environmental Permits and Licenses

- Clean Water Act Section 404 Permit
- Illinois Construction Permits
- NPDES Stormwater Discharge Permits
- NPDES Pesticide Application Point Source Discharge Permit

Links

- Federal Agencies
- State Agencies
- Illinois General Assembly

U.S. Fish and Wildlife Service (USFWS)

This is the agency within the U.S. Department of the Interior that is responsible for the management and enhancement of fish, wildlife, and natural habitats. USFWS implements and enforces numerous environmental laws that affect marinas, including the Endangered Species Act and the Migratory Bird Treaty Act. Along with other federal agencies, USFWS also reviews and comments on permit applications required for marina development and expansion projects.

U.S. Coast Guard (USCG)

An arm of the U.S. Department of Homeland Security, USCG promotes maritime safety and marine environmental protection, enforces maritime law, manages all federal navigation aids, and regulates and monitors recreational and commercial vessels and waterfront facilities. In addition, the USCG reviews and comments on permit applications for coastal engineering projects.

Selected State Agencies

Illinois Department of Natural Resources (IDNR)

IDNR is responsible for the preservation, protection, and effective management of Illinois' natural, recreational, and cultural resources. The department implements state and federal laws that protect and enhance the state's natural resources and coordinates the many disciplines and programs necessary to provide a clean environment and a full range of outdoor recreational opportunities for Illinois citizens and visitors. As the public trustee for the portions of Lake Michigan that lie within the state, IDNR oversees any manmade changes to the lakebed and the Chicago River.

Illinois Environmental Protection Agency (IEPA)

This agency protects environmental quality in Illinois by enforcing environmental regulations and managing state and federal clean air, water, and land permit programs. IEPA is responsible for overseeing and promoting market-based approaches for preventing water pollution, including stormwater runoff. It is also charged with educating citizens, companies, and government agencies on best practices for securing the health of the environment. Through its Office of Emergency Response, IEPA also works with other agencies to respond to environmental emergencies involving oil or hazardous materials and oversees clean-up efforts.

Illinois Emergency Management Agency (IEMA)

IEMA is responsible for preparing the state for natural or manmade disasters and hazards. Through its State Emergency Response Commission, IEMA prepares communities for chemical emergencies and responds to reported releases of oil or hazardous chemicals. IEMA also establishes and supports Local

Emergency Planning Committees.

Office of the Illinois State Fire Marshal (OSFM)

This agency implements programs designed to save lives and property from fire and explosions. OSFM is responsible for inspecting and licensing aboveground and underground petroleum tank systems. In addition, OSFM conducts operator training required by state and federal law.

Selected Federal Laws that Affect Marinas

Clean Boating Act of 2008 (33 U.S.C. 1342r)

An amendment to the Clean Water Act, this law exempts recreational vessels from the requirement to obtain an NPDES permit for discharges incidental to normal operations. Instead, boaters are required to comply with discharge management practices established by EPA and regulated by USCG. In addition, the Clean Boating Act requires EPA to evaluate recreational vessel discharges and develop industry performance standards based on its management practices.

Clean Vessel Act (33 U.S.C. 1322)

This act provides funds to conduct boater environmental education and construct, renovate, and operate pump-out stations. Under this act, marinas can receive up to $12,500 in grant funding to install a pump-out system. In exchange for grant funding, marina owners agree to maintain pump-out systems in good operating condition for a minimum of 10 years and not to charge more than $5 per pump-out. The pump-out system must be able to accept waste from portable toilets, as well as holding tanks, and must be available to the public during reasonable business hours.

Coastal Zone Act Reauthorization Amendments of 1990 (16 U.S.C. 1455b)

The motivation for the Illinois Clean Marina Program, Section 6217 of this law requires that nonpoint source pollution from marinas be contained. The Illinois Clean Marina Program helps ensure this requirement is met by is promoting voluntary adoption of best management practices to minimize the effect of marinas on surrounding land and water.

Federal Endangered Species Act (16 U.S.C. 1531)

The Endangered Species Act protects species that are in danger of extinction throughout all or a significant portion of their range. Under this act, a biological assessment is required to determine if endangered species are present before construction activities may begin.

Federal Water Pollution Control Act (33 U.S.C. 1251-1376)

Commonly known as the Clean Water Act, this law addresses

many aspects of water quality protection. It provides the authority for the National Pollutant Discharge Elimination System (NPDES) permit program for point sources of pollution. The Clean Water Act also prohibits the discharge of raw sewage within U.S. waters and requires that all recreational boats with installed toilets have an operable marine sanitation device on board.

The act prohibits the discharge of oil or hazardous substances into U.S. navigable waters. It also prohibits the use of chemical agents like soap, detergents, surfactants, or emulsifying agents to disperse fuel, oil, or other chemicals without permissions from USGS. All boats 26 feet in length or over are required to display a placard that is at least 5x8 inches, made of durable material, and fixed in a conspicuous place, such as 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 any time a spill produces a sheen on the water. Failure to report a spill may result in civil penalties. Report spills to (800) 424-8802.

Fish and Wildlife Coordination Act (16 U.S.C. 1344)

This law requires a USFWS review of the potential effects that proposed water resource development projects may have on fish and wildlife. Under this law, fish and wildlife resources must receive consideration equal to other parts of the project. In addition, it requires federal agencies that construct, license, or permit water resource development projects to first consult with USFWS and state fish and wildlife agencies regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

Marine Plastic Pollution Research and Control Act (33 U.S.C. 1914-1915)

The MPPRCA of 1987 restricts the overboard discharge of garbage. Under this law, it is illegal to dump plastic, paper, rags, glass, metal, crockery, dunnage (lining and packing material, nets, lines, etc.), and food into any U.S. lake, river, and bay. Ports and terminals, including recreational marinas, must provide adequate and convenient receptacles for their customers, including transients. All boats over 40 feet must also have a written waste management plan on board.

Oil Pollution Act of 1990 (33 U.S.C. 2701-2720)

This law primarily addresses commercial oil shipping. However, some of the requirements are applicable to recreational boating. Under this law, the responsible party for any boat or facility that discharges oil is liable for the removal costs of the oil and

any damages to environmental quality, real or personal property, subsistence uses, public services, revenues, profits, or earning capacity. The financial liability for all non-tank vessels is $600 per gross ton or $500,000, whichever is greater. In addition, substantial civil penalties may be imposed for discharging oil and for failure to report a spill, remove oil, or comply with regulations.

Refuse Act of 1899 (33 U.S.C. 407)

It is illegal under this law to throw, discharge, or deposit 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 (42 U.S.C. 6921-6939)

RCRA establishes standards for handling, transporting, and disposing of materials that are ignitable, corrosive, reactive, or toxic. Facilities that generate these materials, known as hazardous waste, are categorized as a specific type of generator depending upon the quantity of hazardous waste generated and stored on-site. Some requirements laid out in this law apply to all hazardous waste generators, but most are specific to the amount of waste being generated. For a list of these requirements, see the Waste Containment and Disposal chapter of this guidebook.

Selected State Laws and Rules that Affect Marinas

Boater Registration and Safety Act (625 ILCS 45/4-9)

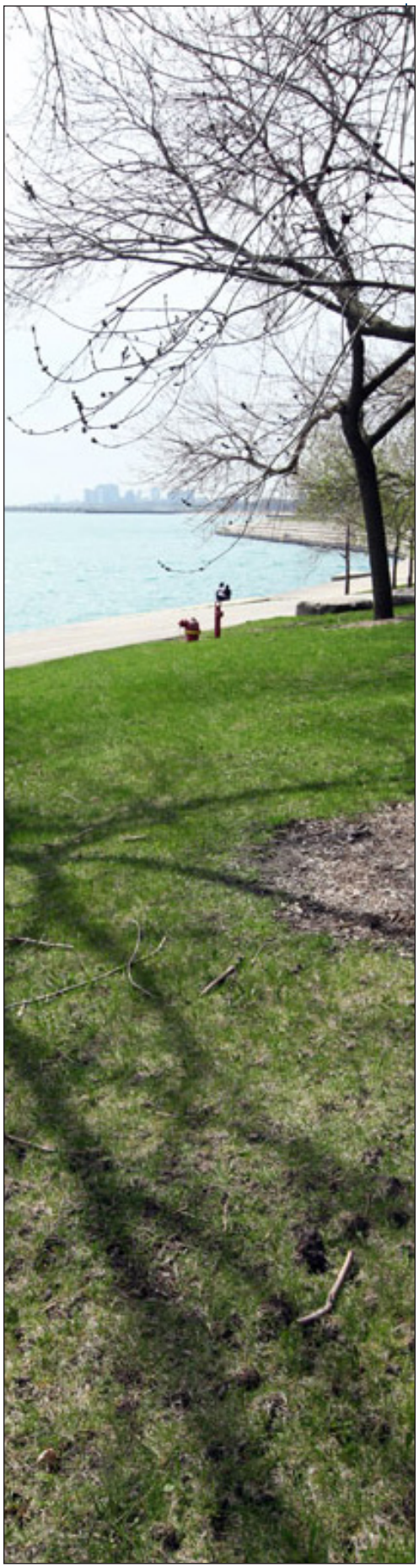
It is illegal under this act to discharge sewage into state waterways. Required measures for preventing illegal discharge are outlined in the Federal Clean Water Act. Any vessel with an installed toilet must be equipped with a USCG-certified Type I, Type II, or Type III marine sanitation device (MSD). 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. This label is not required on Type III systems.

General Solid Waste Management (35 IAC 807-810)

These rules establish procedures for the storage, transport, and disposal of solid waste, including special waste. Solid waste management requirements differ depending on the material and quantity. See the Waste Containment and Disposal chapter in this guidebook or visit www.epa.state.il.us/land/waste-mgmt for more information.

Hazardous Waste Management (35 IAC 720-729)

These rules expand upon the federal Resource Conservation and Recovery Act and outline requirements for hazardous waste management in Illinois. Requirements under these laws differ depending on the amount of hazardous waste generated on-site.



See the Waste Containment and Disposal chapter in this guidebook or visit www.epa.state.il.us/land/hazardous-waste for more information.

Illinois Environmental Protection Act (415 ILCS 5)

The Illinois Environmental Protection Act establishes a unified, statewide program for protecting and enhancing environmental quality. This act is at the center of the state's efforts to limit the negative impacts of activities on the environment and to ensure that any adverse effects are borne by those who cause them. Included in this law is a ban on the disposal of certain materials in Illinois landfills or incineration facilities. Materials include major appliances, lead acid batteries, yard waste, waste oil, and electronic waste. Visit www.epa.state.il.us/land/waste-mgmt/facility-tables/index.html for a list of approved recycling facilities.

Illinois Pesticide Act (415 ILCS 60)

The Illinois Pesticide Act (415 ILCS 60) requires marinas that apply antifouling paints to boats to follow certain licensing and certification regulations. These requirements differ depending on whether the marina is applying the antifouling paints in a for-hire status and whether the paint is a restricted-use product. In Illinois, antifouling paints containing tributyl tin are classified as a restricted-use pesticide. The federal Organotin Antifouling Paint Control Act (OAPCA) also restricts the use of tin-based paints on aluminum vessels, boats larger than 82 feet (25 meters), outboard motors, and lower drive units. See the Vessel Maintenance and Repair chapter in this guidebook for more information on specific antifouling paint requirements.

Oil Spill Reporting and Response (41 IAC 176.300-176.360)

Under these rules, owners or operators of petroleum storage tanks are required to immediately report the spill or release of petroleum to IEMA at (800) 782-7860. Spills must also be reported to the National Response Center at (800) 424-8802. Failure to report any spill may result in substantial fines. Owners and operators are also required to immediately clean up any petroleum spill or overfill of 25 gallons or less.

Petroleum Dispensing and Fueling (41 IAC 175.250)

It is illegal under this rule for boaters to fuel their own vessels at a marina. Marinas must ensure that an attendant is always available to fuel vessels for customers. This rule also requires that emergency shutoff switches be installed at each fueling facility in case of fire or physical damage.

Rivers, Lakes, and Streams Act (615 ILCS 5)

This law governs the use of public waters and gives IDNR the authority to regulate construction activities in state waterways. Marina development and expansion projects require joint permits

from USACE, IDNR, and IEPA. See the Environmental Permits and Licenses section below for more information on required permits.

Sewage Management (77 IAC 800.1300)

This rule requires marinas to provide pump-out stations wherever boats equipped with toilets are allowed to dock in recreational areas. Shoreside restrooms for both men and women are also required if marinas provide docking facilities for overnight sleeping. Restrooms must be located within 500 feet of recreational areas.

Stormwater Management (35 IAC 309)

This rule gives IEPA the authority to implement the National Pollutant Discharge Elimination System (NPDES) created by Clean Water Act. The system regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. Most marinas are required to have a Storm Water Permit for Industrial Activities. See the Environmental Permits and Licenses Section below for more information.

Environmental Permits and Licenses

Clean Water Act Section 404 Permit

Under Section 404 of the Clean Water Act, the majority of marina development and expansion projects along the Great Lakes, including dredging, will require a joint permit from USACE, IDNR, and IEPA. Before a Section 404 permit can be issued, IEPA must certify that the proposed project is in compliance with the state's water quality standards (33 U.S.C. 1341). For individual permits, certification occurs during the application review. In order for nationwide permits and other general permits issued by USACE to be valid in Illinois, IEPA must have already certified that the activities they permit will meet water quality standards. Applications that fail to meet water quality standards can be denied even if the proposed activity complies with all other Section 404 provisions. For additional information on the certification program, call the IEPA Watershed Management Section at (217) 782-3362.

Illinois Construction Permits

In addition to federal permits, 17 IAC 3700-3708 require marinas to obtain a permit from IDNR for any construction project in a public body of water. Permits are usually required for individual projects, although some common construction activities are covered under statewide and regional permits. Work that meets all the specified limits of a statewide or regional permit is automatically approved. Marina projects that may require permits include dredging, control of aquatic nuisance species, placement of docks/piers, bank stabilization, and building of marina breakwater structures. For more information and to learn more about statewide and regional permits, visit www.dnr.illinois.gov/

WaterResources/Pages/Permit%20Programs.aspx.

NPDES Stormwater Discharge Permits

The National Pollutant Discharge Elimination System (NPDES) Storm Water Management Program, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. For more information, visit www.epa.state.il.us/water/permits/storm-water/index.html.

Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (35 IAC 309). For more information and to access permit forms, visit www.epa.state.il.us/water/permits/storm-water/industrial.html. Some marinas, such as those managed by the Chicago Parks District, may be covered by a Municipal Separate Storm Sewer System (MS4) permit. Consult with your municipality to determine if your marina is part of an MS4 or visit www.epa.state.il.us/water/permits/storm-water/2000-urbanized-area-list.pdf for a list of cities with MS4 permits.

Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. Instructions and permit forms can be found at www.epa.state.il.us/water/permits/storm-water/construction.html.

As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality. Guidance for developing a SWPPP for construction sites can be found at www.epa.gov/npdes/pubs/sw_swppp_guide.pdf. Similar information for industrial operators can be found at www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf.

Discharges incidental to the normal operation of recreational vessels are exempt from obtaining a NPDES permit. These discharges include graywater, bilge water, cooling water, weather deck runoff, oil water separator effluent, or effluent from properly functioning marine engines.

NPDES Pesticide Application Point Source Discharge Permit

Part of the National Pollutant Discharge Elimination System (NPDES), Illinois created the General NPDES Permit for Pesticide Application Point Source Discharge in 2011. Marinas are required to

have this permit if they use biological or chemical pesticides on the water or along the shoreline to manage plants, insects, or animals (35 IAC 309). Marinas can either acquire this permit for themselves or contract with a permitted commercial pesticide applicator. Eligibility and application requirements can be found at www.epa.state.il.us/water/permits/pesticide/general-permit.pdf.

As a condition of the General Permit for Pesticide Application, marinas that apply pesticides to more than 80 acres of water surface area or 20 linear miles of shoreline annually must develop and implement a Pesticide Discharge Management Plan. Visit www.epa.state.il.us/water/permits/pesticide/pdmp.html for more information.

Links

Federal Agencies

- ✓ U.S. Environmental Protection Agency (EPA): www.epa.gov
- ✓ National Oceanic and Atmospheric Administration (NOAA): www.noaa.gov
- ✓ U.S. Army Corps of Engineers (USACE): www.usace.army.mil
- ✓ U.S. Coast Guard (USCG): www.uscg.mil
- ✓ U.S. Fish and Wildlife Service (USFWS): http://www.fws.gov

State Agencies

- ✓ Illinois Department of Natural Resources (IDNR): dnr.state.il.us/home.htm
- ✓ Illinois Environmental Protection Agency (IEPA): www.epa.state.il.us
- ✓ Illinois Emergency Management Agency (IEMA): www.state.il.us/iema/index.asp
- ✓ Office of the Illinois State Fire Marshal (OSFM): www.sfm.illinois.gov

Illinois General Assembly

- ✓ www.ilga.gov

Spring Start-Up: Antifreeze Collection & Disposal

Antifreeze can be harmful to fish and other aquatic life, especially when multiple boats flush their engines and holding tanks close to fish spawning grounds. Even the less toxic propylene glycol can cause fish kills. Waste antifreeze can also contain heavy metals or fuel from engines that classify it as hazardous waste.

Boat Engine

If your boat has a large engine, do not try to flush antifreeze on your own. Take your boat to an experienced service technician. Otherwise, follow these steps to safely flush your boat engine:

1. Move to a location away from open waters.
2. Check your bilge and clean out any oil with a bilge pillow or absorbent pad.
3. Attach a hose directly to your intake port (for inboards and some inboard/outboards) or use a flushing kit (ear muffs) for engines without a port.
4. Attach the other end of the hose to a water source.
5. Attach a second hose over the exhaust port and place the other end into a 5 gallon bucket to catch the antifreeze as it exits the engine. Have another 5 gallon bucket ready for when the first bucket is full.
6. Turn on the water and start your engine.
7. Collect the water and antifreeze mix in the two buckets. Let the remaining water drain onto the ground until the engine has warmed up.
8. Turn off the engine and water.
9. Dispose of the diluted antifreeze at a marina or automotive center that accepts and recycles antifreeze. The initial 5 gallon bucket may contain antifreeze suitable for reuse next winter. If recycling is not available, pour the antifreeze into a sanitary sewer that flows to a local wastewater treatment plant, such as a toilet or basement drain. Do not pour it into a storm sewer, which discharge directly into streams, lakes, or wetlands. Never dump antifreeze into a septic system.

Freshwater Holding Tank

1. Connect a hose to the sink faucet or place a funnel with a hose attached under the faucet and place the other end into a 5 gallon bucket.
2. Turn on the faucet and start filling the bucket.
3. Collect the antifreeze until the water runs clear.
4. Dispose of antifreeze according to step nine above.

Sewage Holding Tank

Use the head as usual and pump out when needed. The antifreeze and sewage mix will go directly to a sewage treatment plant.

Engine Maintenance

The general maintenance of boat engines can generate pollutants and waste that can be harmful to the environment. Some of these potential pollutants include solvents, paints, lubricants, oils, antifreeze, fuel, batteries, and bilge switches that contain mercury. Proper use, storage, and disposal are crucial to keeping these pollutants out of the environment.

Routine Engine Maintenance

- ✓ Check with marina staff to find out where engine maintenance is allowed at the marina.
- ✓ Avoid unnecessary parts cleaning.
- ✓ Pre-clean engine parts with a wire brush to reduce the need for solvents.
- ✓ Use volatile organic compound-free (VOC-free) solvents when necessary.
- ✓ Use engine cleaning products sparingly.
- ✓ Clean parts in a container or parts washer so that fluids can be collected and recycled.
- ✓ Cover the filter with a plastic bag before removal to prevent oil spills.
- ✓ Drain all fuel from parts prior to disposal.
- ✓ Dispose of all used oil and materials soaked with oil as hazardous waste. Do not discharge oil into the water—it is prohibited by law.
- ✓ Ask if your facility has a collection area for maintenance waste from boaters, such as used oil filters, waste oil, and lead-acid batteries. If not, take them to a household hazardous waste facility or used oil recycling center.
- ✓ Use systems that remove crankcase oils through the dipstick tube to prevent spills during oil changes. Ask your marina manager if the marina has this service available.
- ✓ Keep an oil absorption pad in the bilge or below the engine to collect spilled products.
- ✓ Clean work areas with absorbent materials and a broom.
- ✓ Keep engines properly tuned for efficient fuel consumption, clean exhaust, and lower operating costs.
- ✓ Keep your engine clean to make it easier to spot and correct small leaks before they become big problems.

Winterizing your Boat

- ✓ Use only propylene glycol antifreeze to reduce threat to aquatic wildlife. It is blue, pink, or clear-colored and less toxic than other antifreezes.
- ✓ Fill fuel tanks to 90 percent capacity during winter storage to reduce condensation buildup and prevent leaks.
- ✓ Consider adding a fuel stabilizer to prevent fuel from becoming stale.
- ✓ Flush and collect winterizing agents and antifreeze from the engine prior to launch each season and recycle or dispose of them properly. Check with marina management for recycling/disposal containers.

Hull Maintenance

Hull maintenance can create environmental hazards if it is not conducted in a controlled area. Sanding and blasting used to remove paint can release toxic heavy metals, such as copper and tin. Many chemicals in antifouling paints are designed to leach out and prevent bottom growth on the hull. These chemicals can find their way into the water and may be consumed by aquatic wildlife.

Routine Hull Maintenance

- ✓ Perform repairs and maintenance activities in designated areas and follow your marina's maintenance rules.
- ✓ Work indoors or under cover whenever wind could potentially blow debris into the water.
- ✓ Do not work on your hull near the water.
- ✓ Avoid cleaning your hull when the boat is in the water to reduce the release of heavy metals into water.

Sanding, Grinding, or Scraping

- ✓ Use dust-free sanders and other environmentally-friendly tools, such as vacuum sanders and grinders, if possible. Ask your manager if these tools are available through the marina.
- ✓ Do not sand on windy days.
- ✓ Place a tarp or filter cloth beneath the hull to catch sanding dust and paint drops when working over unpaved surfaces.
- ✓ Clean up all debris, trash, sanding dust, and paint chips immediately following any maintenance or repair activity. Dispose of the debris in your regular trash at home or in designated receptacles at your marina.
- ✓ Vacuum or sweep loose debris when sanding or grinding over paved surfaces.

Painting and Varnishing

- ✓ Buy paints, varnishes, solvents, and thinners in amounts that can be used within a year to avoid having to dispose of stale products.
- ✓ Use water-based paints and solvents when possible.
- ✓ Switch to longer lasting, harder, or nontoxic antifouling paint.
- ✓ Select a bottom paint developed for freshwater lakes and rivers. Check with your marina operator for recommended paints appropriate for freshwater use.
- ✓ Mix paints and solvents at a designated area away from shore.
- ✓ Transfer mixtures to work areas in tightly covered containers of 1 gallon or less.
- ✓ Share leftover paint and varnish with other boaters. Take unused products to a hazardous waste facility or ask your marina manager where to dispose of them.
- ✓ Reuse solvents and thinners by allowing solids to settle and draining the clean product off the top.
- ✓ Dispose of dried, settled solids in your trash at home or in designated receptacles at the marina.
- ✓ Thoroughly dry all empty paint cans and old brushes before disposing of them in the trash.
- ✓ Discard rags containing solvents, paints, thinners, or teak treatment in the trash.

Fuel & Oil Control

Petroleum in or on the water is harmful to aquatic life such as fish, birds, and invertebrates and can lower drinking water quality. The Water Pollution Control Act prohibits the discharge of oil of any kind into or upon the navigable waters of the United States, including the Great Lakes. This includes any discharge that causes a film, sheen, discoloration, sludge, or emulsion on or beneath the surface of the water.

Spill Response

- ✓ When you see oil, gas, or diesel on the water:
  1. Protect yourself and others.
  2. Identify the spilled material and determine how much has spilled, if possible.
  3. Notify marina staff of the spill.
  4. Confine the oil or diesel spill using absorbents in your marina spill kit, if available. If a spill happens on land, confine it before it can spread to the water. Do not try to confine gasoline spills. Due to the risk of explosive fumes or fires, gas spills should be allowed to dissipate and vaporize from the water surface.
  5. Stop the source.
  6. Contact authorities. Call the U.S. Coast Guard National Response Center at (800) 424-8802 and the Illinois Emergency Management Agency at (800) 782-7860.
  7. Clean up the remaining oil, gas, or diesel. Do not use emulsifiers or soaps to treat or disperse a spill. This is prohibited by federal law and may result in a significant fine.
  8. Remove or neutralize any hazardous materials that have accumulated during the spill to decontaminate the site and equipment.
  9. Dispose of used absorbent material appropriately.

Preventive Equipment

- ✓ Install a fuel/air separator along your vent line. These allow air, but not fuel, to escape through a vent opening.
- ✓ Attach a safety nozzle to portable gas cans used to fill outboard engines. The nozzle will automatically stop the flow of fuel when the receiving tank is full.
- ✓ Install a bilge pump switch that leaves an inch or two of water in the bilge to prevent oily bilge water from being discharged. Alternatively, connect a bilge water filter to your bilge pump to remove oil, fuel, and other petroleum hydrocarbons from the water.
- ✓ Buy a fuel-efficient, low emission model when it is time to replace your engine.

Fueling Practices

- ✓ Wait for a trained attendant to fuel your vessel or portable tank. Illinois law prohibits self-service at marinas.
- ✓ Ensure attendants fill portable tanks in collections pan to reduce spills.
- ✓ Ensure tanks are filled to no more than 90 percent capacity.
- ✓ Install a fuel/air separator or an air whistle in your tank line to prevent spills. Ask the marina staff for information on who can provide this service.
- ✓ Fill your tank before leaving port instead of right after returning to reduce spills caused by thermal expansion.
- ✓ Inspect the bilge after fueling for leakage or fuel odors.
- ✓ Turn on bilge blowers for several minutes before starting the engine and ventilate until odors are gone.

Bilge Maintenance

- ✓ Keep your engine well-tuned to minimize the amount of oil that is released with bilge water. Be sure there are no leaking seals, gaskets, or hoses.
- ✓ Keep an oil absorption pad or bilge sock in the bilge or below the engine to absorb spilled oil.
- ✓ Replace used oil-absorbent materials regularly.
- ✓ Look for contractors or marinas that offer a bilge pump-out service.
- ✓ Do not use soaps or detergents to clean the bilge.

Oil and Oil-Absorbent Material Disposal

- ✓ Recycle used oil. Call your municipal solid waste department or the Illinois Environmental Protection Agency for recycling locations in your area.
- ✓ Bring used solvents and waste gasoline to local hazardous waste collection centers. Ask marina staff if waste collection is available at your marina.
- ✓ Do not dump waste oils and engine coolants on the ground or into storm drains, dumpsters, or open waters.
- ✓ Store and dispose of fuels and engine oils separately from each other and from other materials, such as antifreeze and solvents. These materials can become hazardous waste when they are combined.
- ✓ Dispose of used oil-absorbent material as appropriate for the type of product and how it was used:
  - Standard absorbents saturated with oil or diesel only (no gasoline) may be wrung out over oil recycling bins and reused.
  - Bioremediating bilge booms may be disposed of in your regular trash as long as they are not dripping any liquid. Because the microbes need oxygen to function, do not seal them in plastic bags.
  - Small pads used to clean up minor drips at the fuel pump may be allowed to air dry and be reused.
  - Standard absorbents saturated with gasoline should be disposed of as hazardous waste.
- ✓ Check with the marina operator before disposing of any used material.

Boat Cleaning

Some common solvents and cleaners can cause harm to aquatic environments if care is not taken during their use, especially where many boaters are using the same chemicals. Because marinas are located in a sheltered environment, pollutants tend to build up within their basins.

Clean Carefully

- ✓ Clean as much of your boat as you can before launching it for the season.
- ✓ Wash your boat at designated areas away from the shoreline. Do not wash your boat on a paved surface that allows the water to flow into a storm sewer and then into the nearest stream or lake.
- ✓ Use the least amount of pressure necessary to remove growth but still leave the paint intact when pressure washing ablative/antifouling paint. Use a regular garden hose and a soft cloth where practical.
- ✓ Use natural cleaners, such as lime juice, borax, and baking soda, if water is not enough. See the list of alternative cleaners outlined in the Nontoxic Cleaning Alternatives tip sheet.
- ✓ Use cleaning products sparingly and only when water and natural cleaners are not working.
- ✓ Use cleaning products that are non-toxic and phosphate free. Follow the instructions on the label.
- ✓ Avoid detergents that contain ammonia, sodium hypochlorite, chlorinate solvents, petroleum distillates, and lye.
- ✓ Clean teak with a mild soap and abrasive pad, nylon brush, or bronze wool.
- ✓ Collect all paint chips, dust, and residue after washing. Dispose of them in your regular trash at home or in designated marina receptacles.
- ✓ Wash your boat above the waterline only when on the water.
- ✓ Use a sponge and plain water to wash your boat while on the water. Do not use cleaning solvents.
- ✓ Keep your boat waxed to prevent surface dirt from becoming ingrained in the hull and to make it easier to clean.

Be a Conscientious Consumer

- ✓ Buy cleaning products that have either no product warning or only a “caution” listed on the label. Labels convey information about the degree of hazard associated with a particular product, and a “caution” signals a less hazardous product.
- ✓ Be wary of unqualified general claims of environmental benefit, such as “ozone friendly.” Look for products with more descriptive labels, such as “This product is 95 percent less damaging to the ozone layer than past formulations that contained chlorofluorocarbons (CFCs).”

Non-Toxic Cleaning Alternatives

Use cleaning products sparingly and minimize the amount discharged into the water. While baking soda, vinegar, lemon juice, and vegetable oils are far less harmful than bleaches, scouring powers, or detergents, they may still be harmful to marine life. Dispose of all used cleaning products on shore. The table below provides non-toxic alternatives to typical cleaning products for your boat and home.

Products	**Alternative**
Air freshener	Open box of baking soda left out
Aluminum cleaner	2 tablespoons of cream of tartar in 1 quart of hot water
Brass cleaner	Worcestershire sauce or a paste made of equal amounts of salt, vinegar, and water
Chlorine bleach	Borax or baking soda and water
Chrome cleaner/polish	Apple cider vinegar to clean and baby oil to polish
Copper cleaner	Lemon juice and water or a paste made of lemon juice, salt, and flour
Disinfectants	½ cup of borax in 1 gallon of water
Drain opener	Plumber's snake or ¼ cup baking soda and ¼ cup vinegar in several quarts of water
Fiberglass stain remover	Paste made of baking soda and water
Floor cleaner	1 cup vinegar in 2 gallons of water
General cleaner	Baking soda and vinegar or lemon juice combined with borax paste
Hand cleaner	Baby oil or margarine
Head and shower cleaner	Baking soda
Mildew remover	Paste made of equal parts lemon juice and salt or white vinegar and salt
Rug/upholstery cleaner	Dry corn starch
Scouring powders	Baking soda or ½ lemon dipped in borax
Stainless steel cleaner	Baking soda or mineral oil for polishing and vinegar to remove spots
Toilet bowl cleaner	Baking soda
Window cleaner	1 cup vinegar in 1 quart of warm water
Wood polish	Olive or almond oil (interior walls only)

Adapted from: Buller (1995) and MA Department of Environmental Management, Environmental Hazards Management Institute.

Wastewater Containment & Disposal

All boats generate wastewater from marine toilets, laundry and dishwashing facilities, or bilge waste. Raw or poorly treated boat sewage is harmful to human health and water quality. The nutrients in sewage also promote algae growth and may result in fish kills. The Clean Water Act prohibits the discharge of raw or partially treated sewage into any body of water.

Vessel Sewage

- ✓ Use shoreside restrooms when docked and before heading out on the water.
- ✓ Use the marina's pump-out or dump station. If there is not a pump-out or dump station available, check with marina management. They may have a cooperative agreement to use another marina's pump-out station
- ✓ Radio ahead to determine the operation hours for a particular pump-out facility.
- ✓ Have your marine sanitation device (MSD) inspected regularly to ensure that it is functioning properly.
- ✓ Keep your MSD disinfectant tank full, use biodegradable treatment chemicals, and follow the manufacturer's suggested maintenance program.
- ✓ Put environmentally friendly additives in your MSD. Check with your marina operator for more information.
- ✓ Do not dispose of fats, solvents, oils, emulsifiers, disinfectants, paints, poisons, phosphates, diapers, or similar products in your MSD.

Holding Tanks

- ✓ Consider installing a Type III MSD with a holding tank.
- ✓ Control odor by installing fiberglass or metal tanks, keeping the number of connections to a minimum, and ensuring seals are tight.
- ✓ Use enzyme-based products in your holding tank. Enzymatic products use biological processes instead of harsh chemicals to break down sewage.
- ✓ Pump out and rinse your holding tank prior to using an enzyme product if you have used chemical-based additives in the past. Chemical residues may interfere with the effectiveness of enzyme-based products.
- ✓ Avoid holding-tank products that contain quaternary ammonium compounds (QACs) and formaldehyde. These products may disrupt the function of municipal sewage treatment plants that receive wastewater from marina pump-out stations.

Portable Toilets

- ✓ Consider buying a portable toilet to contain raw sewage if you have a small vessel.
- ✓ Empty portable toilets at the pump-out stations. Do not dump waste into marina toilets.

Graywater

Graywater includes soaps and detergents from boat showers and dishwashing and laundry facilities. These soaps, even those labeled "biodegradable," contain substances harmful to marine life.

- ✓ Use shoreside showers, dishwashing stations, and laundry facilities whenever possible.
- ✓ Use all soaps and cleaners sparingly and only when plain water is not working.
- ✓ Use low-nitrogen and phosphorous-free detergents for onboard laundry, dish washing, and general cleaning.

Bilges

Bilges can be a major source of wastewater pollution in marinas. When the bilge pump is activated, pollutants that collect in the bilge, such as engine oil and lubricants, are pumped out into the water. Additional bilge water concerns and good boating practices are included in the Fuel and Oil Control tip sheet.

- ✓ Do not discharge bilge water that has an oily sheen.
- ✓ Use bilge socks to collect floating oil and fuel in the bilge.
- ✓ Replace pads when they are heavily saturated or soiled.
- ✓ Install a bilge pump switch that leaves an inch or two of water in the bilge.
- ✓ Install a bilge water filter to remove oil and fuel from the water.

Waste Containment & Disposal

All boaters generate waste that could threaten aquatic wildlife and human health. Plastics and other solid wastes can injure or kill aquatic life and birds by trapping or entangling them. And corrosive or toxic hazardous waste must be properly stored, disposed of, and recycled. Federal and state laws make it illegal to discard any solid or hazardous wastes in the water.

Solid Waste

- ✓ Have a waste container on your boat.
- ✓ Do not let trash get thrown or blown overboard. If trash blows overboard, retrieve it.
- ✓ Pick up trash that you come across, either floating in the water or on land.
- ✓ Properly dispose of all trash in marina trash cans and recycling bins. Replace the lids after using them so that waste does not blow out of the cans or bins.
- ✓ Bring used monofilament fishing line to recycling bins at your tackle shop or marina.
- ✓ Purchase refreshments in recyclable containers and recycle them.
- ✓ Pack food in reusable containers.
- ✓ Buy products without plastic or excessive packaging.
- ✓ Use recyclable containers and reusable bags in place of plastic wrap and disposable bags.
- ✓ Cut rings of six-pack holders prior to disposal.
- ✓ Recycle cans, glass, newspapers, antifreeze, oil, and lead batteries.
- ✓ Find out if your marina recycles shrink wrap used for winter boat storage. Recycle your shrink wrap if possible.
- ✓ Clean up after your dog and deposit all pet waste in a trash can or appropriate receptacle.
- ✓ Avoid feeding wild birds, including ducks, geese, and seagulls, in the marina. Feeding birds encourages them to flock to the marinas and become long-term residents. Bird waste can contaminate water and create a mess on boats and walkways.
- ✓ Contact a marina staff member immediately if you see a problem with waste at your marina.

Fish Waste

Fish cleaning may damage water quality if the wastes are discarded into the poorly flushed marina basin.

- ✓ Ask your marina operator about the facility's fish cleaning and disposal policy.
- ✓ Clean your fish at a fish cleaning station only to keep the marina and water clean, keep odors down, and reduce nuisance birds and pests.
- ✓ Double bag waste and dispose of it at home or in a marina dumpster designated for fish waste.
- ✓ Compost your fish waste if your marina has a waste composting program.

Maintenance Waste

Check first with your marina operator for proper disposal or recycling options at the marina. Otherwise, dispose of the following items according to the recommendations listed below.

Waste Product	**Disposal Method**
Oil	Recycle or take to a waste oil collection facility
Oil filters	Puncture and hot drain for 12 hours. Recycle oil and canister at a household hazardous waste facility (HHW) or oil collection facility
Antifreeze	Recycle or send to a HHW facility
Paint and varnish	Allow to dry completely and solidify and dispose of in regular trash
Solvents, gasoline, and pesticides	Bring to a HHW facility
Expired emergency flares	Bring to local fire department or a HHW facility
Batteries	Recycle or bring to a HHW facility

Aquatic Invasive Species

Biologists estimate that more than 180 aquatic invasive species (AIS) now inhabit the Great Lakes region, causing billions of dollars of economic damage and significant ecological change. Because invasive species are virtually impossible to eliminate, preventing new introductions is essential.

Remove, Drain, Dry

- ✓ Remove all mud, plants, and animals from boats, propellers, trailers, and accessory equipment whenever boats are launched or retrieved and before leaving the marina.
- ✓ Drain the bilge, live well, and other water containing devices before leaving the marina.
- ✓ Wipe equipment with a towel or let it dry for at least five days before reuse.
- ✓ Clean and dry all equipment surfaces exposed to water.
- ✓ Pay special attention to cleaning and drying boats before moving between water bodies.
- ✓ Take additional steps to decontaminate equipment that has been left in the water for more than a day or has been exposed to a known infested body of water:
  - Spray hull and other external areas or recreational equipment with high pressure, hot water. Water temperature should be as hot as possible.
  - Flush motors according to owner's manual with hot water.
  - Rinse interior compartments with hot water.
- Use 100 percent vinegar or a 3½ percent salt water solution if hot water is unavailable.

Other Prevention Practices

- ✓ Become familiar with invasive species in Illinois.
- ✓ Use non-invasive or native species as bait.
- ✓ Do not use fish parts as bait or chum.
- ✓ Dispose of unused bait, worms, and fish parts in proper collection receptacles. Do not throw unused bait into the water.
- ✓ Discard invasive species removed from equipment in trash cans located away from the water to prevent reentry.
- ✓ Report new infestations to the U.S. Fish and Wildlife Service at (877) 786-7267.

Appendix I

Spill Prevention, Control, And Countermeasure Plan

Frequently Asked Questions

What is a Spill Prevention, Control, and Countermeasure (SPCC) plan?

A SPCC plan is a written document that outlines a facility's oil containment systems and spill response procedures. Plans are site specific, but each must address the following:

- ✓ Operating procedures that prevent oil spills
- ✓ Control measures installed to prevent a spill from reaching the environment
- ✓ Countermeasures to contain, clean up, and mitigate the effects of an oil spill that reaches the environment

Who needs an SPCC plan?

A marina needs to develop a SPCC plan if it:

- ✓ Has a total aboveground petroleum storage capacity greater than 1,320 gallons. (Note: containers less than 55 gallons and permanently closed storage tanks are exempt from the total.)
- ✓ Has a total underground petroleum storage capacity greater than 42,000 gallons.
- ✓ Is located where there is a reasonable expectation of a discharge into or upon the navigable waters of the United States or adjoining shorelines.

Are SPCC plans required by law?

Yes, federal regulation (40 CFR 112) requires facilities that store oil in certain volumes to prepare and implement a SPCC plan. The law is enforced by the U.S. Environmental Protection Agency (EPA). Visit www.epa.gov/emergencies/content/spcc for up-to-date information.

Does the law apply to vegetable oil, transformer oil, and other nonpetroleum-based oils?
Yes. Oil is defined in 40 CFR 112.2 as oil of any kind or in any form, including petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredge spoil. This definition has been interpreted to include vegetable oil, mineral oil, transformer oil, and others.

Can I prepare my own SPCC plan?

Any facility operator may draft a SPCC plan. The template in this appendix can be used as a guide.

Facilities that meet specific criteria can certify their own plan. To self-certify, facilities must:

1. Have 10,000 gallons or less in total aboveground oil storage capacity; and
2. Not have had:
   a. A single discharge of oil into navigable waters exceeding 1,000 gallons; or
   b. Two discharges of oil into navigable waters exceeding 42 gallons each within any 12-month period in the three years prior to the SPCC plan certification date, or since becoming subject to the law if in operation for less than three years

Facilities that do not meet both criteria must have a professional engineer review and certify their plan.

Who do I give the SPCC plan to?

SPCC plans do not have to be filed with EPA, but a copy must be available for on-site review by the regional administrator during normal working hours. Facilities manned for at least four hours per day

should keep a copy of the plan on-site. If the facility is not manned, the plan should be filed at the nearest field office.

SPCC plans must also be submitted to EPA Region 5 if there is a single spill greater than 1,000 gallons or two discharges of 42 gallons or more within any 12-month period at the facility.

How often does the SPCC plan need to be reviewed?

The facility owner or operator must review the plan at least every five years. These reviews must be documented.

When do I have to update the SPCC plan?

Federal law requires the owner or operator to amend the plan whenever there is a change in facility design, construction, operation, or maintenance that affects the facility's potential to discharge oil. Amendments must be fully implemented no more than six months after the change occurs. All amendments must be certified by a registered professional engineer.

Spill Prevention, Control, And Countermeasure (SPCC) Plan Template

Amended from Maryland Clean Marina Program template

This template is provided as a guidance tool. Use of this template does not relieve users of their responsibility to comply with 40 CFR §112 in its entirety. By signing and self-certifying this plan below, I acknowledge that the Illinois Clean Marina Program is not responsible or liable for any of my actions or for compliance with the rules mentioned herein. In addition, I agree to release and hold harmless the Illinois Clean Marina Program from any liability in the event of fines, penalties, or prosecution by the Illinois Environmental Protection Agency.

Marina name: _____

Address:_____

_____

Contact name:_____

Phone:_____

Fax:_____

Email:_____

Certification:
I hereby certify that I have examined the facility, and, being familiar with the provisions of 40 CFR §112, attest that this SPCC plan has been prepared in accordance with good engineering practices.

This plan has been certified by:
Name of engineer/firm:_____

Address:_____

_____

_____

Date of certification: _____ *Engineer's Seal*

Self-Certification Statement

Marina name: _____

Address:_____

_____

Contact name:_____

Phone:_____

Fax:_____

Email:_____

Self-certification:
I hereby certify that I have examined the facility, and, being familiar with the provisions of 40 CFR §112, attest that this SPCC plan has been prepared in accordance with accepted and sound industry practices and standards and meets the requirements of 40 CFR §112.3 and §112.6

The facility described herein is qualified to self-certify this plan in lieu of using a professional engineer, and is opting to do so. This facility meets the following qualification criteria under §112.3(g)(1):

1. The aggregate aboveground oil storage capacity of the facility is 10,000 gallons or less; and
2. The facility has had no single discharge exceeding 1,000 gallons and no two discharges each exceeding 42 gallons within any 12-month period in the three years prior to the SPCC plan self-certification date, or since becoming subject to 40 CFR §112 if the facility has been in operation for less than three years (not including oil discharges that are the result of natural disasters, acts of war, or terrorism).
3. There is no individual oil storage container at the facility with an aboveground capacity greater than 5,000 gallons.

In self-certifying this plan I also attest that:

1. I am familiar with the requirements of 40 CFR §112;
2. I have visited and examined the facility;
3. The plan has been prepared in accordance with accepted and sound industry practices and standards, and within the requirements of 40 CFR §112.6;
4. Procedures for required inspections and testing have been established;
5. The plan is being fully implemented;
6. The facility meets the qualification criteria set forth under §112.3(g);
7. The plan does not deviate from any requirement of this part as allowed by § 112.7(a)(2) and §112.7(d), except as provided in paragraph (c) of this section; and
8. The plan and individual(s) responsible for implementing the plan have the full approval of management, and the facility owner or operator has committed the necessary resources to fully implement the plan.

This plan has been self-certified by:

Name: _____

Title: _____

Address: _____

Date of certification: _____

Facility Description

Acres of land:_____

Facilities and equipment:
Place an X beside all that apply

____wet slips, how many? _____
____dry slips, how many? _____
____maintenance buildings, how many? _____
____ships store
____restrooms
____laundry facilities
____offices
____pavilion
____picnic area
____pump-out station
____commercial fuel dock
____non-commercial fuel pump
____travel lift
____hydraulic trailer
____fork lift
____other structures and equipment. Please list:_____

Services:
Place an X beside all that apply

____general maintenance
_____commissioning
_____winterization
_____pressure washing
_____cleaning and waxing
_____engine repair/tuning
_____propeller repairs
_____oil changes
_____parts cleaning
_____painting
_____blasting
____sanding
____canvas
_____rigging
_____fiberglass
_____blister repair
_____carpentry
_____air conditioning repair and service
_____refrigeration
_____electrical
_____plumbing
____other services. Please list_____

Facility Description

Acres of land:_____

Facilities and equipment:
Place an X beside all that apply

____wet slips, how many? _____
____dry slips, how many? _____
____maintenance buildings, how many? _____
____ships store
____restrooms
____laundry facilities
____offices
____pavilion
____picnic area
____pump-out station
____commercial fuel dock
____non-commercial fuel pump
____travel lift
____hydraulic trailer
____fork lift
____other structures and equipment. Please list:_____

Services:
Place an X beside all that apply

____general maintenance
_____commissioning
_____winterization
_____pressure washing
_____cleaning and waxing
_____engine repair/tuning
_____propeller repairs
_____oil changes
_____parts cleaning
_____painting
_____blasting
____sanding
_____canvas
_____rigging
_____fiberglass
_____blister repair
_____carpentry
_____air conditioning repair and service
_____refrigeration
_____electrical
_____plumbing
____other services. Please list_____

Fixed storage
List capacity and contents of each storage container. For example, "One 6,000-gallon aboveground tank containing diesel fuel." Be sure to include diesel, gasoline, waste oil, heating oil, kerosene, paint thinner, and other solvents

_____

_____

_____

_____

Non-fixed storage
List capacity and contents of each storage container. For example, "One 55-gallon drum for recycled oil." Be sure to indicate what the container is used for.

_____

_____

_____

_____

The combined quantity of the materials listed above: _____ gallons

Oil Spill History

Place an X on the appropriate line.

_____There has never been a significant spill at the above named facility.

_____There have been one or more significant spills at the above named facility. Details of such spill(s) are described below.

For each spill that occurred, supply the following information:

- Type and amount of oil spilled
- Location, date, and time of spill(s)
- Watercourse affected
- Description of physical damage
- Cost of damage
- Cost of clean-up
- Cause of spill
- Action taken to prevent recurrence

Potential Spill Volumes and Rates

Fill in all applicable blanks. Be prepared to show documentation of flow rates. Your fuel vendor and the manufacturer of your storage and dispensing equipment should be able to provide this documentation.

Potential Event	Volume Released	Spill Rate
Complete failure of a full tank*	____gallons	Instantaneous
Partial failure of a full tank*	1 to____gallons	Instantaneous
Tank overflow**	1 to____gallons	Up to ____ gallons per minute
Leaking during unloading***	Up to____gallons	Up to ____ gallons per minute
Pipe failure****	Up to____gallons	Up to ____ gallons per minute
Leaking pipe or valve****	Several ounces to____gallons	Up to ____ gallons per minute
Fueling operations****	Several ounces to____gallons	Up to ____ gallons per minute
Oil and grease	Several ounces to____quarts	Spotting

*Volume of largest tank
**Calculate using the rate at which fuel is dispensed from the delivery truck into your tank(s)
***Calculate using the rate at which petroleum would be withdrawn from the tank if it should have to be emptied
****Calculate based on the specifications of your equipment.

Spill Prevention and Control

Spill prevention

Provide specific descriptions of containment facilities and practices. Include descriptions of double-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. Also, describe how and when employees are trained in proper handling procedures, spill prevention, and response procedures.

_____

_____

_____

_____

Description of where a spill would go

For each potential spill source, describe where petroleum would flow in the event of a spill. For example, "The 6,000-gallon diesel tank has a pre-manufactured secondary containment system capable of holding 110 percent of the total volume of the tank," and "A spill from engine repair would be contained inside the shop building and quickly cleaned up with oil absorbents." Incorporate your site map as a reference. (See instructions in the SPCC Plan Appendices.)

_____

_____

_____

_____

Describe actions that would be taken in the event of a spill
Identify what equipment would be deployed, by whom, and in what situation. Also, include phone numbers for response agencies, such as the U.S. Coast Guard, fire department, and spill response contractors. A copy of your spill response plan may be attached as an appendix to this SPCC plan in lieu of completing this section.

Facility Inspections

Regular inspections
List facilities and the frequency with which they are inspected. For example, "The fuel pumps are inspected daily," and "The materials storage area is inspected monthly." Name the person who is responsible for implementing preventative maintenance programs, overseeing on-site inspections, coordinating employee trainings, maintaining records, updating the plan as necessary, and ensuring that reports are submitted to the proper authorities.

Annual inspections
Include a description of annual comprehensive inspections. For example, "A site inspection is also conducted annually by appropriate, responsible personnel to verify that the description of potential pollutant sources is accurate, that the map reflects current site conditions, and that the controls to reduce pollutants identified in this plan are being implemented and are adequate. This annual inspection will be conducted above and beyond the routine inspections focusing on designated equipment and areas where potential sources are located."

Record Keeping

Describe record keeping procedures. For example, "Record keeping procedures consist of maintaining all records for a minimum of three years. The following items will be kept on file: a current SPCC plan, internal site reviews, training records, and documentation of any spills or maintenance conducted in regards to these sites." Maintenance inspection, employee training, and record keeping logs are included in this template for your use.

_____

_____

_____

_____

_____

Marina Management Approval

I certify that I have personally examined and am familiar with the information submitted in this document and that, based on my inquiry of those individuals responsible for obtaining this information, the information submitted is true, accurate, and complete.

_____	_____
Signature	Title
_____	_____
Printed name	Date

Maintenance Inspections
Use this table to record inspections.

Maintenance Coordinator: _____

Facility Inspected	**Date of Inspection**	**Name of Inspector**	**Result Pass/Fail**	**Comments**
Oil recycling area	*4/27/09*	*Eric Rose*	*Pass*	*No evidence of leakage*

Employee Training

Use this table to record spill prevention and response training.

Employee Training Coordinator: _____

Name of Employee	Date of Training	Type of Training/Topics Addressed
Carl Bishop	*3/26/09*	*Boom deployment*

Record Keeping of Incidental Spills

Record Keeper:_____

Incident No.	Type of Incident	Date of Occurrence	How it was Cleaned Up
1	*Leaky connection on fuel pump*	*7/21/09*	*Diesel soaked up with oil-absorbent pad. Called U.S. Petroleum to fix fuel dispenser.*

SPCC Plan Appendices

Site map

Include a site map as Appendix A to this plan. You may attach an existing site map or create your own. If you use an existing map, be sure that the items listed below are included.

The following instructions should guide you step-by-step. Please use a straight edge rule while creating the sketch.

- Orient the sketch so it is looking down on your property.
- Draw and label all roadways surrounding your marina property.
- Draw and label all facilities within your marina as close to actual proportions as possible.
- Draw an arrow indicating north.
- Draw an arrow(s) pointing in the direction of the downhill flow of water when it rains.
- Draw the locations of any inlets or catch basins that presently exist on your property.
- Draw the locations and general layout of all boat slips associated with your marina.
- Label the river or waterway adjacent to your marina.
- Draw and label all methods of entry to the waterway, such as boat ramps and lift well.
- Draw and label boat washing areas.
- Draw and label the locations of all fuel containment facilities.
- Draw and label the locations of all in-place spill prevention, control, and countermeasure devices.
- Draw and label the locations of all proposed spill prevention, control, and countermeasure devices.

Other attachments

List any additional information to be attached as Appendix B, C, D, etc. Label and staple the attachments to the end of this SPCC plan.

Appendix A: Site map_____
Appendix B: _____
Appendix C: _____
Appendix D: _____
Appendix E: _____
Appendix F: _____

Appendix II

Emergency Response Plans

Establish a single binder for all of your emergency response plans. Give it a bright cover and spine so that it stands out. Make sure each employee knows where it is and what type of information it contains.

Plans should:

- ✓ Include a laminated map of the facility showing valves, pipes, tanks, structures, roads, hydrants, docks, power and fuel shut-offs, hazardous material storage locations, and telephones
- ✓ Provide a list of emergency phone numbers:
  - Fire department
  - Police department
  - Marin owner
  - Neighboring marinas with emergency response equipment
  - Local hospital
  - Illinois Emergency Management Agency
  - Local Emergency Planning Committee
  - U.S. Coast Guard National Response Center
  - Illinois Poison Center
  - Spill response contractors
- ✓ Describe the type, amount, and location of hazardous and potentially hazardous materials on-site
- ✓ Describe the type of response equipment available on-site and where it is stored
- ✓ Provide a list of equipment and services available from neighboring marinas and spill response firms
- ✓ Identify what actions should be taken during an emergency and what equipment should be used
- ✓ Describe what to do in the case of severe weather, such as securing dumpsters, objects that could potentially blow or wash away, and waterside sewage pump-out and dump stations
- ✓ Include written fire safety procedures
- ✓ Identify who is responsible for specific actions
- ✓ Explain how the equipment should be used and how to dispose of waste and used equipment
- ✓ Indicate when additional resources should be called for assistance
- ✓ Designate a single staff member as the official spokesperson for the facility
- ✓ Describe each agency's jurisdiction

Florida Sea Grant has developed the "Panic Preventer File for Marinas" as a model that marinas can adapt to their particular needs. To order, visit ifasbooks.ifas.ufl.edu/p-98-panic-preventer-file-generic-model-for-marinas.aspx or view it online at nsgl.gso.uri.edu/flsgp/flsgph07001.pdf

Sample Emergency Response Procedure Manual from Washburn Marina

The following emergency response plan comes from Washburn Marina in Washburn, Wisconsin. Use it as a guide when developing a plan for your marina.

EMERGENCY RESPONSE PROCEDURE MANUAL

EMERGENCY RESPONSE PROCEDURE MANUAL

TABLE OF CONTENTS

- **Introduction**
- **Emergency Telephone Numbers**
- **Emergency Response Equipment**
- **The Marina Piers Description**
- **Fire Emergency Plan**
- **The Fuel Dock Description**
- **Fuel Dock Fire Emergency Plan**
- **Fuel Dock Spill Emergency Plan**
- **General Guidelines for Fuel Spill**
- **General Response for All Emergencies**
- **Automobile Accident**
- **Boat Fire Away from Marina/Piers**
- **Boating Accident**
- **Bomb Threat**
- **Downed Power Lines/Natural Gas Leak**
- **Drowning Report**
- **Holdup/Robbery**
- **Medical Emergency**
- **Missing Person**
- **Overdue Boater**
- **Poisoning Report**
- **Power Outage**
- **Slip and Fall Incident**
- **Wild Fire**

INTRODUCTION

The Washburn Marina is located at 1 Marina Drive, in the City of Washburn, Wisconsin. The Washburn Marina operates a 138-slip municipal harbor on Chequamegon Bay, Lake Superior, with 10.5 acres upland and 6.9 acres of water area within the harbor. Access to the marina is from Wisconsin Highway 13 from the north or south, via Central Avenue.

The marina harbor is in one basin with three primary piers. Pier 1, the southeastern most pier, is the largest with 44 slips ranging from 14' by 24' in size to 17' by 50'. Pier 2, the central pier, has 44 slips ranging from 15' by 32' in size to 15' by 36'. Pier 3, the pier located on the northwest side of the harbor, has 50 slips ranging from 12' by 24' in size to 13' by 28'. On the far northwest bank of the marina is a public launch ramp, with a concrete approach. It is 39 feet in width, with a concrete bed that goes out 60 feet. On the far southeastern side of the marina is the fuel dock, 90' x 12', and deep well, 90' x 35'. The average depth of the marina is between 6' and 10'.

There is one primary building on the property; it is 140' x 80'. It houses the marina's Ship Store, the service department, administrative offices, a boater's lounge and private and public restroom/shower facility. The Ship Store is open to the public and carries a wide array of marine supplies as well as personal items. Within the marina's service department, technicians provide mechanical, electrical, fiberglass, and general boat maintenance repair.

EMERGENCY TELEPHONE NUMBERS

ALL EMERGENCIES CALL 911 FIRST

Staff Emergency Numbers:

Office Numbers:

Local Emergency:

Regional:

National:

MARINE POLLUTION CALL NUMBER 800 424 8802

EMERGENCY RESPONSE EQUIPMENT

The Washburn Marina owns the necessary equipment to contain a small hazardous materials spill or other similar accident. All spills requiring special boom materials should be immediately reported to the U.S. Coast Guard Station, Bayfield, and the Wisconsin Department of Natural Resources (WDNR).

Below is a list of equipment located at the Washburn Marina. The majority of the equipment is located in or near the service bay, with the exception of the containment booms and sorbent pads, which are stored in a dock box on the fuel dock.

Containment Booms:
8 qty – 5" diameter x 120' length

Sorbent Materials:
10 qty – 17" x 17" pillows
95 qty – 17" x 19" mats

Washburn Marina Service Department Equipment:

(1) Evacuator pump located in the tool room
(1) Pump located in the tool room

THE MARINA PIERS DESCRIPTION

Description of Piers 1, 2 and 3

The piers at the Washburn Marina are made of an aluminum trussed floating dock system, stabilized by metal piles. The decking on all piers is treated lumber. The floatation system is made up of black, sealed, polypropylene "tubs" arranged under and affixed to the aluminum dock structure.

All boats are moored in a southeast/northwest direction, with the exception of those few tied along the southeast inside breakwater. The primary piers are 8' feet in width, with fingers that are 4' in width. All piers are connected to the bulkhead by permanently affixed ramps. The piers have the following lengths and capacity:

Pier 1: 352' in length
4 slips, 14' x 24'
12 slips, 14' x 32'
4 slips, 15' x 36'
1 slip, 15' x 40'
1 slip, 17' x 40'
12 slips, 17' x 42'
8 slips, 17' x 46'
2 slips, 17' x 50'

Pier 2: 352' in length
22 slips, 15' x 32'
22 slips, 15' x 36'

Pier 3: 347' in length
12 slips, 12' x 24'
2 slips, 12' x 28'
36 slips, 13' x 28'

Depending on the level of the lake, the typical water depth in the marina is 6' to 10'. The shallowest locations are in the northwestern side of the harbor; the deepest are at the entrance and the deep well/fuel dock area.

Electrical Power

Electrical power is controlled from one main panel located in the gazebo area at the head of Pier 2. The power to all piers in the harbor can be shut off from this central location.

Evacuation and Fire Fighting Equipment

There is a single evacuation route by foot for all piers at the Washburn Marina that is via the ramps at the bulkhead. In the event that this route is not available during an emergency requiring evacuation, departure by a vessel located at a minimum of 100' from the incident is recommended. Boats within the 100' area should not have their engines started to be moved.

Fire extinguishers are located at the mid-point of each pier. The land-based fire hydrants are located on the northeast side of the building, outside the ship store, and at the head of the public launch ramp.

MARINA PIERS

FIRE EMERGENCY PLAN

<u>INCLUDES BOAT FIRES AT THE PIER</u>

1. **PERSON DETECTING THE FIRE ANNOUNCES "I AM IN CHARGE."**
   Immediately assign a particular person to call 911.

2. **CALL THE FIRE DEPARTMENT – DIAL 911**

   Give the following information:
   "This is<u>___your name____</u>at the WASHBURN MARINA, 1 Marina Drive, Washburn, Wisconsin. The marina telephone number is 715 373 5050. We have a BOAT FIRE ON A PIER. (Identify which pier.)

   Describe the size of the boat and type: power or sail.

   Describe the severity of the fire and if other boats are near the fire.

3. PERSON IN CHARGE

Notify all staff via personal radio: **"We have a fire on Pier___ Slip ___**."
Assign one person—staff first, customer if needed, to clear the pier of all persons.

4. LIFE SAFETY

A. Remove any injured persons away from the fire area IF THERE IS ANY FURTHER DANGER TO THEM FROM THE FIRE.
B. Shut off electrical power.
C. Evacuate boat owners and guests from affected pier.
D. Assign a staff member to man the driveway to direct incoming fire crews to appropriate area. E. Secure any burning boats to the dock – ONLY IF THIS CAN BE DONE SAFELY.
F. Remove adjacent boats – ONLY IF THIS CAN BE DONE SAFELY. Do not start boats that are immediately adjacent to the burning boat. Boat keys to some vessels are located in the lock box in the storage closet between the Ship Store and the Service Bay.

5. ENVIRONMENTAL SAFETY

A. Call the National Spill Number: 800 424 8802.
B. Locate fuel and oil spill containment and clean-up equipment. Deliver to the fire site.
C. Use fuel and oil containment equipment (booms) to contain any spilled fuel – ONLY IF THIS CAN BE DONE SAFELY.
D. If a major spill event is taking place, boom the entrance to the marina.

6. FOLLOW UP

Once the area and event are properly secured, perform follow-up procedures:

A. Complete a "Boat on Fire" form.
B. Contact the general manager if he or she is not on site.

THE FUEL DOCK DESCRIPTION

Description

The Fuel Dock at the Washburn Marina is a 90-foot pier connected to the bulkhead on the southeast end of the harbor. The 12-foot-wide pier is constructed on a rock-filled crib constructed of treated timbers. The cap is cement.

The fuel dock is supplied by two above-ground tanks located at the head of the dock. Both tanks have a 2000 gallon capacity; one is for unleaded gasoline, the other for diesel. Both tanks are double lined construction. The interior tank is cylindrical and the exterior cubed. The dispenser is a single station located on the fuel dock, with two hoses.

The sewage holding tank pump-out system is also located on the fuel dock. The system pumps directly into the Washburn City sewer system. It is an electric vacuum pump system.

Electrical Power and Emergency SHUT-OFF

Electrical power is controlled by the panel located at the bulkhead of the fuel dock.

There is an emergency fuel pump shut-off located on the light post at the head of the fuel dock. It is colored yellow with a red button. The emergency electrical shut-off for the fuel tanks is located there as well.

In the event of an emergency, personnel should first activate the emergency pump shut-off and then proceed to close the gate valves to prevent any gravity flow of fuel.

Fire Fighting Equipment and Emergency Spill Equipment

The Fuel Dock is supplied with a fire extinguisher located on the dock. The emergency spill equipment is located in the dock box at the head of the fuel dock.

FUEL DOCK
<u>FIRE EMERGENCY PLAN</u>

1. **PERSON DETECTING THE FIRE ANNOUNCES "I AM IN CHARGE."**
   Immediately assign a particular person to call 911.

2. **CALL THE FIRE DEPARTMENT – DIAL 911**

   Give the following information:

   "This is <u>your name</u> at the WASHBURN MARINA, 1 Marina Drive, Washburn, Wisconsin.
   The marina telephone number is 715 373 5050. We have a FIRE ON THE FUEL DOCK.

   Describe the size of the boat and type: power or sail.

   Describe the severity of the fire and if other boats are near the fire.

3. **PERSON IN CHARGE**

   Notify all staff via personal radio: **"We have a fire on THE FUEL DOCK."**
   Assign one person—staff first, customer if needed, to clear the ENTIRE AREA of all persons.

4. **LIFE SAFETY**

   a. Remove any injured persons away from the fire area IF THERE IS ANY FURTHER DANGER TO THEM FROM THE FIRE.
   b. Shut off the fuel pump via emergency shut-off.
   c. Shut off electrical power.
   d. Evacuate boat owners and guests from the entire area.
   e. Assign a staff member to man the driveway to direct incoming fire crews to appropriate area.
   f. Secure any burning boats to the dock – ONLY IF THIS CAN BE DONE SAFELY.
   g. Remove adjacent boats – ONLY IF THIS CAN BE DONE SAFELY. Do not start boats that are immediately adjacent to the burning boat. Boat keys to some vessels are located in the lock box in the storage closet between the Ship Store and the Service Bay.
   h. Move the Travelift to the back parking lot area.

5. **ENVIRONMENTAL SAFETY**

   a. Call the National Spill Number: 800 424 8802.
   b. Locate fuel and oil spill containment and clean-up equipment. Deliver to the fire site.
   c. Use fuel and oil containment equipment (booms) to contain any spilled fuel – ONLY IF THIS CAN BE DONE SAFELY.
   d. If a major spill event is taking place, boom the entrance to the marina.

6. **FOLLOW UP**

   Once the area and event are properly secured, perform follow-up procedures:

   a. Complete a "Fire at or on Dock" form.
   b. Contact the general manager if he or she is not on site.

FUEL DOCK
SPILL EMERGENCY PLAN

1. **PERSON DETECTING THE SPILL ANNOUNCES "I AM IN CHARGE."**
   Immediately assign a particular person to call 911.

2. **CALL THE FIRE DEPARTMENT – DIAL 911**
   AND
   ALSO THE NATIONAL MARINE POLLUTION HOTLINE – 800 424 8802

   Give the following information:

   "This is ___your name__ at the WASHBURN MARINA, 1 Marina Drive, Washburn, Wisconsin. The marina telephone number is 715 373 5050. We have a SPILL ON THE FUEL DOCK.

   Describe the size of the boat and type: power or sail, if involved.

   Describe the severity of the spill and if other boats are nearby.

3. **PERSON IN CHARGE**

   Notify all staff via personal radio: **"We have a spill on THE FUEL DOCK."**
   Assign one person—staff first, customer if needed, to clear the ENTIRE AREA of all persons.

4. **LIFE SAFETY**

   a. Remove any boats away from the spill area if possible.
   b. Shut off the fuel pump via emergency shut-off.
   c. Shut off electrical power.
   d. Evacuate boat owners and guests from the entire area.
   e. Assign a staff member to man the driveway to direct incoming fire crews to appropriate area.
   f. Secure any AFFECTed boats to the dock – ONLY IF THIS CAN BE DONE SAFELY.
   g. Remove adjacent boats – ONLY IF THIS CAN BE DONE SAFELY. Do not start boats that are immediately adjacent to a spill source or to a burning boat. Boat keys to some vessels are located in the lock box in the storage closet between the Ship Store and the service bay.

5. **ENVIRONMENTAL SAFETY:**

   a. Call the National Spill Number: 800 424 8802.
   b. Locate fuel and oil spill containment and clean-up equipment in the dock box on the fuel dock.
   c. Use fuel and oil containment equipment (booms) to contain any spilled fuel – ONLY IF THIS CAN BE DONE SAFELY
   d. If a major spill event is taking place, boom the entrance to the marina.

7. **FOLLOW UP**

   Once the area and event are properly secured, perform follow-up procedures:

   a. Complete a "Fuel Spill" form.
   b. Contact the general manager if he or she is not on site.

GENERAL GUIDELINES FOR FUEL SPILLS:

Gasoline

Quantity under 1 quart

1) Allow to evaporate.
2) Shut off electrical power to the nearest areas.
3) Guard the area until safe from fumes and fire.

Quantity over 1 quart

1) Deploy marina spill boom, add pillows as appropriate.
* Booms and pillows are located in locker in at head of fuel dock.
2) Shut off electrical power to the nearest areas.
3) Guard the area until cleared of fumes and contaminated materials.
4) Report details to local U.S. Coast Guard at 715 779 3950 and the National Marine Pollution hotline at 800 424 8802.

Diesel:

Any quantity that produces a "sheen" over 1 sq. yard

1) Deploy marina spill boom, add pillows as appropriate.
* Booms and pillows are located in locker at head of fuel dock.
2) Exclude boats and swimmers from containment zone.
3) Report details to local U.S. Coast Guard at 715 779 3950 and the National Marine Pollution hotline at 800 424 8802.

For larger quantities than can be contained in the marina's spill boom:
Contact the U.S. Coast Guard immediately at 715 779 3950 and the National Marine Pollution hotline at 800 424 8802.

GENERAL RESPONSE FOR
ALL EMERGENCIES

PERSON FIRST DETECTING ACCIDENT OR FIRST NOTIFIED OF INCIDENT

Determine severity and if authorities need to be immediately contacted.

IF AUTHORITIES ARE REQUIRED

1. **Person in charge should announce that he/she is "in charge."**
2. **Appoint one person to call authorities and instruct that person to direct emergency crews to the appropriate area when they arrive.**
3. **Clear the area of bystanders.**
4. **Via personal radio, contact staff to assist as necessary.**
5. **Appoint one person to obtain the proper "Emergency Response Form" and complete as appropriate or possible.**
6. **Stay on site until authorities arrive.**

DO NOT MOVE OR ASSIST A VICTIM THAT MAY BE INJURED.

IF AUTHORITIES ARE NOT REQUIRED

1. **Complete the proper "Emergency Response Form" as soon as reasonably possible.**
2. **Provide affected party with a copy of the completed form.**
3. **Issue completed form to the general manager to review and file.**

AUTOMOBILE ACCIDENT

IF THERE ARE ANY INJURIES OR DAMAGE TO PROPERTY CALL 911 IMMEDIATELY.

EMERGENCY SITUATION

1. The staff member first contacted is in charge and should call 911 immediately.
2. Provide the operator with the pertinent information.
3. Go to the scene of the accident or appoint another staff member to do so.
4. Clear the area of spectators.
5. If there are injured victims, do not move a victim. Emergency crews will do so.
6. Stand watch for emergency response.
7. Assist as necessary.
8. Complete "Automobile Accident Report" form and submit to the general manager.

NON-EMERGENCY SITUATION

1. The staff member first contacted is in charge and should remain calm and unbiased to diffuse any possible tension or confusion that may ensue.
2. As soon as reasonably possible complete "Automobile Accident Report" form and submit to the general manager.
3. Attempt to disperse the public quickly to lessen the appearance of a "scene."

BOAT FIRE AWAY FROM THE PIERS & MARINA

If you are contacted by VHF radio – it is most likely that the US Coast Guard Bayfield Station will take over. Stand aside for assistance if requested only.

If you are contacted by telephone, obtain the information required on the "Boat on Fire Away from Piers & Marina" form and relay it to the U.S. Coast Guard Bayfield Station at 715 779 3950 or VHF Ch. 16.

Complete the "Boat on Fire Away from Piers & Marina Report" form and submit it to the general manager.

BOATING ACCIDENT

IF THERE ARE ANY INJURIES OR DAMAGE TO PROPERTY CALL 911 IMMEDIATELY

EMERGENCY SITUATION:

1. The staff member first contacted is in charge and should call 911 immediately, followed by a call to U.S. Coast Guard, Bayfield 715 779-3950.
2. Provide the operator/USCG with the pertinent information.
3. If possible, go to the scene of the accident or appoint another staff member to do so.
4. If near shore, clear the area of spectators.
5. If there are injured victims, do not move a victim. Emergency crews will do so.
6. Stand watch for emergency response.
7. Assist as necessary.
8. Complete a "Boating Accident Report" form and submit it to the general manager.

NON-EMERGENCY SITUATION:

1. The staff member first contacted is in charge and should remain calm and unbiased to diffuse any possible tension or confusion that may ensue.
2. As soon as reasonably possible complete a "Boating Accident Report" form and submit it to the general manager.
3. Attempt to disperse the public quickly to lessen the appearance of a "scene."

BOMB THREAT

ACTION TO TAKE IMMEDIATELY

1. Evacuate the threatened area and do not allow anyone to re-enter once the area is cleared.
2. The staff member first contacted is in charge and should call 911 immediately. Provide operator with all necessary information.
3. Stand watch for emergency response.
4. As soon as reasonably possible complete a "Bomb Threat Report" form and submit to the general manager.

ACTION TO TAKE IF TIME ALLOWS WHILE TALKING TO PERSON MAKING THE THREAT

Ask the caller the following questions and write down the answers for future reference:

1. When is it going to explode?
2. Where is the bomb right now?
3. What kind of bomb is it?
4. What does the bomb look like?
5. Why did you place the bomb in this location?

Record the exact words of the caller.

DOWNED POWER LINES & NATURAL GAS LEAK

CALL 911 and
XCEL ENERGY – 800-895-1999

ALL DOWNED POWER LINES AND GAS LEAKS SHOULD BE CONSIDERED SERIOUS. POWER LINES SHOULD BE PRESUMED ENERGIZED.

1. Evacuate the threatened area and do not allow anyone to re-enter once the area is cleared.
2. The staff member first contacted is in charge and should call 911 and Xcel Energy immediately. Provide operator with all necessary information.
3. Stand watch for emergency response.
4. If possible, ribbon off generous area around any downed wires or suspected leak area.
5. As soon as reasonably possible complete a "Downed Power Lines & Natural Gas Leak Report" form and submit it to the general manager.

DROWNING REPORT

1. The staff member first contacted is in charge and should call 911 immediately. Provide operator with all necessary information.
2. Stand watch for emergency response.
3. Contact additional staff to clear area of bystanders.
4. Attempt rescue only if considered safe for rescuer and proper safety equipment is used. Bring floatation device if rescue is attempted.
5. Assist emergency response as necessary.
6. As soon as reasonably possible complete "Drowning Report" form and submit it to the general manager.

HOLDUP/ROBBERY

Our Organization's Policy Regarding Robbery

"It is this marina's policy to comply with any demands made by a person attempting to rob this business or its staff. No attempts are to be made to safeguard property or money if there is any risk of physical harm to anyone; safeguarding life is the primary concern."

1. The staff member first contacted is in charge and should call 911 immediately. Provide operator with all necessary information.
2. Stand watch for emergency response.
3. Contact additional staff to clear area of bystanders.
4. As soon as reasonably possible complete "Holdup/Robbery Report" form to be submitted to the authorities and to the general manager.
5. Assist emergency response as necessary.

MEDICAL EMERGENCY

1. The staff member first contacted is in charge and should call 911 immediately. Provide operator with all necessary information.
2. Stand watch for emergency response.
3. Contact additional staff to clear area of bystanders.
4. If immediate assistance by a trained person is available, provide assistance. Do not move victim unless absolutely necessary. A defibrillator is available on the northwest side of the building, near the entrance to the showers. By removing this equipment from its container, the authorities will be automatically notified to come to the scene. Use only if you are familiar with its use and the circumstances that would require its use.
5. As soon as reasonably possible complete "Medical Emergency Report" form to be submitted to the authorities and the general manager.
6. Assist emergency response as necessary.

MISSING PERSONS

1. The staff member contacted should immediately complete the "Missing Persons Report" form based on the information provided by the contact person.
2. Upon determination of severity of the situation, contact the proper parties, including police or emergency response personnel, if necessary.
3. If no immediate action is taken, submit completed form to the general manager or manager on duty.
4. Follow up within 24 hours with person initially filing report. If no update or change has occurred, continue follow-up every 24 hours until the situation is resolved or the authorities are brought in to take over the case. Continue to document follow-up calls.

OVERDUE BOATER

1. The staff member contacted should immediately complete the "Overdue Boater Report" form based on the information provided by the contact person.
2. Upon determination of severity of the situation, contact the proper parties, including police or emergency response personnel, if necessary.
3. If no immediate action is taken, submit completed form to the general manager or manager on duty.
4. Follow up within 24 hours with person initially filing report. If no update or change has occurred, continue follow-up every 24 hours until the situation is resolved or the authorities are brought in to take over the case. Continue to document follow-up calls.

POISONING REPORT

1. The staff member first contacted is in charge and should call 911 immediately. Provide operator with all necessary information.
2. Stand watch for emergency response.
3. Contact additional staff to clear area of bystanders.
4. As soon as reasonably possible complete "Poisoning Report" form to be submitted to the authorities and the general manager.
5. Assist emergency response as necessary.

POWER OUTAGE

Do Not Call 911

Contact Xcel Energy: 800-895-1999

1. Shut off all power switches, lights, and especially motors such as refrigerators, air conditioning units, heating units, air compressors, fuel pumps, and sewage lift station. Prepare signs or use preprepared signs to indicate that the Ship Store and restrooms are closed due to power outage and will be available as soon as power is restored. Post on each door.
2. Remain on site until power is restored or normal business hours are over.
3. Once power is restored, remove signs and turn power back on to those items turned off.

SLIP AND FALL INCIDENT

All slip and fall incidents are considered serious and should be treated as such. If a medical emergency exists due to a slip and fall, follow the guidelines for a medical emergency.

Non-emergency response:

1. The staff member contacted should immediately complete the "Slip and Fall Incident Report" form based on the information given by the person filing the report.
2. Upon determination of severity of the situation, contact the proper parties, including police or emergency response personnel, if necessary.
3. Submit completed form to the general manager. Provide a copy to the person filing report if requested.

Emergency response:

Refer to page 19 for a medical emergency and follow those procedures.

WILD FIRE

1. The staff member first contacted is in charge and should call 911 immediately. Provide operator with all necessary information.
2. Stand watch for emergency response.
3. Contact additional staff to clear area of bystanders.
4. Consider fuel cut-off, if appropriate.
5. Consider electric service cut-off, if appropriate.
6. Consider moving vehicles, boats, and other property from hazard if safe to do so.
7. As soon as reasonably possible complete the "Wild Fire Report" form and submit it to the authorities and the general manager.

Appendix III

Stormwater Pollution Prevention Plan

The following sample Stormwater Pollution Prevention Plan (SWPPP) is used as a template by the Illinois Environmental Protection Agency. It is also available at www.epa.state.il.us/water/permits/storm-water/noi-docs/elmhurst-substation-elmhurst/swppp.pdf.

Storm Water Pollution Prevention Plan

For

TSS-135 Elmhurst Substation Expansion

Elmhurst, Illinois

Prepared for:

Commonwealth Edison

Prepared by:

HBK Engineering, LLC

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Appendix: Sample SWPPP Inspection Log

1.0 Introduction

1.1 Background

The Federal Water Pollution Control Act (FWPCA), also known as the Clean Water Act (CWA), was passed in 1972 with the intent of improving the condition and ensuring the longevity of the nation's waterways. The Water Quality Act (WQA) of 1987, an amendment to the Clean Water Act, gave the EPA the authority to govern storm water runoff generated by construction sites. The EPA published in 1998 the Final Notice for General Permits for Storm Water Discharges from Construction Activities Disturbing 5 Acres or Greater (63 Federal Register 7898, February 14, 1998). As part of the general permit, guidelines were created for the development of site-specific Storm Water Pollution Prevention Plans. The intent of these plans is to instruct contractors in the prevention of sediment pollution, runoff and erosion from construction sites through the use of specific countermeasures.

1.2 Contents of the SWPPP

This Storm Water Pollution Prevention Plan (SWPPP) for Commonwealth Edison's proposed expansion of the Elmhurst Substation will provide the contractor with guidelines for compliance with the National Pollution Discharge Elimination System's General NPDES Permit for Storm Water Discharges for Construction Site Activities.

The intent of the SWPPP is to reduce the amount of pollution carried by storm water runoff from reaching nearby properties and bodies of water, including Addison Creek. Included in this SWPPP will be:

- Identification of the SWPPP Coordinator and Team, and their responsibilities.
- Description of the site of the proposed expansion of the Sub-Station.
- Identification of all nearby bodies of water to which site runoff would eventually drain.
- Identification of all local drainage areas within the site.
- Identification of potential contaminants carried by storm runoff.
- Description of storm water controls and Best Management
    - Practices (BMPs) that will be required in order to adequately reduce the levels of erosion, sediment, and pollutants carried off the site by storm water runoff.

2.0 SWPPP Coordinator and Duties

The SWPPP Coordinator is lead person responsible for ensuring that the SWPPP is carried out. This is someone who will be working at the site full-time, who is given the authority to direct all personnel on the site in matters pertaining to the SWPPP. The SWPPP Coordinator will have the following responsibilities:

- Implement the SWPPP with the help of other SWPPP designees.
- Oversee the installation and maintenance of all physical erosion barriers (structural BMPs), and ensure that all BMPs are being adhered to.
- Conduct all required SWPPP inspections, or designate an inspector.
- Implement and oversee training of all site employees.
- Identify deficiencies in the SWPPP and ensure that any necessary corrections or changes are made.
- Ensure that any construction or design changes are accounted for in the SWPPP, or that the SWPPP is changed accordingly, if necessary.

At this time, the SWPPP Coordinator and the Coordinator's support team have not been designated by the contractor.

3.0 Description of Project

3.1 Site Location

The Elmhurst Substation is bordered to the east by County Line Road and to the west by Parker Street. It is bordered to the north by the Lombard-Franklin Park
Right of Way and to the south by the Maywood Sportsman's Club.

The total disturbed area of the expansion project is approximately 3.0 acres. The existing Elmhurst substation was designed and permitted by another civil engineering consultant. This document addresses **only** the 3.0 acres of substation expansion on the south and west portion of the property. **Please note:** For the remainder of this report, any references to "**the site**" shall mean *only* that portion of the overall Elmhurst Substation property that is being submitted for permit by HBK Engineering under this plan set. References to "**the overall property**" shall mean both the existing substation and the expansion area. Please refer to the Elmhurst Substation design plans for a depiction of the area in question in relation to the overall property.

3.2 Description of the Existing Site Conditions

Currently, the expansion area to the south of the existing substation is used for equipment storage and is generally bare ground with some intermittent grass and brush. The site slopes from east to west and drains to a natural drainage ditch west of the substation. The drainage ditch drains north to an unnamed tributary of Addison Creek. The site area is adjacent to an existing pond directly south of the ComEd owned property, which is located within the flood plain. The flood plain also occupies low-lying areas to the west and north of the substation. There are no wetlands or riparian areas within the project disturbed area. The only construction in the flood plain will be the installation of a storm sewer pipe. In the existing condition, water exits the site via overland flow. The proposed detention basin will significantly lower the runoff from the site while improving water quality.

3.3 Description of Proposed Site Improvements

The proposed site improvements will consist of the installation of two SVC structures, measuring approximately 200' x 300' each.

As required by the Dupage County Stormwater Ordinance, all storm water runoff will be captured in a detention basin that meets the BMP regulations and released at a rate of 0.1 cfs per acre of land disturbed.

The detention basin will serve as a settling basin for sediment from the site. Storm water will exit the basin via a restrictor and will drain to a 10" corrugated metal pipe that leads to a backflow preventer. Storm water will be discharged from the backflow preventer to an existing storm sewer pipe that leads to an unnamed tributary of Addison Creek.

In events greater than the 100-year event, storm-water will exit the basin via an emergency overflow weir and discharge to an existing drainage ditch west of the existing substation. The drainage ditch drains to an unnamed tributary of Addison Creek.

3.4 Site Plan

The site was designed using guidelines set forth by the Dupage County Storm water ordinance and BMP manual.

The following design elements were required by the Dupage County Storm water Ordinance:

- The detention basin shall be sized such that it has sufficient volume to meet a release rate of 0.1 cfs per acre of land disturbed.
- The Pollution reducing BMPs for the site must have an average BMP rating of 2.5.
- There must be one foot of freeboard maintained in the detention basin during the 100 year storm event.

The detention basin will be located directly west of the proposed substation expansion. The basin will also function as a sediment settling basin for the site. The basin will contain native plantings to improve the water quality of the storm-water that enters the basin. Prior to entering the detention basin, storm water will also pass through an oil-water separator, which will ensure that oil does not enter the sewer in the event of a leak.

3.4 Site Plan

The site was designed using guidelines set forth by the Dupage County Storm water ordinance and BMP manual.

The following design elements were required by the Dupage County Storm water Ordinance:

- The detention basin shall be sized such that it has sufficient volume to meet a release rate of 0.1 cfs per acre of land disturbed.
- The Pollution reducing BMPs for the site must have an average BMP rating of 2.5.
- There must be one foot of freeboard maintained in the detention basin during the 100 year storm event.

The detention basin will be located directly west of the proposed substation expansion. The basin will also function as a sediment settling basin for the site. The basin will contain native plantings to improve the water quality of the storm-water that enters the basin. Prior to entering the detention basin, storm water will also pass through an oil-water separator, which will ensure that oil does not enter the sewer in the event of a leak.

4.0 Identification of Potential Storm Water Contaminants and Pathways

4.1 Potential Construction Site Storm Water Contaminants

Table 1 lists substances and materials that have the potential to be carried off by storm water runoff. Information is included detailing each material's physical properties, as well as specific information in regards to the regulated water contaminants associated with each material.

Table 1

Potential Site Storm Water Pollutants During Construction

Material Common Name	Description of Physical Characteristics	Storm Water Pollutants
Fertilizer	liquid, solid granular material	nitrogen, phosphorous
Cleaning Solvents	liquid, colorless, blue, or yellow-green	perchloroethylene, methylene, chloride, trichloroethylene, petroleum distillates
Concrete	white solid	Limestone, sand
Glue, adhesives	white or yellow liquid	polymers, epoxies
Paint	liquid, colors vary	metal oxides, stoddard solvent, talc, calcium carbonate, arsenic
Curing compounds	liquid, creamy white	Naphtha
Construction -related wastewater	liquid (water)	Eroded soil and solids, oil and grease
Hydraulic oils, electric-line oils	liquid, brown oily hydrocarbons	mineral oils
Gasoline	liquid, colorless, pale brown or pink petroleum hydrocarbon	BTEX (benzene, toluene, ethyl benzene, xylene), MTBE
Diesel Fuel	liquid, clear-blue to yellow	Petroleum distillates, oil & grease, naphthalene, xylene

Kerosene	liquid hydrocarbon, pale yellow	Coal oil, petroleum distillates
Antifreeze, coolant	liquid, green/yellow	Ethylene glycol, propylene glycol, heavy metals (copper, zinc)
Soil erosion	Solid particles, liquid-entrained	Soil, sediment

4.2 Potential Storm Water Contamination Pathways

One of the most likely contributors to storm water runoff contamination is erosion from excavated areas on the site. A minimum of 5,000 cubic yards of material will be excavated from the site. Excavation spoils, if they are not hauled off site immediately, must be carefully stockpiled, monitored and covered if necessary to prevent storm water erosion.

Gasoline and Diesel fuel are also likely to be present on site in significant quantities, for the fueling of vehicles and heavy equipment. These substances are highly polluting and should be stored in safe, industry-approved storage containers.

The other potential contaminants listed in Table 1, if they are present on the site, are likely found in much smaller quantities. Appropriate care must be taken to ensure that these materials are used and stored in such a way that they will not a release caused by a storm event.

5.0 Storm Water Pollution Management Controls

5.1 Temporary Erosion and Pollution Control Practices

Please see the Erosion Control Plan sheet for a depiction of suggested physical BMP's for controlling site runoff erosion during construction. Please note that these measures are not necessarily comprehensive, and that additional controls may be needed in order to adequately protect the site and the surrounding infrastructure and waterways from unauthorized pollution discharge. It is the express responsibility of the contractor to implement additional controls and BMPs as needed.

The Elmhurst site will be most susceptible to erosion caused by storm water runoff in the time following the start of excavation and prior to the grass seeding. During this time, it will be imperative for the contractor to be diligent about erosion-control practices, including installation and regular maintenance of structural BMPs such as silt fence.

Another vital component of storm water pollution control during construction will be good housekeeping practices. As mentioned in Section 4.2, it will be essential that potential pollutants be stored in such a way as to prevent a release. All fuels must be stored in approved containers. These containers must be in good condition, and must be outfitted with the most up-to-date industry standard spill prevention and containment mechanisms. It will also be necessary to use care when fueling equipment or filling storage tanks to ensure that accidental spillage does not occur. All vehicles and heavy equipment must be in good working condition and free from oil, fuel, grease, or hydraulic fluid leaks. Spill kits should be available with all stored fuels.

Other construction materials that have the potential to become pollutants must be handled and stored with similar care. It will be vital that any liquid construction materials such as paint or curing compounds be stored in approved, sealed containers, and be protected from potential damage by storm events, vehicle or equipment movement, or other construction activities. Any spilled materials must be cleaned up immediately and properly disposed of, so that they are not allowed to infiltrate the ground or be carried off by storm water. Spill cleanup equipment should be kept available onsite at all times. Equipment should include, at a minimum: mops, brooms, dust pans, absorbent agents (e.g. cat litter, sand, sawdust), rags, gloves, and trash containers.

Construction waste, debris, and garbage should be kept on site in a dumpster with a secure lid. The dumpster should be emptied regularly, with the waste being taken to an appropriately licensed landfill. No construction waste, debris, or garbage may be buried, burned, or otherwise disposed of on site. All portable toilets and trailer restroom storage tanks must be serviced weekly by a licensed waste handler.

5.2 Post-Construction Erosion and Pollution Control Practices

As construction of the sub-station is nearing completion, the site must be made ready for its permanent, post-construction erosion and pollution control measures. The main erosion and pollution-control device used on the site will be the detention basin. It is imperative that the basin be constructed properly, so that it can achieve maximum efficiency in reducing runoff pollution from the site.

It will also be important that the basin be maintained so that it is always working properly. Such maintenance includes cleaning of debris and sediment from the drainage structure, as well as rodding or jetting the corrugated metal pipe as necessary. The vegetation in the detention basin will play an important role in effective pollution reduction. It will be imperative that the landscape features receive adequate maintenance and care.

6.0 SWPPP Maintenance and Inspection Procedures

6.1 Inspections

The SWPPP Coordinator (or his designee) shall perform visual inspections of the site daily or within 12 hours of a storm event producing one-half inch or more of rain. The purpose of the inspections is to ensure that the site's physical erosion-control devices are in good repair and are functioning properly, and that the site has not sustained erosion damage from the storm event. If damage to the site or to any erosion control devices is found, immediate repairs must be made. The focus of the inspections should include, but not be limited to, the following:

- Sediment built up on silt fence should be removed if it has reached one-third of the height of the barrier.
- Silt fence should be inspected for tears, loose or broken stakes, detached fabric, or other defects.
- Any areas of washout that may exist.
- Any mud or material tracked off site by trucks or other vehicles.
- Any bare spots or washout of seeding or any other erosion control device.
- Any site condition that shows evidence of or can lead to erosion or pollution caused by storm water runoff.

A maintenance inspection form will be completed with each inspection. A copy of the typical form to be completed by the SWPPP Coordinator (or his designee) is provided at the end of this SWPPP in the Appendix. Completed forms must be kept on site for the duration of construction. Following construction, the completed forms must be kept as part of the construction record for a minimum of one year.

6.2 Employee Training

All employees working on the site are required to read and understand the contents of the SWPPP. The contractor will be required to train all employees in the purpose, goals, requirements, and proper execution of the SWPPP. Specific attention should be given to erosion control, spill prevention and response, construction housekeeping practices, equipment fueling and maintenance, and material storage. Training must be completed before the employee begins work at the site

Appendix: Sample SWPPP Inspection Log

Commonwealth Edison Elmhurst Sub-Station

Storm Water Pollution Prevention Plan

Inspection Log

To be completed daily or within 12 hours of a rainfall event of 0.5 inches or more.

Inspector: _____

Title: _____

Company: _____

Date: _____

Days since last rainfall: _____

Amount of last rainfall (inches): _____

<u>Erosion Control Measures</u>

Does silt fence require sediment removal? (Has sediment reached 1/3 of structure height)

YES NO

If yes, work is to be performed by _____ on or before _____.

Were any areas of washout observed?

YES NO

If yes, washout areas are to be repaired by _____ , on or

before_____.

Commonwealth Edison Elmhurst Sub-Station

Storm Water Pollution Prevention Plan

Inspection Log

Date: _____

Site Housekeeping

Are trucks or vehicles leaving the site tracking mud onto adjacent roadways?

YES NO

If yes, the following measures will be taken to alleviate the problem:

Are all construction materials stored in such a way that they will not contribute to site storm water pollution?

YES NO

If no, the following materials _____ will be cleaned up

and properly stored by _____ immediately.