WISCONSIN CLEAN MARINA

BEST MANAGEMENT PRACTICES GUIDEBOOK

VERSION 2 • JUNE, 2012

WISCONSIN CLEAN MARINA
INTRODUCTION

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 the coastal zone. 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 University of Wisconsin Sea Grant Institute and the Wisconsin Marina Association (WMA), along with the marine industry and state of Wisconsin, have developed this comprehensive guide to marina and boatyard best management practices. This guidebook outlines Wisconsin's laws, regulations, and programs that address marine facilities and nonpoint sources of pollution. Our goal is to distribute this guide to all marinas and boatyards in Wisconsin and to designate all facilities that choose to participate in the Wisconsin Clean Marina Program.

By using this guide and voluntarily adopting pollution prevention practices, Wisconsin marinas and boatyards may avoid regulatory fines resulting from non-compliance and raise their community status as a designated Wisconsin Clean Marina. We urge all marina and boatyard operators to embrace the challenge—to work with the Wisconsin Clean Marina Program and continue to protect our recreational and natural resource treasures.

The Wisconsin Clean Marina Program is intended as an educational tool for marina operators and owners. The best management practices (BMPs) guidebook and checklist are not intended to be, nor should they be construed as, legal advice. This guidebook does not constitute a complete reference to state, federal, or local laws. Implementation of recommended BMPs does not ensure full compliance with the law. Participation in the Wisconsin Clean Marina Program is voluntary, and this guidebook does not create rights or duties that are enforceable in court of law.

The guidance contained herein is for informational purposes only. The University of Wisconsin Sea Grant Institute, Wisconsin Marina Association, or other contributing agencies, organizations, or individuals cannot guarantee the accuracy or completeness of the BMP guidebook or supporting material.

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NOAA
Wisconsin Coastal Management Program
Wisconsin Marina Association
Sea Grant University of Wisconsin

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The Wisconsin Clean Marina Guidebook was developed with guidance from a highly dedicated steering committee. The Wisconsin Clean Marina Steering Committee was composed of marina owners and operators, University of Wisconsin Sea Grant Institute and UW-Extension outreach specialists, and federal, state, and regional agency representatives. The committee members freely volunteered their time and effort to identify best management practices and review drafts of the guidebook and boater tip sheets. Committee members included:

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The committee received valuable advice from the leaders of other Great Lakes clean marina programs, in particular Chuck Pistis of Michigan Sea Grant, Joe Exl of the Indiana Department of Natural Resources, and Dave Kelch of Ohio Sea Grant. We also want to acknowledge the Maryland and Michigan Clean Marina Programs for providing substantial content for the *Wisconsin Clean Marina Guidebook*.

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INTRODUCTION

Introduction

The Wisconsin Clean Marina Program provides guidance and education that enable marina and boatyard operators to protect the resources that sustain their livelihood—clean water, clean air, and healthy fish and wildlife communities. These natural assets are essential features of the boating industry. After all, many boaters are drawn to the water by nature's glory. Boaters want to ply clean waters and catch abundant fishes. They want to swim and enjoy other water sports without fear of water-borne diseases. Sadly, it is the use of these natural wonders that may lead to their decline.

The maintenance, operation, and storage of recreational vessels have the potential to pollute both air and water. 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 they may be 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. Quite the contrary is true. The largest sources of pollution to Wisconsin waterways are soil erosion, animal manure, fertilizer and pesticide runoff from farms and, to a lesser extent, from commercial and residential development. While industrial and municipal sewage discharges are highly regulated, these wastewaters also contribute pollutants. Environmental degradation is not the result of any particular industry or user group. It is the consequence of all of our activities. As such, we all have an obligation to do what we can to minimize the negative environmental impacts of our actions. If we each take responsibility for the part of the problem we can control–even if it seems insignificant–the cumulative result will be a cleaner, healthier environment.

By adopting the best management practices (BMPs) recommended throughout this guidebook, you will demonstrate your commitment to environmental stewardship. You can be proud that you are doing your share to protect the environment upon which we all depend. Additionally, your marina or boatyard will be a safer, healthier place to work. Participating marinas will be able to save money by reducing costs for insurance, materials, waste cleanup, and disposal. Participating marinas may increase profits by renting out equipment, such as vacuum sanders, and offering recycling collections. Similarly, cleaner, more efficient equipment will increase the productivity of your marina staff. Moreover, 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. "Green" consumers constitute one of the fastest growing market segments today.

The Wisconsin Clean Marina Program seeks to ensure clean water and fresh air by providing best management practices, compliance/technical information, and educational materials to marina operators and boaters. The goal of the program is to encourage informed decision making that leads to a reduction in boating-related pollution and adverse affects on the environment. The Wisconsin 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 owner/operators of full-service marinas but is equally applicable to boaters and facilities that offer less than full service, including yacht clubs, transient docks, boatyards, and marine retailers.

This guidebook provides BMPs and advice on the following topics:

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

Samples of spill prevention, control, and countermeasure (SPCC); emergency response; and stormwater pollution prevention (SWPPP) plans may be found in the appendices. The guidebook also includes an explanation of the Wisconsin Clean Marina certification process and related forms.

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

Now is the time to take a leadership role in protecting and enhancing the quality of Wisconsin's coastal and inland waters. Please, do your part—participate in the Wisconsin Clean Marina Program.

How to Use This Guidebook

The Wisconsin Clean Marina Guidebook is intended to be used as a reference document. Refer to selected chapters as needed. For example, as you prepare for spring commissioning, review the recommendations in the chapter titled "Vessel Maintenance and Repair". The Clean Marina certification checklist includes page references to more information in the guidebook. Throughout the book you will find references and Web links to additional sources of information.

Nine Clean Boater Tip Sheets are also included in the guidebook. They address waste water containment and disposal, engine maintenance, hull maintenance, non-toxic cleaning alternatives, boat cleaning, solid 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.

Acronyms

AIS	Aquatic invasive species
AST	Aboveground storage tank
BMP	Best management practice
CVA	Clean Vessel Act

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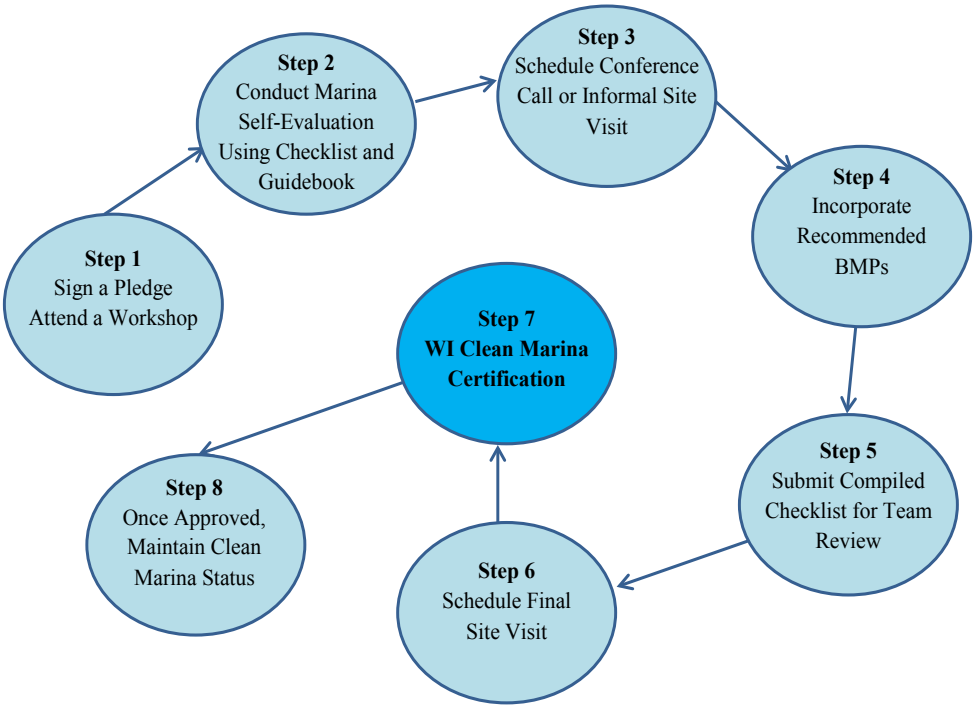
CZARA	Coastal Zone Act Reauthorization Amendments
DATCP	Wisconsin Department of Agriculture, Trade and Consumer Protection
EPA	United States Environmental Protection Agency
MPPRCA	Marine Plastic Pollution Research and Control Act
MSD	Marine sanitation device
MSDS	Material safety data sheets
NDZ	No-discharge zone
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OSRO	Oil Spill Response Organization
RCRA	Resource Conservation and Recovery Act
SAV	Submerged aquatic vegetation
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
WDNR	Wisconsin Department of Natural Resources
WMA	Wisconsin Marina Association
WPDES	Wisconsin Pollutant Discharge Elimination System

WISCONSIN CLEAN MARINA CERTIFICATION PROCESS & FORMS

Certification Process and Forms

Certification Process



The following eight steps must be completed in order to become a certified Wisconsin Clean Marina:

Step 1: Sign the Wisconsin Clean Marina Pledge & Attend an Introductory Workshop

By signing the Wisconsin Clean Marina program pledge, you commit to doing your part to keep Wisconsin's waterways free of harmful chemicals, excess nutrients, and debris and to use best management practices (BMPs) that prevent pollution and protect aquatic habitat.

WisconsinCleanMarina.org

The pledge demonstrates your voluntary participation, environmental ethic, individual responsibility, and intent to begin the process of becoming a Wisconsin Clean Marina.

Send or fax the signed pledge to the Wisconsin Clean Marina Program Manager. The current Program Manager is:

Victoria Harris
Wisconsin Clean Marina Program Coordinator
Wisconsin Marine Association
Tel: (920) 366-3971
e-mail: harrisv@uwgb.edu

Display a copy of the pledge in a public area so that your customers will be aware of your commitment to clean water. The Wisconsin Clean Marina Program will include your marina or boatyard's name on our website list of pledged facilities and in public displays.

Attend one of the introductory workshops and review the Wisconsin Clean Marina guidebook. You may also call the Wisconsin Clean Marina Program Manager or visit our website at *www.wisconsincleanmarina.org* for more information.

Step 2: Conduct a Self-Evaluation of Your Marina or Boatyard Using the Checklist and Wisconsin Clean Marina Guidebook

To achieve Wisconsin Clean Marina status, marinas and boatyards must meet 100% of all applicable BMPs mandated by laws and regulations (denoted by "M" on the checklist), 100% of all applicable program-required BMPs (denoted by "P") and a minimum of 50% of applicable recommended BMPs (denoted by "R"). In the event that it is not feasible to implement a particular recommended BMP, you may earn credit to meet the certification criteria by noting additional practices you employ that are listed in the program guidebook.

Step 3: Contact the Wisconsin Clean Marina Program Manager to Answer any Questions or Schedule an Informal Site Visit

Do not be discouraged if you have difficulty meeting the minimum scores on the self-evaluation checklist. We want you to become a Wisconsin Clean Marina and can help you identify ways to achieve the minimum standards. Please contact the Wisconsin Clean Marina Program Manager for assistance. If the program manager 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 4: Incorporate Recommended BMPs

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

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Step 5: Submit the Completed Checklist to the Wisconsin Clean Marina Program Manager

After implementing and/or modifying any necessary BMPs in order to achieve the Wisconsin Clean Marina certification criteria, complete a final checklist and submit the completed checklist to the program manager for review.

Step 6: Schedule the Final Site Visit Checkout

When the Wisconsin Clean Marina Program Manager is satisfied that your completed checklist demonstrates that your facility tentatively meets the designation criteria, the program manager will schedule an onsite certification inspection. A site review team will visit your facility, verify the items on the checklist, and make a recommendation to the Technical Team for certification.

Step 7: Wisconsin Clean Marina Certification!

Once you are certified as a Wisconsin Clean Marina, the Wisconsin 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 Wisconsin Clean Marina logo on your letterhead and in your advertising. You will receive a Wisconsin Clean Marina certificate and a flag to fly on your property. Your marina or boatyard will also be listed in Wisconsin Clean Marina publications, the program website, and in public displays.

Step 8: Maintain your Wisconsin Clean Marina Status

Periodically, the program manager will ask you to confirm in writing that you continue to meet the designation standards described on the Wisconsin Clean Marina checklist. Marinas and boatyards must be recertified at least every five years or when marina ownership or management changes. The Wisconsin Clean Marina Program Technical Team 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. The Wisconsin Clean Marina Program and its partners are not responsible for any violations or fines that may be applied for non-compliance.

Wisconsin Clean Marina Pledge Statement

The Wisconsin 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 (number and street)	
City	Zip

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

- Marina Siting
- Marina Design & Maintenance
- Stormwater Management
- Vessel Maintenance and Repair
- Petroleum Control
- Sewage Handling
- Waste Containment and Disposal
- Marina Management

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

Printed Name of Marina or Boatyard Owner		Date (month, day, year)
Signature of Marina or Boatyard Owner	Phone	e-mail Address

Printed Name of Marina or Boatyard Manager		Date (month, day, year)
Signature of Marina or Boatyard Manager	Phone	e-mail Address

Please complete and return signed form to:
Victoria Harris
Wisconsin Clean Marina Program Coord.
2617 Sunrise River Ct.
DePere, WI 54115
telephone: 920-366-3971
e-mail: harrisv@uwgb.edu

Wisconsin Clean Marina Program Checklist

Facility Name	Date of Assessment

Type of Facility (check **all** that apply)

☐ Marina ☐ Yacht Club ☐ Transient docking ☐ Boatyard
☐ Boat dealer ☐ Other (Describe) **Number of slips: __ Age of Facility: _____**

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

E-Mail 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
☐ 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:

Number of employees: Full-time (year-round) _____ Part-time (year-round) _____ Seasonal _____

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:_____

How do you dispense fuel? ☐ Staff only ☐ Staff oversee fueling ☐ Boaters

Is the marina: ☐ Owned or leased by the city ☐ Privately owned ☐Other:_____

This form is intended to be used by marina, boatyard, and yacht club operators to conduct self-assessments of their facilities. If you are a boat dealer only, the Wisconsin Clean Marina Program will not apply to you. This form will also be used by representatives of the Wisconsin Clean Marina Program to conduct onsite marina certification assessments.

The practices listed on the checklist by chapter refer to the 2012 Wisconsin Clean Marina Best Management Practices Guidebook. It is **important** that you **refer to the corresponding Guidebook pages** for more complete descriptions of practices (Online Guidebook: http://www.wisconsincleanmarina.org/Default.aspx?tabid=62).

Symbols used on the checklist indicate the following: M = practices mandated by laws and regulations, P = program required best management practices (BMPs) and R = program recommended BMPs.

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, checklist items under the Siting Considerations for New and Expanding Marinas chapter apply only to developing marinas or those undergoing renovation or expansion.

In the column on the right, please check if this is a new practice you put into place or changed as a result of participation in the Wisconsin Clean Marina Program. This will help us keep track of how many BMPs marinas have adopted and help us determine the impact of the program on the environment.

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Siting Considerations for New and Expanding Marinas Chapter	Status	Yes	No	N/A	New?
Do You:					
1. have the proper permits for marina construction and dredging? p. 2	M				
2. plan new facilities in previously developed waterfront sites? p.2	R				
3. comply with all state and federal laws for rare and endangered species? p.3	M				
4. minimize disturbances to wetlands? p. 3	M				
5. schedule construction to avoid critical migration, nesting, and spawning periods of important species of fish and wildlife? p. 3	M				
6. construct the marina to enhance or maintain proper water movement? p. 4	R				
7. develop the site to address stormwater drainage and infiltration? p. 4	M				
Marina Design and Maintenance Chapter for All Marinas	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. have a marina design that enhances water circulation and minimizes the need for dredging? p. 2	R				
2. use environmentally neutral materials? p. 3	R				
3. minimize impacts of dredging? p. 4	M				
4. use nonstructural shore erosion control measures? p. 5	R				
5. maintain structures using clean marina practices? (i.e. scrape, sand, and paint structures according to the same management principles as for vessels; move floating structures to shore for scraping, painting, and major repairs) p. 5	P				
6. use upland and inland areas for boat storage/maintenance areas? p. 6	R				
7. provide covered storage or dry-stack storage? p. 6	R				
8. conserve and protect existing sensitive areas and habitats? p. 7	R				
9. 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. 7	P				
10. 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. 7	R				
11. adopt integrated pest management practices (i.e., select native plants, use pesticides as a last resort, foster natural predators, etc.)? p. 8	P				
12. inform boaters and encourage the use of practices to help control the spread of aquatic invasive species and diseases? p. 9	P				
13. enhance aquatic and/or terrestrial habitats adjacent to the marina basin? p.10	R				
Stormwater Management Chapter	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. have a WPDES stormwater discharge permit? p.2	M				

2. have a stormwater pollution prevention plan (SWPPP) or stormwater information map? p. 2	M/P				
3. as part of the SWPPP, conduct monitoring and maintain records for a minimum of 5 years? p.2	M				
4. capture and treat stormwater on site? p. 3	R				
5. 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. 3	P				
6. minimize the amount of impervious surface by only paving necessary areas? p. 3	R				
7. use soil erosion control practices during construction? p. 4	M				
8. have stormwater management structures that are appropriate for your property (e.g. rain barrels, rain gardens or areas mentioned in #4 above)? p. 4	P				
9. stencil or label storm drains? p. 5	R				
Vessel Maintenance and Repair Chapter	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. have a WPDES general permit for wastewater from the outside washing of vehicles, equipment and other objects? p.2	M				
2. restrict maintenance activities to designated work areas? p. 2	P				
3. locate designated work areas as far from the shore as practical? p. 2	R				
4. collect maintenance debris and dispose of it properly? p. 2	P				
5. provide education, training, or signage describing best management practices that boat owners and contractors must follow? p. 2	P				
6. wash boats on land, where the wash water can be collected and treated? p. 3	R				
7. use or sell environmentally friendly cleaning and maintenance products if possible, (i.e. teak cleaners, varnishes, solvents)? p. 3	P				
8. minimize the impacts of pressure washing? p. 3	M				
9. handle solvents appropriately? p. 4	P				
10. keep records of solvent and paint usage? p. 4	M				
11. minimize the environmental impacts of engine repair and maintenance? p. 5	P				
12. winterize only with less toxic propylene glycol antifreeze? p. 6	P				
13. use best management practices to minimize the use and release of antifreeze into the environment? p. 6	P				
14. inspect bilges prior to boat storage at your facility and require boat owners to keep bilges clean and dry during storage? p. 6	R				
15. recycle used shrink wrap covers? p. 6	P				
16. have appropriate procedures for the collection, storage, and disposal of spent lead acid batteries? p. 6	P				
17. rent or loan vacuum sanders to tenants and contractors? p. 8	R				
18. restrict or prohibit power sanding on the water? p. 7	R				
19. contain dust from sanding and dispose of it properly? p. 8	P				
20. contain debris from sand blasting and dispose of it properly?	P				

p. 8					
21. have an annual pesticide application business license from Wisconsin DATCP if you apply anti-fouling paints to boats for hire? p. 9	M				
22. have an annual pesticide applicator license from Wisconsin DATCP if you apply anti-fouling paints to boats? p. 9	M				
23. recommend antifouling paints with minimal environmental impacts? p. 9	R				
24. prohibit boaters from spray painting on the water? p. 10	R				
25. conduct all spray painting on land, in a spray booth, or under a tarp? p. 10	P				
Petroleum Control Chapter	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. have inspection records indicating compliance with petroleum storage requirements? p. 4	M				
2. always have a trained employee at the fuel dock to oversee or assist with fueling? p. 4	P				
3. have employees trained in marina fueling and spill procedures? p. 4	P				
4. remove fuel nozzle holding clips? p. 5	M				
5. have automatic back pressure shut-off nozzles on fuel pump discharge hoses? p. 5	M				
6. regularly inspect and repair fuel transfer equipment? p. 6	P				
7. make available and promote the use of oil-absorbent materials and collection devices at the fuel dock? (e.g., "no-spill" bottles and oil-absorbent pads) p. 6	P				
8. provide bilge socks and encourage their use by boaters? p. 5	R				
9. dispose of oil-absorbent materials properly? p. 7	P				
10. take precautions to minimize spills and leaks from machinery? p. 7	P				
11. offer spill-proof oil changes? p. 8	R				
12. have a spill prevention, control and countermeasure (SPCC) plan that meets all SPCC rules (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. 8-9	M				
13. have accessible, current written emergency response plans for likely threats (e.g. fuel or chemical spills, fire, etc)? p. 9-10	P				
14. have regular emergency training and drills for staff?(at least twice annually) p. 10-11	P				
15. maintain oil spill response equipment to contain a potential spill in water at your facility? p. 11	P				
16. store your oil response equipment and booms where they are convenient and accessible to the most likely location of an oil or fuel spill? p. 11	P				
17. report petroleum spills to the U.S. Coast Guard's National Response Center and the WDNR and post the notification numbers? p. 11-12	M				
18. have annual fire inspection records indicating compliance with all applicable fire codes? p. 12	M				

19. maintain files of Material Safety Data Sheets (MSDS) as required by OSHA? (needed for petroleum) p. 12	M				
20. file Tier Two forms for hazardous waste? p. 12-13	M				
Sewage Handling Chapter	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. have a well-maintained pump-out facility appropriate for your facility or inform boaters of other pump-out locations? p. 3	P				
2. have a dump station, wand attachment or an alternative procedure to empty portable toilets? p. 5	R				
3. provide clean, functional restrooms 24 hours per day for marina customers? p. 5	R				
4. maintain your septic system regularly and post signs about what patrons can and cannot put into the system? p. 5	P				
5. address the special sewage handling needs of live-aboards? p. 6	R				
6. offer Marine Sanitation Device (MSD) inspections of boats? p. 6	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. 7	P				
8. establish practices to control pet waste problems? p. 7	R				
9. discourage the feeding of water birds in your marina? p. 7	R				
10. discourage the discharge of graywater in the marina basin? p. 7-8	R				
Waste Containment and Disposal Chapter	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. recycle materials in accordance with WI state recycling laws? p. 2	M				
2. store, use, and dispose of hazardous waste in accordance with federal and state regulations? p. 3-4	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. 2	R				
4. provide fish cleaning stations and/or require patrons to dispose of fish waste properly? p. 7	R				
5. provide trash and recycling receptacles that are covered, well labeled, and located in convenient locations? p. 8	P				
6. 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. 9	P				
7. post signs indicating what must be recycled and where? p. 9	P				
8. provide or promote recycling of liquid waste? (e.g. used oil, antifreeze, and solvents; have proper containers and containment areas) p. 6	P				
9. minimize your use of hazardous products? p. 5	R				
10. follow recommended waste disposal methods? p. 11-13	P				
11. track pollution incidents by using the pollution report and	R				

action log found in the guidebook? p. 14					
Marina Management Chapter	**Status**	**Yes**	**No**	**N/A**	**New?**
Do You:					
1. provide staff training on the stormwater pollution prevention plan (SWPPP)? p. 2	M				
2. review emergency response plans and procedures with staff? p. 2	P				
3. train staff to watch for inappropriate discharge and activities? p. 2	P				
4. have established procedures for approaching polluters? p.2	R				
5. maintain training records? p. 3	P				
6. incorporate best management practices into all of your contracts: slip holders, live-aboards, transients, charters, workers, contractors, and tenants? p. 3	P				
7. post signs informing boaters of best management practices (sample signage provided in guidebook)? p. 4	P				
8. provide environmental education materials to boaters? (e.g. host workshops to demonstrate BMPs, recognize boaters who try to prevent pollution, offer environmental audits, distribute the Clean Boaters Tip Sheets and the Simple Solutions brochure, or include articles about BMPs in your newsletter) p. 9	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
Program-Recommended BMPs (R)				50

Verified by Wisconsin Clean Marina certification specialist(s):

Certification Specialist Name		
Signature		
Date	Phone	E-Mail Address

Certification Specialist Name		
Signature		
Date	Phone	E-Mail Address

Certification Specialist Name		
Signature		
Date	Phone	E-Mail Address

Certification Specialist Name		
Signature		
Date	Phone	E-Mail Address

Comments and Recommendations

Wisconsin Clean Marina Program
Site Visit Preparation

Step 1: Best Management Practices (BMP) Guidebook and Checklist
Review the checklist **and** corresponding pages referenced from the Wisconsin Clean Marina BMP Guidebook. It is important to review all applicable sections of the Guidebook in order to understand and properly complete the checklist. The Guidebook is available at www.wisconsincleanmarina.org, or contact us if you would like one sent.

Step 2: Self-Assessment
Conduct a self-assessment of your facility using the Clean Marina checklist (available at www.wisconsincleanmarina.org). Note any additional BMPs you employ from the Guidebook. They may be counted as extra credit toward certification.

Step 3: Submit Checklist and Key Documents
Email or fax your completed checklist and questions to Victoria Harris at harrisv@uwgb.edu, **or fax to 920-465-2143.** Also send an electronic file (or copy) of your slip agreement, marina rules, emergency response plan, SPCC and Stormwater Pollution Prevention Plan (SWPPP). We will call you to review the information and set-up a future site visit.

Step 4: Site Visit
Please have all key personnel on hand to help answer questions and have the following applicable documents ready to be viewed:

Facilities with docks only:
- Stormwater Information Map – This map is required for marinas that are exempt from a stormwater discharge permit by the WDNR. (Map instructions at www.wisconsincleanmarina.org)
- Staff training documents and records
- Marina emergency response plan (send an electronic copy with your checklist.)
- Slip agreements or contracts (send an electronic copy with your checklist.)
- Dredging permits from the U.S. Army Corps of Engineers and the WDNR
- Records of passed fire department inspections

All other facilities that have petroleum or do any maintenance: Items mentioned above and:
- WPDES Stormwater Discharge Permit and Stormwater Pollution Prevention Plan (SWPPP) – Contact the WDNR to determine if this permit and plan are required. Provide proof for exemptions.
- WPDES wastewater general permit for discharge of boat wash water. Verify if this permit is needed by checking the Guidebook or contacting the WDNR.
- Records of solvent and paint usage
- An annual Pesticide Applicator License – for personnel applying anti-fouling paint http://ipcm.wisc.edu/pat/Certification/
- Spill Prevention, Control and Countermeasure (SPCC) Plan – if aboveground tank over 1,320 gal or underground tank over 42,000 gal.
- Material Safety Data Sheet (MSDS) files – for petroleum too.
- Inspection records for petroleum storage tanks
- Emergency and Hazardous Chemical Inventory Tier Two forms – for petroleum: http://emergencymanagement.wi.gov/EPCRA/forms/2010-11_Blank_IFS_Tier_2.pdf

If you have questions, ideas or concerns, please contact any of the following:

Victoria Harris - WI Marine Association	920-366-3971	harrisv@uwgb.edu
Julia Noordyk - UW Sea Grant	920-465-2795	jnoordyk@aqua.wisc.edu

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CONSIDERATIONS

Coastal areas have such ecological, economic, recreational, and aesthetic values that shoreline development must be done carefully.

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Siting Considerations for New and Expanding Marinas

Environmental Concerns

Legal Setting

- U.S. Army Corps of Engineers
- Fish and Wildlife Coordination Act

Site Selection Guidelines

- 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
- Avoid Waterfowl Nesting and Staging Areas
- Avoid Geographic Impediments
- Consider Bottom Configurations
- Follow Natural Channels
- Evaluate Upland Impacts

Environmental Concerns

The natural plant and animal communities of coastal areas serve multiple functions. Wetlands, for example, provide habitat for fish and fowl. They form a natural buffer against incoming storms and act as a filter to purify stormwater runoff. Wetlands also minimize erosion and attract tourists interested in bird watching, hunting, and fishing. Coastal areas have such ecological, economic, recreational, and aesthetic values that shoreline development must be done carefully.

When selecting a site for a new marina or when expanding a marina, you should avoid or minimize your impact on the following resources:

- Submerged aquatic vegetation
- Wetlands
- Rare, threatened, or endangered species
- Spawning, nursery, or propagation areas for fish
- Shallow-water habitat
- Colonial-nesting bird areas
- Existing forest land

- Nesting areas for forest-dwelling bird species
- Natural heritage areas
- Tributary streams
- Waterfowl staging areas
- Adjacent shoreline and nearshore processes

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.

Legal Setting

U.S. Army Corps of Engineers (USACE)

The majority of marina development and expansion projects, including dredging, will require a permit from the U.S. Army Corps of Engineers (USACE). As part of the permitting process, the Wisconsin Department of Natural Resources (WDNR) reviews potential water quality impacts for newly proposed or expanding marinas through the 401 Water Quality Certification Program. Section 10 of the Rivers and Harbors Act of 1899 gives the USACE authority to regulate all works and structures in navigable waters of the United States. Section 404 of the Federal Water Pollution Control Act (aka the Clean Water Act) regulates discharges of dredged or fill materials into navigable waters, including wetlands.

The Fish and Wildlife Coordination Act (FWCA) requires a U.S. Fish and Wildlife Service (USFWS) review of potential effects on fish and wildlife from proposed water resource development projects. The FWCA requires that fish and wildlife resources receive equal consideration to other project features. In addition, it also requires federal agencies (e.g., USACE) that construct, license, or permit water resource development projects to first consult with the USFWS and relevant state (e.g., WDNR) and local agencies to mitigate impacts on fish and wildlife.

Site Selection Guidelines

Redevelop Existing Sites

Rather than disturbing undeveloped areas (greenfields), place new facilities in previously occupied waterfront sites (also known as brownfields). State regulations favor expansion of existing marinas over development of new facilities.

Brownfield redevelopment restores property to productive uses, increases property values, reduces pressure to develop greenfields, increases local tax base, uses existing infrastructure, mitigates public health and safety concerns, and improves community image. The state offers a number of grant programs to encourage productive redevelopment of brownfields. For more information, see *http://dnr.wi.gov/topic/Brownfields/Financial.html.*

Characterize Project Site

- Identify habitat types and seasonal use of the site by fish, waterfowl, and other organisms.

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- Identify local nearshore coastal processes to ensure any new development will not change these natural processes.
- Ensure that any previous environmental contamination (e.g., underground tanks) has been cleaned up.
- If necessary, hire a private consulting firm to perform a site assessment.

Identify Rare and Endangered Species

- Rare and endangered species may not be disturbed (Federal Endangered Species Act and Wisconsin State Statute 29.604 and Wis. Adm. Code NR 27).
- All proposed development sites must be assessed by the USFWS and the WDNR for endangered and threatened species and habitat protection areas.
- For more precise information concerning sensitive habitat areas, submit a project description and a photocopy of a United States Geological Survey topographic quadrangle map, with the site identified, to the USFWS (*www.fws.gov*).
- If protected species are identified, you must implement an approved protection plan prior to project approval.
- Provide a mitigation or habitat enhancement plan to the USACE and the USFWS.

Avoid Submerged Aquatic Vegetation

Submerged (rooted) aquatic vegetation (SAV) provides habitat for fish and food for waterfowl. It is an important component of healthy coastal ecosystems.

- Avoid or mitigate any disturbances of SAV.
- Site new or expanded marinas to avoid navigation over SAV beds.

Minimize Disturbance to Wetlands

- Minimize disturbance to wetlands and indigenous (native) vegetation in coastal or shoreline areas. (For guidance criteria refer to WDNR NR 103, Wis. Adm. Code.)
- The goal is to preserve and, where possible, increase wetland acreage and function.
- Any construction that extends into wetland areas requires authorization or permits from the WDNR and the USACE.
- Mitigation is required when loss of wetlands is unavoidable.
- Wetlands can be naturally created adjacent to marinas on the down-current side of marinas**.**

Minimize Disturbance to Fish and Wildlife

- Schedule construction to avoid critical migration, nesting, and spawning periods of important species of fish and wildlife.
- Consult with the WDNR for site-specific determinations of the potential effects of marina siting or construction on wildlife populations.
- Preserve nesting trees and other natural habitats where possible.

Avoid Waterfowl Nesting and Staging Areas

Regional waterfowl populations converge in certain areas to breed and feed during specific times of year. The preservation of these areas is vital to the continued existence of many water bird species. Marinas must be located such that the associated increased boating

activities do not deter waterfowl from using these traditional areas. State regulations and siting criteria require new or expanding marinas to avoid areas that will adversely affect historic waterfowl staging areas (NR 103).

Avoid Geographic Impediments

Marina basin flushing is essential for maintaining good water quality within your marina. Any new or expanding marina should be constructed to enhance or maintain proper water movement.

- Marinas should be located on well-flushed waterways.
- Choose open design fixed or floating structures that encourage rather than impede water movement.

Consider Bottom Configurations

- A continuous, gradual downward slope from the berthing area into deeper water is ideal.
- Avoid canals, irregular pockets, and sumps that are deeper than adjacent channels.
- Avoid square corners in marina basins and dead-end channels to the greatest extent possible.

Follow Natural Channels

- 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 long winding channels connecting marinas to open water.
- Where possible, establish two openings at opposite ends of the marina to promote flow-through currents.

Evaluate Upland Impacts

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

Marina protection must be carefully designed. Incorrectly designed structures may amplify wave action, exacerbating erosion, creating excessive shoaling, and interrupting or restricting circulation. Coastal engineering analysis may be required to determine the size, configuration, location, and proper materials for protection structures such as rubble mound breakwaters, wave attenuators, and seawalls.

Marinas are also discouraged from extending past the present line of shoreline facilities or "sticking out." Additionally, facilities have been encouraged to develop by cutting into the upland areas rather than building out into the bottomland or shallow nearshore areas. This avoids the loss of access to public trust waters and bottomland.

Damage from ice can cause oil and gas spills and the deposition of debris and other substances. Areas prone to ice flows need to be identified, and construction or management processes identified.

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Pollution prevention measures taken by the marina will help maintain or even improve water and habitat quality, leading to a more aesthetically pleasing marina.

Marina Design and Maintenance

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 resuspend toxic compounds such as heavy metals, hydrocarbons, and

synthetic chemicals. Hazardous chemicals may be leached into the water from piers and other similar structures. Broken or degraded floats may release buoyant debris that birds and fish mistake for food. Finally, the location and installation of lakeside and in-water structures may lead to accelerated coastal erosion and sedimentation. Sedimentation may bury bottom-dwelling organisms, block sunlight, reduce the feeding efficiency of visual feeders, clog fish gills, cause shoaling, and lead to additional dredging costs.

Maintaining water quality within a marina basin is very important. 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 sediments. Excess dredging to create deeper water can slow flows and diminish re-oxygenation of waters in the marina basin.

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. They can allow for quiet, sheltered waters. A marina can assist in replacing natural habitat that allows for feeding and spawning. Pollution prevention measures taken by the marina will help maintain or even improve water and habitat quality, leading to a more aesthetically pleasing marina.

Legal Setting

Environmental Review

Regulatory agencies typically evaluate marina projects for impacts on:

- Water quality
- Stream buffers
- Wetlands
- Wildlife corridors
- Wild and scenic rivers
- Navigational safety
- Fisheries habitat, including barriers to migration

Best Management Practices for Marina Facilities and Structures

Use Open Design Fixed or Floating Piers to Enhance Water Circulation

- Piers and other structures should be placed to enhance, rather than obstruct, water circulation.
- 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 and the marina.
- Install wave attenuators (if permitted) to reduce the force of incoming water if protection is necessary. Wave attenuators do not restrict water exchange nor do they interfere with bottom ecology or aesthetically pleasing views. Furthermore, they are easily removed and do not significantly interfere with fish migration and shoreline processes.

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- Design new or expanding marinas with as few segments as possible to promote circulation within the basin (refer to figure below). The fewer the segments, the better the circulation.
- Use a mechanical aeration system to aerate areas with poor circulation. Aeration systems need to be inspected routinely to avoid encrustation of zebra or quagga mussels and other organisms. Submersible pumps may be protected with materials that resist attachment (e.g., copper, brass, and galvanized steel). This holds true for air lines if a bubbling system is employed. Circulators can also minimize icing during winter.
- Another advantage of floating dock systems is that they can be removed in the winter to avoid ice damage and the debris that may result. Floating structures also accumulate zebra and/or quagga mussels; this encrustation can be easily removed when the docks are stored on land.

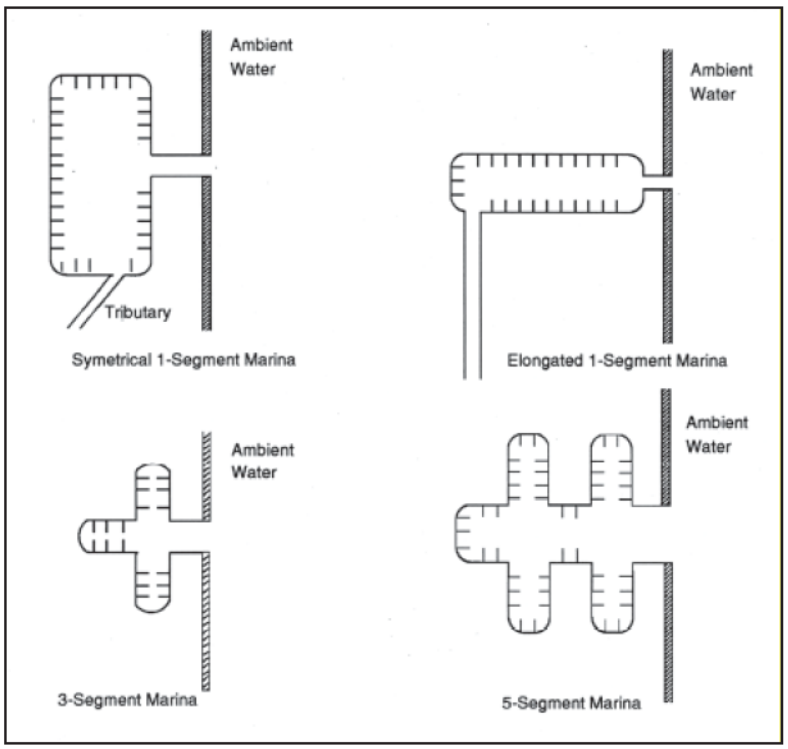

Figure: Example of marina designs (Source: U.S. EPA 2001).

Use Environmentally Neutral Materials for Structures

- For new pilings and other structures that are in or above the water, use materials that will not leach hazardous chemicals into the water or degrade in fewer than ten years, e.g., 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 and similar structures that are 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. Use recyclable decking material.

- Avoid exotic timbers. Some tropical trees, such as greenheart and bongossi, are also naturally durable. Their harvest, however, is harmful to tropical forests.
- Purchase floatable foams that have been encapsulated in plastic. As these floats age, degraded foam is contained by the covering.

Limit Shaded Areas over the Water

- Nearshore bottom-dwelling organisms require sunlight. In order to provide them with as much sunlight as possible, limit the number of covered slips.
- Choose docking systems that minimize light blockage.

Minimize the Need for Dredging

New marinas must be located in areas where deep water can be reached with a minimum of excavation, filling, and dredging. Existing marinas that require maintenance dredging more frequently than once every four years should investigate practical options to increase circulation or reduce sediment accumulation. 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.

Minimize the Impacts of Dredging

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) and the Wisconsin Department of Natural Resources (WDNR). Section 10 of the Rivers and Harbors Act of 1899 gives the USACE authority to regulate all work and structures in navigable waters of the United States. Section 404 of the Federal Water Pollution Control Act (a.k.a. the Clean Water Act) regulates discharges of dredge or fill materials into navigable waters, including wetlands. In addition, permits will be required by the WDNR for any dredging project (Wis. Stats. Chapter 30). More information on dredging permits can be found at *http://dnr.wi.gov/waterways/construction/dredging.html*.

In addition, any dredging operation that discharges carriage water (water portion of slurry that is pumped from the dredging site) and/or interstitial water (water that is squeezed out of the sediment or pore water) will need to obtain a General WPDES Wastewater permit Carriage and Interstitial Water from Dredging Operations (WI-00465583). This permit is intended to cover dredging operations where carriage water or interstitial water from sediment dredging projects is discharged to surface waters or seepage systems. Please refer to the following website for more information, *http://dnr.wi.gov/org/water/wm/ww/gpindex/gpinfo.htm/*.

Dredging has the potential to reduce fish spawning and juvenile fish survival. Areas dredged may suffer destruction of spawning habitat, destruction of fish eggs, and mortality of fish within the dredging area due to removal of bottom substrates and resulting high levels of suspended silt. Currents can move silt particles suspended during dredging away from the site and deposit them in spawning or juvenile fish habitats some distance away. Please note that the dredging permits may provide "environmental windows" for avoiding

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dredging due to fish spawning periods.

Sediment testing is not required for every dredging project. However, in some cases the WDNR may require sediment sampling (NR 347) prior to dredging to determine the appropriate disposal options as outlined in NR 500 and 600. We strongly recommend that you contact the WDNR early in the planning for dredging to see what is required. If required, sediment testing data needs to be submitted with the permit application. For more information, refer to the following document, Guidance for Applying the Sediment Sampling and Analysis Requirements of Chapter NR 347, Wisconsin Adminstrative Code, at *http://dnr.wi.gov/org/water/wm/sms/nr347_guidance_final.pdf*. To reduce the environmental effects of dredging:

- Do not dredge during critical migration or spawning periods of important species of fish and wildlife. Contact the WDNR to learn when these periods are.
- Avoid colonial waterbird nesting areas and historic waterfowl staging and concentration areas.
- Be certain that your dredging contractor selects an appropriate disposal site and containment design based upon the sediment characterization. The disposal site must have minimal impact on public safety, adjacent properties, and the environment. Dredge material previously determined not to be hazardous per NR 662.011, Wis. Adm. Code is classified as a solid waste and is regulated by the NR 500 series of regulations. Therefore, dredge material must be disposed of in accordance with the NR 500 series. It is important to work with your local WDNR office.
- Use dredging methods, like hydraulic dredging, that minimize environmental impacts.

Employ Nonstructural Shore Erosion Control Measures

- Nonstructural measures, such as beach nourishment, wetlands creation, shoreline plantings, and other methods that encourage the preservation of the natural environment are the preferred methods of shore erosion control.
- If nonstructural measures alone are not sufficient to control erosion, use revetments or breakwaters to stabilize and ensure the long-term viability of the nonstructural controls.
- As a last resort, use structural controls 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. The WDNR can help with enforcement problems.

Meet Recycling Collection Needs

State and local laws require owners or designated managers of all non-residential locations to provide for recycling of certain waste materials[1] banned from landfill disposal or incineration.

- Anticipate needs for collection bins and pick-up services when designing a marina.

Maintain Structures Using Clean Marina Practices

- Scrape, sand, and paint land-side structures according to the same management

[1]Newspaper, cardboard, magazines, office paper, and food and beverage containers made of glass, plastics 1&2, aluminum, or steel (ch. 287.07 (1) to (4), Wis. Stats.). See NR 544, Wis. Adm. Code. for recycling requirements.

principles as for vessels. (Refer to the chapter titled "Vessel Maintenance and Repair" in this guidebook.)

- If feasible, move floating structures to shore for scraping, painting, and major repairs.

Best Management Practices for Protecting Sensitive Areas

Minimize Impervious Areas

- Keep paved areas to an absolute minimum, e.g., designated work areas and roadways for heavy equipment. Consider covering these areas with washed stone instead of paving them. Use greenbelts between any paved areas and the lake in order to filter runoff water.
- Where pavement is needed, use pervious pavers or porous pavement.
- Check with local authorities to ensure compliance with local zoning ordinances.

Use Upland and Inland Areas

- Locate buildings, workshops, and waste storage facilities in upland areas, away from fragile shore-side ecosystems, to the greatest extent 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.

Expand Upward

- Rather than adding wet slips, consider expanding the marina's storage capacity by adding covered dry-stack storage. Covered dry-stack storage provides the following environmental benefits:
    - Dry-stacked boats do not accumulate marine growth. Consequently, antifouling coatings are not necessary, and the associated need to wash, scrape, and paint is minimized.
    - Dry-stacked boats are less likely to accumulate water in their bilges. Therefore, they are less likely to discharge oily bilge water.
    - Dry-stack storage allows for greater public access to waterways, an increased number of rental units, and reduced weathering and maintenance for boats.
- Manage stormwater runoff from dry-stack areas, as well as from any expanded parking areas, to remove pollutants and reduce flows.
- Keep heavy equipment well-tuned to prevent grease or oil from dripping onto staging areas or into the water.
- Plan for spills and possible fires. Since dry-stack storage concentrates boats in a relatively small area, provisions need to be in place for accidental spills. Fire protection systems must also be in place.
- Use absorbent booms to collect any grease or oil in the launching and retrieval areas for the dry-stack building.

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Rain barrel at Port Washington Marina. Photo credit: Kae DonLevy

Conserve Sensitive Land

- 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 habitat, historic properties, and open space.
- Sell or donate the land (or the development rights to the land) to a local land trust or a non-profit organization.

Practice Water Conservation and Landscaping

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

- Water only when plants indicate that they are thirsty: shrubs will wilt and grass will lie flat and show footprints. Water in the early morning or early evening when temperatures generally are cooler. Plants will not be shocked, and water loss to evaporation will be minimized.
- Select plants that are suited to the existing conditions (i.e., soil type, moisture, and sunlight). These types of plants will require minimal water, fertilizer, and pesticides.
- Water deeply and infrequently rather than lightly and often. Deep watering promotes stronger root systems that enable plants to draw on subsurface water during hot spells and droughts.
- Select equipment that delivers water prudently. Sprinklers work well for lawns. Soaker hoses or drip irrigation systems deliver water directly to the roots of shrubs, flowers, and vegetable plants with minimal loss to evaporation.
- Place mulch (wood chips, bark, grass clippings, nut shells, etc.) to a depth of 3-4" around plants to keep water in the soil, prevent weeds, and reduce the amount of soil picked up by stormwater. Planting groundcover at the base of trees serves the same function.
- Group plants with similar water needs together. This practice will ease your maintenance burden, conserve water, and benefit the plants.
- Control stormwater runoff by adopting good stormwater management practices, such as planting rain gardens and using stormwater swales. Refer to the chapter titled "Stormwater Management" in this guidebook for more information.
- Replace lawn areas with wildflowers, groundcover, shrubs, and trees.
- Recycle "graywater." Graywater is water that has been used once–maybe for dishwashing or in a washing machine–but does not contain sewage or chemicals. It can be filtered and used to water landscaped areas but must be conveyed in a plumbing system separate from potable water. Because regulations vary, be sure to check local ordinances for permit requirements and obtain written approval before pursuing this option.
- Collect rainwater by directing downspouts into covered containers, such as commercially available rain barrels or cisterns. Use the collected water on your landscaped areas.
- Equip all freshwater hoses with automatic shutoff nozzles.
- Fix any dockside faucet and hose leaks and drips.

- Install “low-flow” faucets, toilets, and shower heads.
- Install automatic faucets and toilet fixtures.

Adopt Integrated Pest Management Practices

Because of your proximity to the water, it is important to avoid toxic lawn and garden chemicals to the greatest extent possible. Instead, deter unwanted plants or animals with 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, wildlife, and water quality. To reduce the need for pesticides and herbicides and reduce their harmful effects on the ecosystem if you do use them:

- Select native plants that are disease and insect resistant, that will out-compete common weeds, and that 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. Periodically rotate plants to disrupt the life cycle of pests. For information on Wisconsin native plant sources, please refer to the following website: *http://dnr.wi.gov/waterways/shoreland/documents/nativeplants.pdf*.
- Mow lawn areas properly to suppress weeds. Set your mower to cut at 2-2.5 inches in height. Mow each time grass reaches 3-4 inches. Avoid cutting more than 1/3 of the height.
- Pull weeds by hand instead of relying on herbicides. If chemically treating aquatic plants, a permit is required from the WDNR (NR 107). More information on the permit requirements can be found at: *http://dnr.wi.gov/org/water/wm/ww/aquaticpesticides.htm*.
- Boost your tolerance for weeds and other pests. If it is not actually harming anything, leave it alone.
- Foster natural predators such as spiders, praying mantises, dragonflies, lacewings, soldier beetles, birds, bats, frogs, lizards, and certain snakes and toads.
- Use natural agents such as *Bacillus thuringiensis* (BT) or inorganic insecticides (e.g., some oils and soaps) that kill pests on contact and pose little threat to the environment. Check the label to be sure that natural agents are approved for use in aquatic systems.
- Use pesticides only after all other options have been exhausted. Instead of broadcasting pesticides, apply them directly to problem areas. Select pesticides that are “pest specific,” designed to kill only the insect, weed, or disease organism that is causing the problem.
- Treat only serious or threatening 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, and do not apply pesticides near water, e.g., shore, wells, streams, ponds, bird baths, swimming pools, etc.
- Apply insecticides during the evening when honeybees and other beneficial insects are less active.
- Use mulches to reduce weed problems, conserve moisture, and prevent soil erosion.

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AIS signage at Port Washington Marina. Photo credit: Kae Don-Levy

- Please refer to the following website for more information on green lawn care: *http://clean-water.uwex.edu/pubs/#hy*.

Help to Control the Spread of Aquatic Invasive Species

Aquatic invasive species (AIS) are invading Wisconsin waterways. Biologists estimate that more than 180 non-native species now inhabit the Great Lakes region, and some are causing billions of dollars of economic damage as well as significant ecological change. Some species may be harmless in their own native range but compete with native species for food and habitat when transplanted to a new area. Invading species, such as zebra and quagga mussels, sea lamprey, round goby, Eurasian ruffe, purple loosestrife and Eurasian water milfoil, have displaced native species, drastically altered aquatic ecosystems, and interfered with business and recreational activities.

Once established, invasive species are virtually impossible to eliminate. Measures taken to control them are extremely expensive and usually occur after ecosystems have already been seriously disrupted. Therefore, prevention of new introductions is essential. Most invasions are the direct result of human activity. Although ballast water from commercial shipping is an important source of AIS, the spread of zebra and quagga mussels to 86 inland lakes in Wisconsin shows that recreational boating and the dumping of unwanted bait by sport anglers are important contributors.

Since marinas congregate boaters and anglers, they can play a significant role in spreading or limiting invasive species to other bodies of water. Boaters should be encouraged to practice behaviors that prevent the spread of invasive species. In this regard, marinas should make available services and information to help boaters prevent the spread of AIS.

- When launching or retrieving boats, make sure that mud, plants, and animals are removed from boats, propellers, trailers, and accessory equipment (NR 40).
- To protect the engine and cooling system from mussel clogging or other AIS infestation, flush them with hot water. If hot water is unavailable, use tap water. Sanitizing solutions of bleach should be avoided because they may be harmful to beneficial organisms.
- Boats, trailers, and fishing equipment should be washed with HOT (110 °F) water and allowed to dry in a sunny location for at least 48 hours.
- Consider purchasing and staffing a boat decontamination unit.
- Require anglers to dispose of unused bait on land in proper collection receptacles. Never dump unused bait into the water.
- Train marina personnel and your boaters to identify aquatic invasive species. If you suspect a new infestation, report it to your local WDNR office *http://dnr.wi.gov/Contact/SSbyCounty.html* or Wisconsin Sea Grant (920-638-4697).
- Train marina staff on Clean Boats, Clean Waters program. In addition, consider hiring a Clean Boats, Clean Waters summer intern to inspect watercraft. Please refer to the following website for more information on the program: *www4.uwsp.edu/cnr/uwexlakes/cbcw/*.
- Give special attention to boats originating from infested areas that will be launched within 48 hours into an uninfected body of water. All parts of the boat that have the potential to harbor invasive species should be carefully inspected. The live well, bilge water, and transom wells should be drained. Anchors, anchor ropes, downrigger cables, fishing tackle, and scuba gear can harbor invasive species. If possible, boats should be left to air dry for five full days.

- In all situations, discard any invasive species in the trash. Do not discard where the potential exists for reintroduction into the water.
- Distribute the Wisconsin Clean Boater Tip Sheet titled "Aquatic Invasive Species" to all slip renters.

Best Management Practices for Creating Habitat Areas

Maintain and/or Develop Vegetated Areas

Vegetation can filter and slow/absorb the flow of surface water runoff, stabilize shorelines, and provide wildlife habitat, flood protection, and visual diversity.

- Maintain vegetated buffers (rain gardens, trees and shrubs, or grasses) between all impervious areas (e.g., parking lots, boat storage areas) and the water. Properly constructed rain gardens and woody vegetation are more effective than grass turf in absorbing runoff and pollutants.
- Plant vegetated areas with low-maintenance plants—plants that require minimal care in terms of trimming, watering, and applications of fertilizer and pesticides. Native plants demand little care since they are adapted to the local climate and soil type. In addition, many horticultural varieties and imported plants may be considered beneficial if they have few maintenance requirements and if they do not displace naturally occurring vegetation (that is, if they are not invasive).
- Select perennial plants instead of annuals. Perennial plants need only be planted once and tend to shade out most weeds. Consult with UW Extension or local nurseries for advice on selecting the right plants.
- Choose plants that bear flowers, fruit, nuts, and seeds to attract birds, small mammals, and other wildlife.
- Maintain proper soil pH and fertility levels. "Fertility" describes the presence of nutrients and minerals in the soil, and pH is a measure of the acidity/alkalinity of the soil. These two measures together tell you which plants your soil can support. Soil pH may be adjusted by adding lime (base) or gypsum (acid). Add organic matter such as compost, leaf mold, manure, grass clippings, bark, or peat moss to improve fertility.
- Periodically, submit a soil sample to your county extension office or soil conservation district office to determine fertility, pH, and application rates for soil amendments.
- Foster beneficial organisms. For example, earthworms move through the soil feeding on microorganisms. In the process, they aerate the soil, improving the flow of water and air to plant roots.
- Compost leaves, branches, grass trimmings, and other organic matter. Use the mature compost to nourish your soil. Alternatively, chip branches and leaves and use them as mulch to discourage weeds and to conserve moisture. Organic matter should never be deposited into any water body.

Enhance Habitat

Create new habitats or expand habitats in your marina basin. The addition of rock or the planting of native plant species on the shoreline can create new areas for feeding and spawning. Consider how any changes you make to the shoreline affect wildlife.

- Minimize disturbance to native vegetation in riparian areas. Riparian areas are narrow areas along the banks of rivers, streams, lakes, ponds, reservoirs, and wetlands. They help filter pollutants from the water and support great biodiversity due to the nutrients

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they absorb from runoff water that passes through them.

- 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.
- 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 WDNR fish manager in your area 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 fish and wildlife habitat and helps reduce erosion and shoreline damage from storms and wave action.

Rock groins extending from South Bay Marina create a captive beach for wildlife use. Photo credit: Dave Wentland.

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.

WISCONSIN CLEAN MARINA
STORMWATER MANAGEMENT

Excess water—called stormwater runoff—flows over the surface of the land, and it may pick up pollutants as it travels and deposit them in nearby lakes and rivers.

Stormwater Management

Environmental Concerns

Legal Setting

- Wisconsin Pollutant Discharge Elimination System (WPDES) Stormwater Discharge Permit Program
- Soil Erosion and Stormwater Management
- Municipal Stormwater Management Programs

Best Management Practices to Control Stormwater Runoff

- Practice Low-Impact Development
- Cultivate Vegetated Areas
- Minimize the Amount of Impervious Surfaces
- Use Structural Controls as Necessary
- Control Sediment from Construction Sites
- Stencil Storm Drains

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 surface of the land, and it may pick up pollutants as it travels and deposit them in nearby lakes and rivers. Common pollutants found in marina stormwater include sediment, nutrients, litter, oil, grease, fuel, sanding and paint chips, and copper and other heavy metals.

Hard surfaces like buildings, roofs, parking lots, driveways, and roads are impervious (meaning that they prevent any 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, which leads to flooding, harm to plant and animal life, and loss of habitat.

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. Water temperatures, levels of toxic metals, and hydrocarbons from petroleum products tend to increase; dissolved oxygen and water clarity decrease; and the acidity/alkalinity of the water typically changes. The result is that nearshore areas are less able to support wildlife like young fish, and the water quality is less desirable for human recreation.

Legal Setting

Wisconsin Pollutant Discharge Elimination System (WPDES) Stormwater Discharge Permit Program

To meet the requirements of the Federal Clean Water Act, the Wisconsin Department of

Natural Resources (WDNR) developed the Wisconsin Pollutant Discharge Elimination System (WPDES) permit program, which is regulated under the authority of ch. NR 216, Wis. Adm. Code. As part of the EPA National Pollutant Discharge Elimination System (NPDES), the WPDES Stormwater Program regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities.

Marinas and boatyards are considered Tier II industries, and are required to have stormwater discharge permits if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication and/or have outdoor boat storage to the extent that these activities have the potential to contaminate stormwater. The stormwater permit does not cover non-stormwater discharges of wastewater, such as boat bottom washing. A General Permit for Wastewater from the Outside Washing of Vehicle, Equipment and Other Objects (WI-0059153-2) is needed for that activity.

As a condition of the stormwater permit, each marina must develop a site-specific stormwater pollution prevention plan (SWPPP) and implement best management practices (BMPs) to ensure that stormwater leaving the marina property will not harm the surrounding water quality. Guidance can be found at *http://dnr.wi.gov/topic/stormwater/industrial/overview.html*.

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

For more information and to access permit forms, please refer to the following websites.

Stormwater Permit Forms:

http://dnr.wi.gov/topic/stormwater/documents/s067857-3_Tier2_Permit.pdf

Stormwater Permit Monitoring Forms:

http://dnr.wi.gov/topic/stormwater/industrial/forms.html

For marinas that are not required to have a permit/SWPPP, the Wisconsin Clean Marina program requires submission of a stormwater information map, *http://www.wisconsincleanmarina.org/LinkClick.aspx?fileticket=UlqQC5IEp7M%3d&tabid=40.*

Soil Erosion and Stormwater Management

Under ch. NR 216, Wis. Adm. Code, construction that disturbs one acre or more of land requires a construction site permit that addresses erosion control and stormwater management. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under the Construction Site Stormwater Runoff General Permit No. WIS067831.

More information can be found at *http://dnr.wi.gov/runoff/pdf/stormwater/ConstructionSitebrochure.pdf.*

Municipal Stormwater Management Programs

Green Bay, Kenosha, Manitowoc, Marinette, Milwaukee, Port Washington, Racine, Sheboygan, Superior, and Two Rivers are required by the WDNR to implement municipal stormwater management programs. These programs include stormwater discharge controls and municipal best management practices that could affect marinas located within the municipal boundary. Marinas located in these communities should coordinate their stormwater management plans with the municipal stormwater utility or public works department on runoff management and pollution prevention.

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Downspouts at Port Washington Marina. Photo credit: Kae DonLevy.

Best Management Practices to Control Stormwater Runoff

Practice Low-Impact Development.

Traditional stormwater management uses structures like curbs, gutters, and storm drains to move water off-site as efficiently as possible, which causes unnaturally high volumes of runoff to flow into receiving waters at high velocity. In comparison, 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.

For this to be successful, stormwater needs to be captured and treated on site. For example, you could direct the runoff from your parking lot to a "rain garden" instead of a storm drain. Rain gardens or constructed wetlands (also known as bioretention areas) are low-lying areas designed to absorb and filter stormwater naturally. They are built with specific layers of soil, sand, and organic mulch that filter the rain as it enters, while the soil absorbs and stores rainwater to nourish the surrounding grasses, trees, and flowers. Rain gardens have the added advantage of being attractive areas that can provide shade and wildlife habitat, act as wind breaks, and reduce noise from surrounding areas. For more information on rain gardens, see *http://dnr.wi.gov/runoff/rg*.

If you need to redirect stormwater on your property, use grassed swales—low-gradient conveyance channels planted with erosion-resistant vegetation. Water generally moves more slowly over grassed swales. They improve water quality by filtering out particulates, taking up nutrients, and promoting infiltration. Grassed swales are not practical on very flat land, on steep slopes, or in wet or poorly drained soils.

Cultivate Vegetated Areas.

Healthy soil and vegetation capture, treat, and slowly release stormwater through a combination of microbial action in the soil, vegetative uptake, evaporation, and transpiration. To make the most of these natural processes:

- Retain areas of natural vegetation where possible.
- Plant landscapes at the edge of parking lots and/or within islands in parking lots to absorb runoff.
- Plant vegetated buffers and trees and shrubs between your upland property and the water's edge, and construct wetlands where appropriate.
- Position downspouts so that they drain to vegetated areas—avoid draining to concrete or asphalt. You can also use rain barrels to capture downspout water and use it to irrigate landscaping during dry weather.
- Use grassed swales instead of pipes to direct stormwater.

Minimize the Amount of Impervious Surfaces.

The fewer impervious areas there are on site, the less runoff you will have to manage. Facilities are advised to check with local authorities about size requirements for road and parking lot surfaces. Many communities still have "aesthetic" requirements that are consistent with traditional concrete and asphalt paving, and a marina facility may have to request a variance in order to use porous surfaces. To reduce the amount of impervious surface:

- Pave only those areas that are absolutely necessary.
- Minimize the length of new roadway 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, refer to the following websites.
    - *http://nemo.uconn.edu/tools/stormwater/pavements.htm*
    - *http://www.lakesuperiorstreams.org/stormwater/toolkit/paving.html*

Use Structural Controls as Necessary.

At times it may be necessary to adopt more traditional stormwater management practices, such as pond systems, wetland systems, infiltration systems, and filter systems.

Stormwater **pond systems** capture and slowly release stormwater runoff. Ponds may hold water permanently (retention ponds) or only temporarily (detention ponds). A dry extended detention pond is an example of a stormwater retention pond system. Dry extended detention ponds (also known as dry ponds, extended detention basins, detention ponds, or extended detention ponds) are designed to detain the stormwater runoff for a minimum amount of time (e.g., 24 hours) after a storm. This time period allows particles and associated pollutants to settle. Although these facilities do not have a large permanent pool, they are often designed with small pools at the inlet and outlet of the basin. They can also be used to provide flood control by including additional flood detention storage.

Stormwater **wetland systems** are designed to mimic the ability of natural wetlands to cleanse and absorb stormwater runoff. One type of created wetland, the pocket wetland, is created by excavating to the high water table elevation. Pocket wetlands can serve drainage areas of 5 to 10 acres.

Infiltration systems are designed to take advantage of soil's natural infiltration and pollutant removal capacities. A dry well is an infiltration system designed to treat roof runoff. Water collected by downspouts is directed into a filter composed of crushed stone and fabric. Bioswales, rain gardens and porous pavement are other examples of infiltration systems.

Filter systems "strain" runoff to remove pollutants. Conventional sand filter systems are constructed of layers of sand, from the coarsest on top to the finest below. The sand overlies either a gravel bed, for infiltration, or perforated underdrains, for discharge of treated water. Oil grit separators are another form of acceptable filter systems. Water from parking lots and other areas likely to have petroleum-based hydrocarbons should be directed through oil grit separators or oil-absorbent fabric before entering any other stormwater management structure.

Some basic principles apply to all stormwater runoff management structures to ensure their effectiveness.

- Select a stormwater management structure that is appropriate for your property.
- Maintain all stormwater management structures properly.
- Use covered storage for equipment and materials used in maintenance.
- Contact the WNDR for information about grant funding to local governments for the installation of stormwater management structures in existing developed areas. For more information on grants, see *http://dnr.wi.gov/aid/urbannonpoint.html*.

Control Sediment from Construction Sites

- Use devices such as straw bales, silt fences, storm drain filters, sediment traps, and

Bio-retention swale at Egg Harbor Marina. Photo credit: Todd Breiby, Wisconsin Coastal Management.

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earth dikes to prevent sediments from leaving construction areas.

- Use chipped wood for mulch or 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. The WDNR has recently simplified the process of obtaining a low-hazard exemption for use of these products. For more information see *http://dnr.wi.gov/org/aw/wm/publications/anewpub/WA608.pdf.*

More information on construction site erosion control regulations can be found at *http://commerce.wi.gov/newsletter/2006/Dec/ConstructionSiteErosion.html* and *http://dnr.wi.gov/topic/stormwater/construction/.*

Also, for information on stormwater technical standards, refer to *http://dnr.wi.gov/topic/stormwater/standards/.*

Stencil Storm Drains

- Stencil or label storm drains with the words "Don't Dump—Drains to Lake (River)" and "No Fish Waste" (if appropriate). Stencils and instructions are available from local watershed groups and councils. Be sure to get permission from the county or city department that maintains storm drains in your community prior to applying any stencils or labels. Generally, the appropriate municipal authority would be the department of public works.

Storm drain stencil at Bayfield City Dock. Photo credit: Gene Clark, UW Sea Grant Institute.

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VESSEL MAINTENANCE AND REPAIR

Vessels require a great deal of attention. They must be scraped, painted, and cleaned.… Each of these activities has the potential to introduce pollutants into the environment.

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Vessel Maintenance and Repair

Environmental Concerns

Legal Setting

- General Permit for Wastewater from the Outside Washing of Vehicles, Equipment and Other Objects

Vessel Maintenance and Repair Activities of Concern

- Work Areas
- Boat Cleaning
- Pressure Washing
- Solvents
- Compound Waxing
- Fiberglassing
- Teak Refinishing
- Varnishing
- Repairing and Maintaining Engines
- Winterizing
- Battery Storage and Disposal
- Boat Disposal
- In-Water Maintenance
- Dust from Sanding
- Debris from Blasting
- Antifouling Paints
- Painting
- Painting Operations
- Overspray
- Paint Stripping
- Educating Boaters
- Links

References

Environmental Concerns

Vessels require a great deal of attention. They must be scraped, painted, and cleaned. Their engines need to be lubricated, and they need to be prepared to withstand the cold of winter. Each of these activities has the potential to introduce pollutants into the environment.

Sanding, blasting, and pressure washing are used to remove paint and aquatic growth. In the process, toxic heavy metals such as copper and tin may be released. 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 to be used in boat shops are also toxic, and many 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.

Legal Setting

General Permit for Wastewater from the Outside Washing of Vehicles, Equipment and Other Objects

The General Permit for Wastewater from the Outside Washing of Vehicles, Equipment and Other Objects (WI-0059153-2) from the Wisconsin Department of Natural Resources (WDNR) is intended to cover a variety of facilities that wash equipment, vehicles, and other objects outside and cannot direct the wastewater to sanitary sewage facilities. This permit contains best management practices (BMPs) designed to prevent degradation of surface waters and/or groundwater. Facilities are required to meet the applicability criteria and implement the BMPs contained in the permit. For more information please refer to: *http://dnr.wi.gov/org/water/wm/ww/gpindex/gpinfo.htm*.

Vessel Maintenance and Repair Activities of Concern

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.

- Perform all major repairs—such as stripping, fiberglassing, and spray painting—in designated areas as far away from the water as possible.
- Collect all maintenance debris. 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.
- Locate boat maintenance areas for new marinas upland of a 100-foot shoreline buffer zone.
- Locate boat maintenance areas on an impervious surface (e.g., asphalt or cement where the 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.
- If asphalt or cement is not practical, perform work over filter fabric or over canvas or plastic tarps. Filter fabric will retain paint chips and other debris yet—unlike plastic, or to a lesser extent, canvas—filter fabric will allow water to pass through. Tarps may potentially be reused.
- Surround the maintenance area (if an impervious surface) with a berm or retaining wall to contain waste and spills. However, this practice is not recommended for pervious surfaces, as it would promote ponding and infiltration of contaminated water.
- Use vegetative or structural controls cited in the chapter titled "Stormwater Management" 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.
- Prohibit maintenance or repair work outside of the designated maintenance areas.
- Clearly mark the work area with signs, such as: "Maintenance Area for Stripping, Fiberglassing, and Spray Painting."

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- Post signs in the boatyard describing BMPs that boat owners and contractors must follow, such as "Use Tarps to Collect Debris" and distribute your policy of environmental rules to customers.
- 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 Cleaning

- Wash boats on land in a contained area where the wash water can be collected and treated.
- Wash boat hulls above the waterline by hand using a soft sponge and frequently enough so that the need to use cleaners will be reduced.
- Avoid using caustic cleaners such as bleach, ammonia or lye. Do not use petroleum-based cleaning products.
- Use cleaning products that are environmentally friendly (e.g., non-toxic and phosphate free). Always follow the instructions on the label and test the product in an inconspicuous area. Use the products sparingly and only when "elbow-grease" is not working. Beware of biodegradable products that may cause water-quality problems.
- Keep boats waxed. A good coat of wax will prevent surface dirt from becoming ingrained in the hull and makes boats easier to clean later.

Pressure Washing

Marinas that perform pressure washing are required to implement the BMPs contained in the General Permit for Wastewater from the Outside Washing of Vehicles, Equipment and Other Objects (WI-0059153-2) from the WDNR.

- When pressure washing ablative/anti-fouling paint, use the least amount of pressure necessary to remove the growth, but leave the paint intact. Where practical, use a regular garden-hose and a soft cloth.
- Pressure wash over a bermed, impermeable surface that allows the wastewater to be contained and filtered to remove sediments.
- Direct wash water containing solids and particulates to a seepage area, such as a grassy area, so that solids are trapped by the soil.
- Visible solids must be removed from wash water before it may be discharged to waterways. At a minimum, allow large particles to settle out.
- Filtration uses devices such as compost socks, screens, filter fabrics, oil/water separators, sand filters, and hay bales to remove particles for water discharged directly to surface waters.
- Collect and dispose of boat-washing debris.
- Other treatment techniques include the following:
    - Chemical treatment relies upon the addition of some type of catalyst to cause the heavy metals and paint solids to settle out of the water.
    - Swirl concentrators are examples of physical treatment that can be used to concentrate pollutants. They are small, compact soil separation devices with no moving parts. Water flowing into a concentrator creates a vortex that centralizes the pollutants. Clean water is then discharged. However,

this process will only remove large particulate material, it does not address the dissolved concentrations present.

- Alternatively, reuse the 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.
- Collected solids must be periodically removed from settling and filtration areas to ensure continued settling and filtration capacity and to avoid solids carry-over to surface waters during periods of high flow.

Solvents

Refer to the chapter titled "Waste Contaminant and Disposal" for further 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.
- Hire a permitted and registered hazardous waste hauler to recycle or dispose of used solvents.
- Direct solvent used to clean spray equipment into containers to prevent evaporation of volatile organic compounds. A closed gun cleaning system will reduce cleaning material costs.
- Use only one cleaning solvent to simplify disposal.
- Use only the minimum amount of solvent (e.g., stripper, thinner) needed for a given job.
- For small jobs, pour the needed solvent into a small container, reducing the contamination of a large amount of solvent.
- Use citrus-based solvents and other similar products with no or low volatility.
- Order your spray painting jobs to minimize coating changes. Fewer changes mean less frequent purging of the spray system. Order your work light to dark.
- Allow solids to settle out of used strippers and thinners so you can reuse solvents.
- Keep records of solvent and paint usage so you have a handle on the amount of hazardous waste generated on site. Marinas that do more than occasional touch-up painting may require an air permit from the WDNR. The Permit Primer can assist marina owners in evaluating whether these regulations apply to them: *http://dnr.wi.gov/permitprimer/air/index.html*.

Compound Waxing

- Check all product material safety data sheets (MSDS) and purchase products that are non-hazardous.
- Conduct compounding and waxing away from the water.
- If possible, use phosphate-free, biodegradable, and non-toxic soap when prepping a hull. 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, since it can spontaneously combust when

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mixed with sawdust and other materials.

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

Teak Refinishing

Teak cleaners, which contain acids and caustics, can be toxic to marine life when spilled in the water.

- Avoid teak cleaners containing acids (such as phosphoric acid or oxalic acid) or those labeled "caustic, corrosive, or acidic." Clean teak with a mild, phosphate-free detergent with bronze wool, if possible.
- If sanding teak, use a dustless or vacuum sander.
- If possible, conduct teak refinishing in an upland maintenance area. If not possible, use safer cleaners and avoid flushing excess teak cleaner and teak oil into the marina basin.

Varnishing

- Avoid the disposal problem of leftover varnish by mixing only as much as is needed for a given 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 of a threat to human health or the environment.
- In case of varnish spills on land, use absorbent material for clean up, and collect any contaminated soils. Spills in waterways should be contained and mopped up with booms or pads that repel water but absorb petroleum.

Bioremediating parts washer at Washburn Marina. Photo Credit: Gene Clark, UW Sea Grant Institute.

Repairing and Maintaining Engines

- Store engines and engine parts under cover on impervious surfaces such as asphalt or concrete.
- Do not wash engine parts over the bare ground or water.
- Use dry pre-cleaning methods, such as wire brushing.
- Avoid unnecessary parts cleaning.
- Adopt alternatives to solvent-based parts washers such as bioremediation systems that take advantage of microbes to digest petroleum. Bioremediation systems are self-contained with no effluent discharge. The cleaning fluid is a mixture of detergent and hot water. Microbes that are hydrocarbon degrading are added periodically to digest the accumulated wastes.
- Use water-based, non-VOC cleaners that are less hazardous than solvent-based degreasers. They are also less toxic and non-flammable.
- If you use a solvent to clean engine parts, do so in a container or parts washer with a lid 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 drip pans when handling any type of liquid. Use separate drip pans for each fluid to avoid mixing. Recycle the collected fluid. Mixed liquids cannot be recycled and must be stored and disposed of as hazardous waste. Do not discharge antifreeze to

drains or surface waters.

- Use funnels to transfer fluids.
- Drain all fluids from parts prior to disposal.
- Clean engine repair areas regularly using dry cleanup methods, e.g., capture petroleum spills with oil-absorbent pads.
- Prohibit the practice of hosing down the shop floor.

Winterizing

Antifreeze

- Do not allow any "blow out" of antifreeze directly into the water or onto any surface that would drain to the water. Provide an antifreeze recapture and recycling service.
- Use only propylene glycol antifreeze for all systems. It is substantially less toxic than ethylene glycol antifreeze.
- For health reasons, ethylene glycol should never be used in potable water systems; it is highly toxic and cannot be reliably purged come springtime.
- If you use ethylene glycol, it must be captured and disposed of properly and not down a drain that goes to the wastewater treatment plant (WWTP).
- Use the minimum amount of antifreeze necessary for the job.

Gasoline

- Add stabilizers to fuel to prevent degradation. Stabilizers are available for gasoline and diesel fuels and for crankcase oil. These products protect engines by preventing corrosion and the formation of sludge, gum, and varnish. Also, the problem of disposing of stale fuel in spring is eliminated.
- Be sure fuel tanks are 85-90 percent full to prevent flammable fumes from accumulating and to minimize the possibility of condensation leading to corrosion. Do not fill the tank more than 90 percent full. The fuel will expands as it warms in the springtime; fuel will spill out the vent line of a full inboard tank.
- Be sure the gas cap seals tightly.
- Inspect bilges prior to extended boat storage. Require boat owners to clean all water, oil, or foreign materials from the bilge using oil-absorbent material.

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

- Landfilling and burning lead acid batteries is prohibited in Wisconsin (s. 287.01 (1m) (a) and (am), Wis. Stats.).
- Avoid long-term storage of spent lead acid batteries by sending accumulated batteries to a reclaimer within six months of receipt. Limit accumulation of large quantities of spent batteries. If necessary, ship more frequently.
- Store spent lead acid batteries upright in a secure location, protected from freezing.
- Never stack batteries directly on top of each other. Layer with wood.

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- Never drain batteries or crack the casings.
- Place cracked or leaking batteries in a sturdy, acid-resistant, leak-proof, sealed container (e.g., a sealable five-gallon plastic pail). The container should be kept closed within the battery storage area.
- Strap batteries to pallets or wrap batteries and pallet in plastic during transport.
- Keep written records of weekly inspections of spent lead acid batteries.
- For those marinas that sell lead acid batteries, Wisconsin retailers are required to accept used batteries with the sale of a lead acid battery (s. 287.18 (5), Wis. Stats.).

Boat Disposal

- Empty the boat's 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 (i.e., some electronic equipment, bilge pump switches, old ship's barometers, fluorescent lights) and manage as universal waste.
- Reduce the size of 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

- If the impacts of in-water cleaning or maintenance activities (regardless of the area involved) cannot be contained or mitigated against, remove the boat from the water. No debris or chemical wastes should be allowed to fall into the water.
- Keep containers of cleaning and maintenance products closed.
- Restrict or prohibit sanding on the water. When it is absolutely necessary to sand on the water, use vacuum sanders to prevent dust from falling into 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. Given the concentration of boats, underwater cleaning is dangerous to divers and the heavy metals that are released are harmful to aquatic life. Insurance to cover divers is also expensive.

Dust from Sanding

- Do not let dust fall onto the ground or into the water or become airborne.
- Invest in vacuum sanders and grinders. These tools collect dust as soon as it is removed from the hull. Vacuum sanders allow workers to sand a hull more quickly

than with conventional sanders. Additionally, because paint is collected as it is removed from the hull, health risks to workers are reduced.

- Require tenants and contractors to use vacuum sanders. Rent or loan the equipment to tenants or contractors.
- Establish a marina policy to prohibit sanding without vacuum equipment.
- Conduct sanding in the maintenance area or over a drop cloth.
- Restrict or prohibit sanding on or near the water to the greatest extent possible.
- When sanding on the water is unavoidable, use a vacuum sander and keep dust out of the water.
- Use a damp cloth to wipe off small amounts of sanding dust.
- Collect debris. Determine if the debris is hazardous or non-hazardous waste. If it is non-hazardous and does not contain free liquids, take it to a municipal solid waste landfill or dispose of in a dumpster.

Debris from Blasting

- Prohibit uncontained abrasive (sand) blasting at your facility.
- Perform abrasive blasting in the boat maintenance area within a structure or under a plastic tarp enclosure. Do not allow debris to escape from the enclosure.
- If tarp enclosures are used, avoid blasting on wind days. Because tarps are not rigid, they do not eliminate wind flow through the blasting area, so they allow the wind to carry blasting material and residue into surface waters.
- Investigate alternatives to traditional media blasting. Hydroblasting and mechanical peeling essentially eliminate air quality problems. However, debris must still be collected—consider using a filter cloth ground cover.
- 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. Dust and toxic fumes are eliminated.
- Invest in a closed, plastic medium blast (PMB) system. These systems blast with small plastic bits. Once the blasting is completed, the spent material and the paint chips are vacuumed into a machine that separates the plastic from the paint dust. The plastic is then cleaned and may be reused. The paint dust is collected for disposal. 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.
- Recycle used blast media. Investigate companies that recycle used blast media into new media or other products.

Antifouling Paints

Antifouling bottom paints protect hulls from zebra mussels, algae, and other fouling organisms that can interfere with vessel performance. Pesticides and heavy metals within the paints also harm fish and other non-target species. Most paints work by slowly releasing a biocide, generally cuprous oxide (Cu2O).

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Copper-based paints are not used on aluminum hulls; the interaction between copper and aluminum leads to corrosion. Instead, tin-based paints (tributyl tin or TBT) are often used on aluminum-hulled vessels. Because tin is extremely toxic, it must applied cautiously. Concentrations of TBT as low as a few parts per trillion have caused abnormal development in shellfish (EPA 1993). Tin is easily absorbed by fish through their gills and accumulated to high levels in sediments. For these reasons, Federal law restricts the use of tin-based paints to aluminum vessels, boats larger than 82 feet (25 meters), and outboard motors and lower drive units.

In Wisconsin, tributyl tin is classified as a limited use pesticide—"a pesticide which under certain conditions or usages constitutes a serious hazard to wild animals other than those it is intended to control" (NR 80.01 (4)). Wisconsin allows the use of TBT compounds and organotin derivatives if usage does not involve addition to waters of the state or to structures in contact with waters of the state or if the paint does not have a release rate greater than 4 micrograms per day and is used on a boat at least 65 feet in length or on an aluminum boat, boat part or boat accessory (NR 80.03(13)).

License Requirements for Painting with Antifouling Paints

For marinas that apply antifouling paints to boats, there are certain licensing and certification requirements by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP). These requirements are dependent on whether the marina is applying the antifouling paints in a for-hire status and whether the antifouling paint is a restricted-use product. For more information on the certification process, please refer to: *http://ww2.wisconsin.gov/state/license/app;jsessionid=0001lf8fq0j-XilOnpbjKmuZ0Gz:-H91OL?COMMAND=gov.wi.state.cpp.license.command.ShowPermitTypes&selectedLicense=2001010315212523897143*, or contact the DATCP pesticide certification and licensing program manager at (608) 224-4551.

Marinas that apply antifouling paint for hire need a pesticide application business location license. In addition, the person(s) applying the antifouling paint would need to be a certified pesticide applicator (within 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.

At marinas where a person applies a **nonrestricted-use pesticide** containing antifouling paint to his or her boat, or a boat owned by his or her employer, the pesticide applicator licensing requirements **do not** apply. However, if the person is applying a **restricted-use pesticide**, then he or she would need to be a certified pesticide applicator within the antifouling paint category and be licensed as an individual commercial applicator. The business that employs the person applying the antifouling paint to a boat owned by the business would not need to obtain the pesticide application business location license.

Antifouling paints can be separated into three general categories:

- **Leaching Paints.** Water-soluble portions of leaching antifouling paints dissolve slowly in water, releasing the pesticide. The insoluble portion of the paint film remains on the hull. The depleted paint film must be removed before the boat is repainted.
- **Ablative Paints.** Ablative antifouling paints also leach some toxins into the water. The major difference is that as the active ingredient is leached out, the underlying film weakens and is polished off as the boat moves through the water. As the depleted film is removed, fresh antifouling paint is exposed. There are several water-based ablative paints on the market that are up to 97 percent solvent free. As a result, levels of VOCs are substantially reduced as compared to solvent-based paints. Ease of cleanup is another advantage of water-based paints.
- **Non-Toxic Coatings.** Teflon, polyurethane, and silicone paints are non-toxic options. All deter fouling with hard, slick surfaces.

Painting

- Recommend to your customers antifouling paints that contain the minimal amount of toxic ingredient necessary for the expected conditions.
- Avoid soft ablative paints.
- Use water-based paints whenever practical.
- Stay informed about antifouling products like Teflon, silicone, polyurethane, and wax that have limited negative impacts. Inform your customers about such paints.
- Store boats out of the water, where feasible, to eliminate the need for antifouling paints.
- Waste antifouling paints containing pesticides, solvents, or metals such as barium, chromium, cadmium or lead may need to be disposed of as a RCRA hazardous waste. Hazardous waste antifouling paints cannot be mixed with non-hazardous paints (e.g., latex) for disposal.

Painting Operations

- Use brushes and rollers whenever possible.
- Consider establishing a marina policy that prohibits customer paint spraying.
- Reduce paint overspray and solvent emissions by minimizing the use of spray equipment.
- Prohibit spray painting on the water.
- Limit in-water painting to small jobs. Any substantial painting should be done on land, in the boat maintenance area, and/or over a ground cloth.
- If painting with a brush or roller on the water, transfer the paint to the boat in a small (less than one gallon), tightly covered container. Small containers mean small spills.
- Mix only as much paint as is needed for a given job. Consider sharing leftover paints with customers or setting up an exchange area for customers to swap unused items.
- Mix paints, solvents, and reducers in a designated area indoors or under a shed and far from the shore.
- Keep records of paint use to show when excess paint was mixed for a job. Use the information to prevent over-mixing in the future.

Overspray

In some cases, spray painting is the only practical choice for paint/solvent application. Minimize the impact of spray painting by following these recommendations:

- Conduct all spray painting on land, in a spray booth, or under a tarp.
- Use equipment with high transfer efficiency. Tools such as high-volume, low-pressure (HVLP) spray guns direct more paint onto the work surface than conventional spray guns. As a result, less paint is in the air, fewer volatile organic compounds are released, less paint is used, and cleanup costs are reduced. Air atomizer spray guns and gravity feed guns are other types of highly efficient spray equipment.
- Educate personnel on how to properly operate spray equipment to reduce overspray and minimize the amount of paint per job.

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Paint Stripping

- Consider alternatives to chemical paint stripping depending on the characteristics of the surface being stripped, the type of paint being removed, and the volume and type of waste produced. Alternatives include scraping, sanding, and/or abrasive blasting. Use a heat gun to remove paint and varnish where appropriate.
- If paint strippers must be used, use citrus-based or water-based products, which are less hazardous.
- Use only the minimum amount of paint stripper needed for a job.
- Prevent evaporation by using tight-fitting lids or stoppers. Reducing evaporation protects air quality and saves product and money.
- Reduce the chance of spills during transport by storing unused paint stripper where it's used most in the shop. Place the product on an impervious base.
- Encourage careful use by informing all workers and operators of the hazardous nature of solvents and the purchasing and recycling costs.
- 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 Wisconsin 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 Wisconsin Clean Boater Tip Sheets for this section include "Engine Maintenance," "Hull Maintenance," "Spring Start-Up: Antifreeze Collection & Disposal" and "Boat Cleaning."
- Inform your boaters/clients when and where they can take their recyclable materials as well as any hazardous waste.

Links

- Publications and forms on used oil, antifreeze, and universal waste (mercury-containing devices) are available from: *http://dnr.wi.gov/org/aw/wm/publications/*.
- For information on refrigerants: *http://dnr.wi.gov/topic/AirQuality/Refrigerants.html*.

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.

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PETROLEUM CONTROL

The Clean Water Act prohibits the discharge of oil or oily waste into or upon navigable waters in the United States including all Great Lakes.

Petroleum Control

Environmental Concerns

Legal Setting

- Federal Laws
- Wisconsin State Laws

Best Management Practices for Preventing Spills at the Source

- Install and Protect Petroleum Storage Tanks Properly
- Supervise Fueling
- Install Environmental Controls at the Pump
- Maintain Fuel Transfer Equipment
- Avoid Waves and Wakes
- Turn down the Pressure
- Oil-Absorbent Materials
- Minimize Spills and Leaks from Machinery
- Offer Spill-Proof Oil Changes
- Provide an Oil/Water Separator
- Educate Boaters

Best Management Practices for Emergency Planning

- Prepare a Spill Prevention, Control, and Countermeasure (SPCC) Plan
- Assess Hazards
- Develop Emergency Response Plans
- Make Plans Accessible
- Train Employees
- Share Your Emergency Response Plan
- Maintain Oil Spill Response Equipment
- Store Oil Spill Response Equipment Wisely
- Be Prepared for a Fuel Spill
- Be Prepared for a Fire
- Maintain Material Safety Data Sheets
- File Tier Two Forms

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, some

with adverse environmental effects. 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 species of aquatic plants, animals, and microbes.

Legal Setting

Federal Laws

- **Water Pollution Control Act (Clean Water Act)**
  Because of the harm associated with petroleum, the discharge of oil or fuel is absolutely prohibited. The Clean Water Act (33 CFR 153.305) prohibits the discharge of oil or oily waste into or upon navigable waters of the United States, including all Great Lakes, 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.

  The Clean Water Act also prohibits the use of soaps or other dispersing agents 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. You may be fined up to $25,000 per incident for the unauthorized use of soap or other dispersing agents on the water or in the bilge.

- In Wisconsin, all spills must be reported immediately to the Wisconsin Department of Natural Resources (WDNR) using the 24-hour toll-free hotline: (800) 943-0003.

  The U. S. Coast Guard must be notified any time a spill produces a sheen on the water. Call the National Response Center 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.

  All boats 26 feet or more in length are required to display a placard that is at least 5 x 8 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.

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- **United States Code (U.S.C.), Title 33, Chapter 26, Subchapter III, § 1321. Oil and Hazardous Substance Liability**
  This federal law administers the liability and penalties of a fuel discharge to waters within federal jurisdictions, including the Great Lakes.

Wisconsin State Laws

Wisconsin state laws also prohibit the discharge of hazardous substances, including fuel, oil, or oily waste into the environment. This includes navigable waters, groundwater, soil, and air.

- **Wisconsin Administrative Code SPS 310, Flammable, Combustible and Hazardous Liquids**
  These Wisconsin rules govern the installation and operation of aboveground and underground petroleum storage tanks. Following these rules should keep petroleum out of the environment.

- **Wisconsin Administrative Code NR 700 – 750, Environmental Protection, Investigation and Remediation**
  These Wisconsin rules govern what happens when petroleum products are released into the environment, including release event reporting, investigation, and cleanup.

Best Management Practices for Preventing Spills at the Source

Install and Protect Petroleum Storage Tanks Properly

Fuel storage tanks at marinas typically hold from 1,000 to 10,000 gallons of fuel; if a tank were to rupture, the consequences could be devasting. Even if the tank system leaks or drips, the impact to the environment can be significant and expensive to remediate. Wisconsin's flammable, combustible, and hazardous liquids administrative rule (SPS 310), revised February 1, 2010, addresses all aspects of storage tanks and the associated systems used to store petroleum and hazardous products above and below ground. SPS 310 details the requirements for installing, operating, and closing these tanks. Aboveground storage tanks (ASTs) and underground storage tanks (USTs) today are varied and complex and must be installed by a certified installer. Likewise, these tanks must be repaired and closed by state-certified personal. Operator training is required, and inspections are performed at least every three years, but usually annually. Although the day-to-day operation of fuel storage systems is quite automated, the marina operator must remain diligent to prevent any release to the environment, whether it is a catastrophic release or a drip.

As required by the federal Energy Policy of 2005, **marinas that have USTs must have operator training by January 1, 2012 or, for small businesses, by August 8, 2012**. Wisconsin SPS 310, Subchapter VIII details the requirements for training of operators of USTs. There are three classes of operator training: class A is the owner, class B is the manager in charge with supervising day-to-day operations, and class C are the on-site employees. For more information on UST training, please refer to: *http://dsps.wi.gov/er/ER-BST-FedRegUST_OperatorTraining.html*.

AST and UST BMPs

- ASTs located on land shall be set back at least 10 feet from the ordinary high water mark of a navigable body of water (Wisconsin, SPS 310.640).
- Allow adequate space between stored boats and ASTs.
- Locate single-walled ASTs within a dike or over an impervious storage area with containment volumes equal to 1.1 times the capacity of the storage tank(s). Double-walled tanks over land do not need a dike. Design containment areas with spigots to drain collected materials. For fuel collected, contact your fuel supplier or waste oil hauler for disposal options. (Do not allow fuel or oil to evaporate.) Uncontaminated rainwater collected by the dike can be allowed to evaporate.
- Cover the AST with a roof to prevent rainwater from filling the containment area, or provide a means for pumping out any accumulated oil/water mix.
- Each operating day, measure inventory. Record the amount of fuel dispensed and the amount remaining in the tank.
- Record deliveries. Take a daily reading of the amount of fuel delivered and pumped.
- Inspect ASTs and piping regularly for drips or leaks, and monitor USTs at least every 30 days for leaks (WI Department of Safety and Professional Services, SPS 310.510).
- Maintain UST operator training documentation on site (WI Department of Safety and Professional Services, SPS 310.870).
- Keep inspection records indicating compliance with petroleum storage tank requirements.
- Contact the Wisconsin Department of Safety and Professional Services for further information and assistance with installation or plan review.
- Be aware that the municipality in which the tank is located may have additional requirements for the siting of the tank.

Fuel spill cup at Pikes Bay marina. Photo credit: Gene Clark, UW Sea Grant Institute.

Supervise Fueling

Marina Employees

- Always have a trained employee at the fuel dock to oversee or assist with fueling.
- Train employees to:
  - Clarify what the boater is asking for. For example, as your employee passes the fuel nozzle to the boater, have him or her say, "This is gasoline. You asked for gasoline."
  - Hand boaters oil-absorbent pads with the fuel nozzle. Request that boaters use them to capture backsplash and vent line overflow.
  - 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 added to the next boat to fuel.
  - Observe fueling practices; make sure fuel is not accidently put into the holding or water tank.
  - Listen to filler pipes to anticipate when tanks are nearly full.

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Fuel pump sign at Pikes Bay marina. Photo credit: Gene Clark, UW Sea Grant Institute.

Absorbent pad on fuel pump at Pikes Bay marina. Photo credit: Gene Clark, UW Sea Grant Institute.

Boaters

- Require boaters to stay with their craft during fueling.
- Require all passengers to disembark from gasoline-powered vessels before fueling.
- Instruct boaters to follow these safety precautions:
    - 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.
    - Maintain nozzle contact with the fill pipe to prevent static spark.
    - Use a slow filling rate at the beginning and end of fueling.
    - Inspect the bilge after fueling for leakage or fuel odors.
    - Turn on boat bilge blowers for several minutes before starting the engine. Ventilate until odors are gone.
- Remind boaters that gasoline vapors are heavier than air; they will settle in a boat's lower areas.
- Encourage boaters to fill their fuel tanks just before leaving on a trip to reduce spillage due to thermal expansion and rocking, i.e., if the fuel is used before it warms up, it cannot spill overboard. If boaters prefer to refuel upon their return to port, encourage them to fill their tanks to no more than 90% of capacity. Also, leave expansion space in fuel tanks of boats going into storage.
- Encourage boaters to keep their engines well-tuned. Properly maintained engines use fuel and oil more efficiently and are less likely to leak and/or emit oil and vapor emissions into the environment.

Install Environmental Controls at the Pump

- Hose lengths more than 18 feet long, used for dispensing fuel, shall be reeled, racked or otherwise protected from damage (WI Department of Safety and Professional Services, SPS 310.640).
- Do not install fuel nozzle holding clips. The use of holding clips to keep fuel nozzles open is illegal at marina fuel docks (WI Department of Safety and Professional Services, SPS 310.640).
- Install automatic back pressure shut-off nozzles on fuel pump discharge hoses to automatically stop the flow of fuel into a boat's fuel tank when sufficient reverse pressure is created.
- Consider installing fuel nozzles that redirect blow-back into vessels' fuel tanks or vapor control nozzles to capture fumes.
- Offer your services to install fuel/air separators on boats.
- Maintain a supply of oil-absorbent pads and pillows at the fuel dock to mop up spills on the dock and on the water.
- Make bilge "pillows" to remove oil from the bilge water available to boaters.
- Secure oil-absorbent material 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.

- Keep used absorbents in covered fireproof containers to prevent evaporation.
- 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.
- Place small gas cans in drip pans when filling. Maintain proper grounding, but have oil-absorbent materials nearby.

Maintain Fuel Transfer Equipment

- Inspect transfer equipment regularly, and fix all leaks immediately.
- Maintain transfer equipment and hoses to ensure they are in good working order. Replace hoses, pipes, and tanks before they leak. Inspect hoses and hose connectors for frayed fabric or other damage that may lead to leaks.
- Maintain transfer equipment and hoses from the fuel delivery truck to ensure they are in good working order. Make sure good connections are made to the delivery nozzles.
- 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 and/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 entering or passing through the main berthing area.
- Provide a stable platform for fueling personal watercraft. You may purchase prefabricated drive-on docks or modify an existing dock by cutting a v-shaped berth and covering it with outdoor carpeting. Consider placing the personal watercraft fueling area at the end of the fuel pier to reduce conflict with larger boats.

Turn down the Pressure

Problems with backsplash and vent-line overflow are often due to the high-pressure flow of fuel from the pump.

- Ask your fuel company representative to set the delivery rate appropriately for the size of boats at your marina.

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 types of products are useful for capturing spills at the fuel dock, cleansing bilge water, and wiping up spills in engine maintenance areas.

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

Another type of oil-absorbent product is a boom constructed of oil-absorbent polypropylene fabric and filled with dehydrated microbes. These booms hold the petroleum in the fabric until it is digested by microbes, minimizing threats associated with free-floating petroleum.

Advocate the Use of Oil-Absorbent Materials

- Make absorbent materials readily available. Distribute pads, pillows, or booms to your customers.
- Require tenants to use oil-absorbent materials as part of your lease agreement.
- Post instructions at the fuel dock directing staff and patrons to clean up spilled fuel from the dock and water immediately with oil-absorbent material.

Disposal of Oil-Absorbent Materials

How you dispose of used oil-absorbent material depends on what type of product it is and how it was used.

- Oil-absorbent materials are banned from Wisconsin landfills unless there is no free-flowing oil in the absorbent material and the absorbents are not hazardous (WI Act 152, 2011).
- 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.
- Standard absorbents saturated with gasoline should be stored in fireproof containers and disposed of as hazardous waste.
- Small pads used to clean up minor drips at the fuel pump may be allowed to air dry and reused.
- Call your municipal solid waste department or WDNR regional office for oil recycling locations.

Minimize Spills and Leaks from Machinery

- Take steps to prevent rainwater from coming into contact with or transporting oils and greases in runoff.
- Use non-water-soluble grease on Travelifts, fork lifts, cranes, and winches.
- Place containment berms with containment volumes equal to 1.1 times the capacity of the fuel tank around fixed pieces of machinery that use oil and gas. The machinery should be placed on an impervious pad. Design containment areas so that oil/water mixes can be collected. Dispose of all collected material appropriately. Refer to the "Waste Containment and

Disposal" section of this guidebook. If possible, cover the machinery with a roof to prevent rainwater from filling the containment area.

- Place leak-proof drip pans beneath machinery. Empty the pans regularly, being careful to dispose of the material properly. (Uncontaminated oil and antifreeze may be recycled.)
- Place oil-absorbent pads under machinery.

Offer Spill-Proof Oil Changes

- 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.
- 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. If you currently pay to dispose of your filters per drum, you will reduce disposal costs by placing five times more crushed filters in each drum**.**
- Slip a plastic bag over used oil filters prior to their removal to capture any drips. Hot drain the filter by punching a hole in the dome end and draining for 24 hours. Recycle the collected oil and metal canister. Oil filters were banned form Wisconsin landfills as of January 1, 2011 (WI Act 86, 2009).
- Encourage the use of spill-proof oil change equipment as a condition of your slip rental agreement.

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 Wisconsin Clean Boater Tip Sheet titled "Fuel and Oil Control" 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 Emergency Planning

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

- The U.S. Environmental Protection Agency's Oil Pollution Prevention regulation 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 (40 CFR 112) 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."

- The plan must address:

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- 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

- In some cases, the SPCC plan must be certified by a professional engineer, and in other cases facility managers can "self-certify" their plan. Because the SPCC rule is subject to change, marina operators should visit *www.epa.gov/osweroe1/content/spcc/index.htm* to view up-to-date rules and criteria.
- The SPCC plan must be kept on-site for EPA review. If a single spill of greater than 1,000 gallons occurs or two discharges of 42 gallons or more occur within one year, a copy of the SPCC plan must be submitted to EPA Region 5. For more information call: (312) 886-7187 or visit the following websites:
  - *http://dnr.wi.gov/topic/spills/*
  - *www.epa.gov/region5superfund/oil/spcc.html*
- SPCC plans must be reviewed by the marina owner or manager at least every five years (40 CFR 112.5). A record of the review should be kept in the beginning of the plan, including the reviewer's signature, date signed, and a list of any changes. Major changes such as new tank installations or removals require a formal amendment signed by an engineer.
- Use the template in Appendix I to create your SPCC plan.

Assess Hazards

- Consider and plan for likely threats, such as:
  - Fuel spill
  - Holding or water tank filled with gas
  - Spill at the storage area, such as used oil, antifreeze, or solvents
  - Fire
  - Health emergency
  - High winds or tornado
  - Flood
  - Vehicular collision

Develop Emergency Response Plans

An emergency response plan is required at fixed and mobile facilities capable of transferring oil to or from a vessel with a capacity of 10,500 gallons or more.

- Develop written procedures describing actions to be taken under given circumstances. The plans should be clear, concise, and easy to use during an emergency, e.g., use a large font size and clearly labeled section tabs. Each emergency response plan should contain the following information:

  Where:

  - In the very front of the plan, insert a laminated site plan of the facility showing valves, pipes, tanks, structures, roads, hydrants,

docks, power and fuel shut-offs, hazardous material storage locations, and telephones. Also, include a list of emergency phone numbers: U.S. Coast Guard's National Response Center (800) 424-8802, local fire and police departments, the marina owner, neighboring marinas that have emergency response equipment, and spill response contractors.

- Describe where response material is located.

Who:

- Identify who is responsible for taking what action, including deploying equipment, contacting emergency agencies, etc.
- Designate one person on the marina staff as the official spokesperson for the facility.
- Include a brief description of each agency's jurisdiction and information about what type of equipment and services are available from neighboring marinas and spill response firms.

What:

- State what action should be taken during an emergency and, based on likely threats, what equipment should be deployed. Include information about what type of equipment is available on site and what its characteristics and capabilities are.
- Characterize the facility's waterfront and vessels.
- Describe the type, amount, and location of materials stored on site, e.g., petroleum and hazardous materials.

How:

- Explain how the equipment should be used and how to dispose of waste and used equipment.

When:

- Indicate when additional resources should be called for assistance.
- Update the plans annually to include any new technology or equipment and to confirm phone numbers.
- Schedule and record employee training for implementing the plan.

- Use the example emergency response plan in Appendix II or obtain a copy of the *Panic Preventer File for Marinas* from Florida Sea Grant to create your emergency plan. (Refer to Appendix II.)

Make Plans Accessible

- Keep copies of all emergency response plans in a readily accessible location.
- Place a copy of the spill prevention, control, and countermeasure plan (SPCC) in the oil spill response kit.

Train Employees

- Review plans and response procedures with staff at the beginning of each boating season.

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- Train employees in the use of containment measures.
- Run emergency response drills at least twice annually.
- Invite the U.S. Coast Guard and local fire department to demonstrate emergency response procedures at your marina.

Share Your Emergency Response Plan

- Inform your local fire department and harbormaster (if applicable) about your emergency response plans and equipment.
- Let neighboring marinas know what resources are available at your marina.

Maintain Oil Spill Response Equipment

- Maintain enough oil spill response equipment to contain the greatest potential spill at your facility.
- Store enough booms to encircle the largest boat in your facility. Vessel length x 3 = required length of boom.

Store Oil Spill Response Equipment Wisely

- Store the equipment where the greatest threat of an oil spill exists—fuel-receiving and fuel-dispensing areas.
- Store materials in an enclosed container or bin that is accessible to all staff—especially those who handle the fueling operations.
- Mark the storage site with a sign reading "Oil Spill Response Kit." Include instructions for deploying pads and booms and notification that all spills must be reported to the U.S. Coast Guard at (800) 424-8802 and the WDNR at (800) 943-0003.
- 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.
- If the bin is left unlocked, check the inventory regularly.

Spill kit at Washburn marina. Photo credit: Gene Clark, UW Sea Grant Institute.

Be Prepared for a Fuel Spill

What do you do when oil, gas, or diesel is spilled on the water?

1. Control—protect yourself, stop the source, protect others, and stay at the site.

2. Contain—confine the oil or diesel spill, protect water resources, recover and/or absorb liquids, and cover dry materials. However, 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.

3. Contact authorities—call the U.S. Coast Guard's National Response Center at (800) 424-8802 and the WDNR at (800) 943-0003.

4. Clean up—decontaminate the spill site.

Calling the National Response Center does not designate you as the responsible party for a spill nor does it initiate a penalty against the reporter. The National Response Center is used to disseminate information to all

required agencies in a quick and efficient manner. Failure to report spills to the U.S. Coast Guard may result in civil penalties.

Call the National Response Center if oil pollution floats into your marina from an unknown source. The U.S. Coast Guard will clean up the spill with their resources. They will also investigate and attempt to identify and eliminate the source of the spill. You will not be held liable for a spill that did not originate at your facility.

Be Prepared for a Fire

- Meet the National Fire Protection Association's standards for marinas: NFPA 303, Fire Protection Standards for Marinas and Boatyards; NFPA 302, Fire Protection Standards for Pleasure and Commercial Motor Craft; NFPA 30A, Automotive and Marine Service Station Code; NFPA 307, Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves; and NFPA 33, Standard for Spray Application Using Flammable and Combustible Materials.
- Be sure hydrants are available to allow fire fighting throughout your facility.
- Install smoke detectors.
- Provide and maintain adequate, readily accessible, and clearly marked fire extinguishers throughout the marina, especially near fueling stations.
- Inspect and test all firefighting equipment and systems regularly. Test fire extinguishers annually.
- Train personnel on fire safety and response—who to call, location of hydrants, use of portable extinguisher, etc.
- Provide ready access to all piers, floats, and wharves for municipal firefighting equipment.
- Invite the local fire department to train at your marina annually with your employees. These annual visits will also help the fire department become familiar with your facility.
- Have annual fire insprections indicating complicance with all applicable fire codes. Maintain fire inspection records.

Maintain Material Safety Data Sheets

- Keep a file of Material Safety Data Sheets (MSDSs) for all products used at your facility, as required by the Occupational Safety and Health Act of 1970 (29 USC Sec. 657). MSDSs must be readily accessible to employees who use the chemicals, materials, or products. Keep in mind that during an emergency this file will not tell you what quantity is on site or even whether all the materials listed are present.
- Inform the Local Emergency Planning Committee (LEPC) what materials you store and what is released when they burn.

File Tier Two Forms

- 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. The form must be submitted to Wisconsin Emergency

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Management, your local Emergency Planning Committee (LEPC), and your local fire department. Marinas are not included in the retail gas exemption; this exemption only applies to motor vehicles on land. Forms and contact information for LEPCs are available from Wisconsin Emergency Management at *http://emergencymanagement.wi.gov/EPCRA/forms.asp* or (608) 242-3232.

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SEWAGE HANDLING

Pollutants tend to concentrate within the sheltered environment of marina basins.

Sewage Handling

Environmental Concerns

Legal Setting

- No-Discharge Zones
- Marine Sanitation Devices
- Pump-Out Stations

Best Management Practices

- Install a Pump-Out System
- Provide Shoreside Restrooms
- Prohibit Discharge from Type I and Type II MSDs at the Slip or Mooring
- Design and Maintain Septic Systems to Protect Water Quality and Public Health
- Provide Facilities for Live-Aboards
- Offer MSD Inspections
- Encourage Compliance
- Manage Pet Waste and Wildlife
- Handle Graywater Properly
- Educate Boaters

References

Environmental Concerns

Pollutants tend to concentrate within the sheltered environment of marina basins, which makes 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 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 Wisconsin due to elevated *E. coli* bacteria levels (an indicator of sewage contamination).

While the potential volume of sewage that could be released from boats is relatively small as compared with municipal sewer overflows, the concentration of the sewage from boats can be much higher because marine toilets use little or no water.

Legal Setting

No-Discharge Zones

A No-Discharge Zone (NDZ) is an area of a waterbody or an entire waterbody into which the discharge of sewage (whether treated or untreated) from all vessels is completely prohibited. All freshwater lakes, reservoirs, and rivers not capable of interstate vessel travel are defined by the Federal Clean Water Act as NDZs. States may establish an NDZ in other state waters with the approval of the U.S. Environmental Protection Agency. Since NDZ waters have greater environmental protection, even vessels with Type I or II marine sanitation devices are prohibited from discharging treated sewage into these areas, and they must be properly secured to ensure that sewage discharge will be prevented (i.e., closed seacock and padlock).

All waters of Wisconsin are NDZs, except for the Wisconsin waters of Lake Superior, the Mississippi River, and part of the St. Croix River (refer to map). In Wisconsin, it is illegal to dispose of any toilet wastes in any manner into the water while maintaining or operating any boat equipped with toilets (State Statute Sec. 30.71 (2)).

Figure: No-Discharge Zones in Wisconsin. In addition, all inland lakes and rivers (except for the Mississippi River and part of the St. Croix River) are also NDZs.

Marine Sanitation Devices

The Federal Clean Water Act requires that all vessels with installed toilets have a U.S. Coast Guard-certified Marine Sanitation Device (MSD) Type I, Type II, or Type III.

Type I and II MSDs are used to pretreat boat sewage before it is discharged (except where prohibited in a no-discharge zone or as prohibited by state or local ordinances). Type I

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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 "Y" valve secured to allow waste to enter a proper 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; therefore, MSD requirements do not apply to vessels with portable toilets. Portable toilets should be properly emptied on shore. Again, it is illegal to discharge sewage into state waterways. Most pump-out facilities have wand attachments to empty portable toilets, and some marinas have portable toilet dump stations.

Pump-Out Stations

Wisconsin Statute Sec. 30.71 (3) requires that any marina that provides berths or moorings to five or more boats equipped with toilets and is located on any outlying water must provide pump-out stations. Outlying waters are defined in Sec. 29.001 (63) as Lake Superior, Lake Michigan, Green Bay, Sturgeon Bay, Sawyer's Harbor, and the Fox River from its mouth up to the dam at De Pere.

Best Management Practices

Install a Pump-Out System

Pump-out at Egg Harbor Marina. Photo credit: Theresa Qualls, UW Sea Grant Institute.

Help boaters meet the requirements of the law by providing a convenient, reliable marine sewage disposal facility—a pump-out station. Marina operators also benefit from the installation of a pump-out station. The presence of the pump-out facility shows the public that you are environmentally responsible. The need to pump out MSDs regularly will draw a steady stream of customers to your dock, and each arriving vessel presents an opportunity to sell fuel, hardware, repair services, etc.

The Clean Vessel Act (CVA) Program is a nationwide competitive federal grant program that provides funds to states to clean up the nation's waterways. Any public or private marina in Wisconsin is eligible to apply for grant funds. Eligible projects include construction, renovation, operation, and maintenance of pump-out and dump stations. In April of 2008, the U.S. Fish and Wildlife Service announced that the Wisconsin Department of Natural Resources (WDNR) will receive $105,000 to fund new sewage pump-out stations at several marinas on the state's Great Lakes and inland waters.

In exchange for grant funding, marina owners agree to maintain pump-out systems in good operating condition for a minimum of 10 years and agree 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.

Any private marina owner that is interested in applying for CVA funds should contact his or her WDNR regional community services specialist, *http://dnr.wi.gov/Aid/staff.html/*. For more information on the CVA, please refer to the WDNR website: *http://dnr.wi.gov/org/caer/cfa/Grants/cleanvessel.html*.

Once you have decided to invest in a pump-out system, consider the following recommendations.

Select an appropriate system. Install pump-out facilities and dump stations that meet the marina's needs. There are three types of onshore sewage collection systems—fixed-point systems, portable/mobile, and dedicated slip-side systems. Ask the manufacturer for

a written assurance that their system will operate effectively within the specific conditions at your marina.

- Fixed-point systems are stationary systems, meaning that the boat that needs service must move to the pump-out station. A hose is connected to the sanitation device fitting, and a pump or vacuum system moves the waste material into an onshore holding tank or into the sewer system. A fixed-point system should be centrally located and easily accessed by boats.
- Portable systems are, of course, portable—they can be pushed up to the boat needing service instead of bringing the boat to a pump-out station. They are good for smaller marinas, especially those that offer limited maneuverability within the marina, and some boaters find them more convenient to use. However, portable systems must be returned to an area where they can be pumped out, and a full system may be difficult to move. These systems also require more hands-on cleaning.
- Dedicated slip-side systems provide continuous wastewater collection at select slips within a marina. These are good systems to choose if enough slips can be dedicated to their use. They have a direct connection to the boat and a below-dock gravity-drained sewer system and use a vacuum-type pump-out system.

Choose a suitable location. Consider where the pump-out will be placed if you select a fixed system. It should easily accommodate the types of boats that frequent your marina. Fuel docks are often good locations. Try to locate the pump-out system so that a boat being pumped out does not prevent another boat from fueling. Avoid locations where stormwater runoff can come in contact with equipment.

Dispose of collected waste. The best option for disposing of the collected waste is to connect directly to the public sewer line. If a sewer line is not available in your area, you will need a holding tank. The contents of the tank must be pumped periodically and trucked to a treatment plant. Holding tank size and location is generally determined by the local health department.

Train employees to handle collected waste with care. For health reasons, 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 if the pump-out will be staffed. Ideally, an attendant would operate the pump-out. Consider installing a buzzer or paging system so boaters at the pump-out station can easily locate the attendant. If the station is unattended, be sure that clear instructions are posted.

Decide whether to charge a fee. If you do charge a fee, how much will it be? Will tenants and "live-aboards" be charged? Or just transients? Remember, no more than $5 may be charged if CVA grant funds were accepted for the purchase or installation of the system. If the pump-out system is not regularly staffed, you will have to make arrangements to collect a fee. Consider providing a free pump-out with a fuel fill-up.

Post signs. Provide 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. Also, post signs that are visible from the channel so that passing boaters are aware of the facility.

Maintain the pump-out system. You should inspect the system regularly and keep a log of your observations. Contact the pump-out manufacturer for specific maintenance and winterization recommendations. During the boating season, test

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the efficiency of the pump weekly by measuring the length of time required for the system to empty a five-gallon bucket of water. In order to quickly address any malfunctions, establish a maintenance agreement with a contractor qualified to service and repair pump-out facilities.

- **Do not allow waste to drain into receiving waters.** Do not allow rinse water or residual waste in the hoses to drain into receiving waters. Keep the pump running until it has been rinsed with clean water.
- **Educate Staff.** If boaters are to use the pump-out system, the experience must be as pleasant and convenient as possible. As the manager of a marina with a pump-out, you are demonstrating your commitment to clean water. It is imperative that your staff exhibits this same level of care.
- **Provide Portable Dump Stations**. Provide portable toilet dump stations near small boat slips and boat ramps.

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.
- Install a security system on restroom doors so people will feel safe, particularly late at night.
- Provide air conditioning and heating.

Prohibit Discharge from Type I and Type II MSDs at the Slip or Mooring

Effluent from Type I and Type II systems contains nutrients and potentially toxic chemicals, and it probably contains pathogens as well. While many pass-through systems are capable of treating sewage to much higher levels, the standard for Type I systems is a fecal coliform bacteria count of 10,000 per 1,000 milliliters. Advisories are posted at bathing beaches when fecal coliform bacteria counts reach 200 per 1,000 milliliters. Thus, discharges from Type I and Type II systems in crowded, enclosed areas—such as marinas—pose a real threat to human health and water quality. If your marina is located within an NDZ, discharge of sewage, treated or untreated, is completely prohibited; therefore, boaters must secure their Type I and Type II MSDs, e.g., lock the door to the head or disable the seacock.

If your marina is located outside an NDZ, adopt the following recommendations to discourage discharge within your marina.

- Prohibit discharge of head water in your marina as a condition of your lease agreement.
- Discourage the discharge of graywater waste in your marina as a condition of your lease agreements. See the “Proper Graywater Handling” section later in this chapter.
- Post signs prohibiting the discharge of head waste, discouraging the discharge of graywater, and directing people to use shoreside restrooms and dishwashing areas.

Design and Maintain Septic Systems to Protect Water Quality and Public Health

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

associated with an overburdened system (Miller and Eubanks 1992).

- Hire a licensed professional to pump the septic tank every two to three years.
- Post signs in the restrooms requesting patrons not to place paper towels, tissues, cigarette butts, disposable diapers, sanitary napkins, or tampons in the toilets. These items can clog the septic system.
- Provide adequate covered disposal for the above items.
- Post signs in the laundry room requesting that patrons use minimal amounts of detergents and bleaches.
- Do not dump pesticides or solvents such as paint thinner or other harsh chemicals down the drain, and post signs prohibiting customers from doing the same.
- Do not pour fats and oils down drains.
- Use small amounts of drain cleaners, household cleaners, and other similar products.
- Do not use "starter enzyme" or yeast. These products can damage the system by causing the infiltration bed to become clogged with solids that have been flushed from the septic tank.
- Direct downspouts and runoff away from the septic field to avoid saturating the area with excess water. For stormwater management reasons, do not direct the flow or runoff toward paved areas.
- Do not compact the soil by driving or parking over the infiltration area.

Provide Facilities for "Live-Aboards"

Boaters who make their homes aboard vessels pose a tricky problem. It is not reasonable to expect that they will untie their boats in order to use a fixed pump-out facility. It is also unwise to assume that people living on their boats will always use shoreside restrooms. Furthermore, even if your marina is located outside an NDZ, it is undesirable to allow residents to discharge their Type I or Type II systems. Your obligation as marina owner/manager is to provide a convenient sewage disposal system for live-aboards, while maintaining good water quality. Consider the following options to meet this challenge. Keep in mind that most live-aboards expect and are willing to pay a premium for extra service and more convenient slips.

- Provide a portable pump-out system or require that live-aboards contract with a mobile pump-out service.
- Reserve slips closest to shoreside restrooms for live-aboards. Be sure that the dock and route to the bathhouse are well lit at night.
- Stipulate in the lease agreement that boats may not discharge any sewage.
- Offer to board their vessels and demonstrate the proper way to secure the "Y" valve.
- As a condition of the lease agreement, require that live-aboards place dye tablets in holding tanks to make any discharge clearly visible.
- Install direct sewer hookups for live-aboards.

Offer MSD Inspections

- Offer to inspect patrons' MSDs annually to ensure that their "Y" valves are secured to prevent illegal discharge or, only for marinas outside NDZs, that their Type I and II systems are functioning properly.

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"Doggie Island" at Port Washington Marina. Photo credit: Kae DonLevy, Wisconsin Marina Association.

- 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.

Encourage Compliance

- Include information about MSD requirements and sewage laws in contracts for slips, rentals, transients, and live-aboards.
- State that failure to comply with MSD laws and marina policy will result in expulsion from the marina and forfeiture of fees.
- If a customer fails to observe the law or honor your contract: 1) discuss the matter with him or her, 2) mail a written notice asking that the offending practice stop immediately and keep a copy for your records, and finally 3) evict the boater.
- If a tenant is discharging raw sewage, report him or her to the WDNR. Provide as much information as possible—name of the owner, vessel, location, etc.

Manage Pet Waste and Wildlife

- Establish practices to control pet waste problems.
    - Provide a special area away from the shoreline for pets to be taken for walks. Encourage owners to use the space by installing fences to allow patrons to exercise their dogs off-leash or put in park benches. The area should be grassy and away from storm drains.
    - Offer 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 and ask them to clean up after their pets.
- Prohibit feeding wild birds, including ducks, geese, and/or seagulls, in the marina. This encourages birds to flock to the marina and become long-term residents. The birds' waste can contaminate water and create a mess on boats and walkways.
- If wild birds do become established at your marina, there are several abatement measures that can be used to control wild bird populations:
    - 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

For more information on abatement, please visit the following Web sites:
http://www.wihumane.org/wildlife/gulls.aspx
http://icwdm.org

Handle Graywater Properly

Graywater is the wastewater from the sink and shower. (Sewage is called blackwater.) Graywater can contain detergents, soap, other chemicals, and food wastes. When it is

released to the environment, it can pollute water, promote algae growth, and reduce oxygen levels as bacteria break down wastes and algae. Help your customers reduce the effects of graywater by taking the following steps:

- Educate customers about the effects of graywater and steps they can take to help reduce them.
- Discourage your customers from using dish soaps to clean dishes on board their boats. If soap is necessary for hard-to-clean jobs, use low-phosphorus and biodegradable soaps in moderation.
- Sell only low-phosphorus detergents and biodegradable soaps and shampoos in your ships store.
- Consider providing shoreside dishwashing facilities for boaters and encouraging their use. Also explore the potential of offering coin-operated laundry facilities.
- Encourage customers to use the showers and restrooms provided by the marina when at the docks.

Educate Boaters

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

- Photocopy the tip sheet titled "Wastewater Containment & Disposal" from the back of this manual and distribute it to your customers.
- If you do not have a pump-out system, post signs directing boaters to the closest public pump-out.

References

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

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

Waste Containment and Disposal

Environmental Concerns

All marinas generate some waste—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 contained. There are many well-documented instances of mammals, fish, turtles, and waterbirds that have become entangled in or choked on plastic debris. Plastics may also be a hazard to navigation as they can snare propellers and clog engine intake systems. Divers are, likewise, susceptible to entanglement. Furthermore, solid waste that washes up on shore is unattractive and may be costly to remove.

In addition to solid waste, marina operators must manage the proper collection and disposal of liquid wastes, hazardous wastes and corrosive, reactive, toxic, and/or ignitable materials.

Legal Setting

Marine Plastic Pollution Research and Control Act

The Marine Plastic Pollution Research and Control Act (MPPRCA) is the U.S. law that implements an international pollution prevention treaty known as MARPOL (short for "marine pollution"). The MPPRCA of 1987 (Title II of Public Law 100-220) restricts the overboard discharge of garbage. Its primary emphasis is on plastics; it is illegal to discharge plastic materials into any body of water. The law also requires that marinas be able to accept garbage from vessels that normally do business with them.

All vessels 26 feet or longer must display a MARPOL placard in a prominent location outlining the garbage dumping restrictions. In addition, all vessels 40 feet or longer operating more than three miles from shore that are equipped with a galley and berthing must also have a written waste management plan on board.

Resource Conservation and Recovery Act and State Hazardous Waste Laws

The Federal Resource Conservation and Recovery Act (RCRA) of 1976 was established to improve the collection, transportation, separation, recovery, and disposal of solid and hazardous waste. The state hazardous waste law (WI Statute 291) and adminstrative code NR 660-679 govern the management of hazardous waste, universal waste, and used oil in the state of Wisconsin.

State Litter and Recycling Laws

Wisconsin state laws (s. 287, Wis. Stats., and NR 544 Wis. Adm. Code) prohibit disposal of certain materials in Wisconsin landfills or incineration facilities and require local jurisdictions to require recycling of these materials under local ordinance.[1] Local jurisdictions are further required to implement recycling programs to ensure proper recycling of these materials. For information see the WDNR webpage: *http://dnr.wi.gov/topic/Recycling/*. For more information on some local community programs visit *http://recyclemorewisconsin.org/*.

Best Management Practices to Contain and Dispose of Waste Properly

Reduce Waste

In addition to the suggestions offered in this guidebook, consider the following recommendations to reduce waste further. Keep in mind that less waste means lower recycling and disposal costs.

- Avoid having leftover materials by sizing up a job, evaluating what your actual needs are, and buying just enough product for the job. Encourage boaters to do the same.
- Minimize office waste: make double-sided copies, use scrap paper for notes and messages, purchase recycled office paper, and reuse polystyrene peanuts or give them to small-scale packing and shipping companies that will reuse them.

[1] Materials banned from landfilling or incineration under state law s. 287.07 (1m.) to (4): major appliances, lead acid batteries, yard waste, waste oil, oil filters, waste tires, newspaper, magazines, cardboard, and glass/plastic/aluminum/steel food and beverage containers.

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- Discourage the use of plastic and Styrofoam cups, food containers, utensils, bags, and other non-biodegradable products.
- Encourage boaters to exchange excess paints, thinners, and varnishes. To facilitate this type of activity, provide a bulletin board where boaters can post notices that they are seeking particular materials or have an excess of materials.
- Post the names of local organizations (schools or theater groups) that are willing to accept excess non-toxic paints.
- Request alternative packing material from vendors, such as paper, potato-starch peanuts, and popcorn.

Manage and Dispose of Hazardous Waste

Hazardous wastes exhibit the characteristics of ignitability, corrosivity, reactivity, and/or toxicity or are specifically listed as hazardous waste because of their chemical properties and environmental health hazards. Lists of hazardous wastes can be found in chapter NR 661 of the Wisconsin Administrative Code at *http://docs.legis.wi.gov/code/admin_code/nr/661*.

All generators must determine if the wastes generated by their operations are hazardous, either by applying knowledge of the waste (i.e., material safety data sheets) or by having the waste analyzed by a state of Wisconsin certified laboratory. The requirements for hazardous waste generators can be found in chapter NR 662 of the Wisconsin Administrative Code at *http://docs.legis.wi.gov/code/admin_code/nr/662*. To determine the requirements that apply to you, first determine the amount of hazardous waste that is generated on a monthly basis.

Very-Small-Quantity Generators

Very-small-quantity generators generate fewer than 100 kg (220 lbs or 30 gallons) of hazardous waste per month and are allowed to store up to 1,000 kg at any time. The following federal and state requirements apply to very-small-quantity generators.

- Obtain an EPA generator identification number from the WDNR only if you use hazardous waste uniform manifests to ship waste off-site.
- Use containers that are in good condition, closed except when adding or removing waste and labeled "hazardous waste."
- Send the hazardous waste to an approved, licensed, or permitted hazardous waste storage, treatment, or disposal facility. Very-small-quantity generators can also self-transport the waste to a household/very-small-quantity-generator hazardous waste collection facility.

Small-Quantity Generators

Small-quantity generators generate 100 to 1,000 kg of hazardous waste during any calendar month. The following federal and state requirements apply to small-quantity generators.

- Ship hazardous waste off-site within 180 days of generation and before you accumulate 6,000 kg (13,230 lbs). If the waste must be shipped 200 miles or more, it can accumulate for up to 270 days.
- Apply to the Wisconsin Department of Natural Resources (WDNR) for an Environmental Protection Agency (EPA) identification number. Use EPA Form 8700-12 (available from the EPA website: *http://www.epa.gov/epawaste/inforesources/data/form8700/8700-12.pdf* or the WDNR by phone (608) 266-2111).
- Store hazardous waste in containers that are in good condition, labeled as containing hazardous waste, and kept closed unless waste is being added or removed. Store incompatible wastes in separate containers and away from each other.

- Provide secondary containment for 100% of the largest container or 10% of the volume of all containers, whichever is greater (NR 664, *http://docs.legis.wi.gov/code/admin_code/nr/664/I/0175*).
- Mark and label containers according to Department of Transportation requirements and use the correct placards when shipping waste off-site.
- Allow enough aisle space between containers for inspection and cleaning up spills or leaks. Store containers on pallets to prevent corrosion and in an area able to contain any leaks.
- Inspect containers weekly for corrosion or leaks.
- Mark the date accumulation begins on each container.
- Ship the waste to an approved, licensed, or permitted hazardous waste treatment, storage, or disposal facility using a state of Wisconsin licensed transporter.
- Have available and maintain in good working order adequate emergency equipment for the types of hazardous waste generated, such as fire extinguishers, spill control equipment, and telephones or alarms.
- Establish emergency response procedures. Identify at least one employee as an emergency coordinator who will be responsible for coordinating and responding to any spills or other emergencies that might occur. Post the name and phone numbers for the emergency coordinator and the fire department and the location of emergency response equipment near telephones.
- Train employees in the proper management of hazardous waste to ensure compliance with state regulations.
- Prepare a uniform waste manifest for every single shipment of waste. Each transporter and the treatment, storage, or disposal facility will sign the manifest and keep a copy of the manifest for their records. Once the waste has been accepted by the treatment storage or disposal generator, a copy of the signed manifest will be returned to the generator.
- Submit an annual report to the WDNR that summarizes hazardous waste activities during the previous years.
- Retain all records, including manifests, waste analysis, and annual reports, for at least three years. The files must be available for inspection by the WDNR.

Large-Quantity Generators

Large-quantity generators generate more than 1000 kg (2,205 lbs or about 220 gallons) of hazardous waste during any calendar month and are allowed to store the waste up to 90 days. The following federal and state requirements apply to large-quantity generators.

- Comply with the requirements for small-quantity generators, except: Prepare a written emergency contingency plan instead of establishing emergency response requirements. Copies of the plan must be given to local police departments, fire departments, hospitals, and state and local emergency response teams.
- Keep records documenting the hazardous waste training given to each employee. Referesher training is to be given annually.

Minimize Use of Hazardous Products

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

Waste containers and containment at Washburn Marina. Photo credit: Gene Clark, UW Sea Grant Institute.

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

Store Solvents and Hazardous Materials with Care

- Store solvents or other hazardous materials in fire-safe containers that are UL-listed or Factory Mutual approved. Containers must meet U.S. Department of Transportation standards for protecting against the risks to life and property inherent in the transportation of hazardous materials. Approved containers will carry specification markings (e.g., DOT 4B240ET) in an unobstructed area. Refer to 49 CFR 178 for additional packaging specifications.
- Small quantities of solvents may be stored in the containers in which they were purchased. Keep the storage area neat.
- To minimize air pollution, cap solvents and paint thinners whenever they are not in use. Store rags or paper saturated with solvents in tightly closed, clearly labeled containers.
- Separate hazardous chemicals by hazard class. Contact the WDNR to determine which classes the chemicals you have fall into.
- 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.
- Routinely check the date of materials to prevent them from outlasting their shelf life.
- Call your local fire official to schedule a "basic fire inspection." The inspection will determine whether you are meeting the state fire code, including hazardous material storage requirements.

Manage Universal Waste

Universal wastes are a subset of commonly generated hazardous wastes and include waste lamps, batteries, mercury-containing devices and some pesticides. Antifreeze is a Wisconsin specific universal waste if it is recycled. Universal waste requirements are streamlined hazardous waste requirements to encourage the recycling of these wastes and can be found in chapter NR 673 available at *http://docs.legis.wi.gov/code/admin_code/nr/673.*

Universal wastes handlers include generators, transporters and off-site storage facilities. Universal waste destination facilities recycle, treat or dispose of universal waste. Small-quantity handlers accumulate fewer than 5,000 kg (11,000 lbs) of universal wastes. The following requirements apply to small-quantity handlers.

- Label containers "universal waste" or "waste-" or "used-" lamps, batteries, etc.
- Use sturdy containers that are kept closed except when adding or removing waste. Place cracked or leaking lead acid batteries in a sturdy, acid-resistant, leak-proof, sealed container (e.g., a sealable five-gallon plastic pail).
- Keep track of the date the universal waste begins to accumulate by marking the date on the universal waste container, by posting the accumulation start date in the storage area, or by recording the date in your records.

- Within a year, send the waste to another universal waste handler or destination facility.
- Clean up spills, such as broken glass from lamps or battery acid, immediately.
- Train staff about the proper management of universal waste.

Manage Used Oil

Do not mix used oil with solvents or other materials since the mixture may need to be disposed of as hazardous wastes. Used oil requirements can be found in chapter NR 679 available at *http://docs.legis.wi.gov/code/admin_code/nr/679*. The following requirements apply to used oil generators.

- Label containers and tanks "used oil" and keep them closed unless oil is being added or removed.
- Only use containers and tanks that are in good condition and are not leaking.
- Use a WDNR-licensed solid waste transporter to ship used oil to an oil recycler. Used oil generators can self-transport 55 gallons or fewer of used oil to a collection facility in their own vehicle.

Manage Waste from Boat Owners

Hazardous waste generated by private boat owners is considered household hazardous waste and is not subject to hazardous waste requirements as long as it is managed with normal household trash. In some areas, boat owners may be able to take their hazardous waste to a local household hazardous waste collection facility. If a household hazardous waste collection facility is nearby, marinas should post information identifying its location, phone number, the types of waste accepted, and its days and hours of operation.

Universal wastes, used oil and antifreeze collected from boat owners should be managed according to those requirements stated above. Other things you may want to consider when accumulating waste on-site include:

- Provide separate containers for the collection of used oil, antifreeze, solvents and each of the different types of universal waste and clearly label the containers.
- Lock the intake to oil and antifreeze recycling containers to prevent contamination. Instruct your patrons to get the key from the appropriate staff person or to leave their oil or antifreeze next to the collection container or tank. Assign a member of your staff to inspect the collection site daily for any material that may have been dropped off.
- Do NOT allow patrons to pour gasoline, solvents, paint, varnishes, or pesticides into the oil or antifreeze recycling containers. The introduction of these materials results in disposing of the container or tank contents as hazardous waste—a very expensive undertaking.
- Check with your recycler before mixing any materials. Ask if engine oil, transmission fluid, hydraulic fluid, and gear oil may all be placed in a waste oil container. Some haulers will also take diesel fuel and kerosene. Also ask if ethylene glycol and propylene glycol antifreeze need to be collected separately.
- Post signs indicating what may and may not be placed in each container.
- Use funnels to prevent spillage during filling. Remove the funnel and cap the container when waste is not to be added, or use a funnel with a spring-loaded cover.

Waste containers at Pikes Bay Marina. Photo credit: Gene Clark, UW Sea Grant Institute.

Waste collection at Pikes Bay Marina. Photo credit: Gene Clark, UW Sea Grant Institute.

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- Tanks and containers used to collect used oil and other flammable, combustible or hazardous liquids are subject to the Wisconsin Department of Safety and Professional requirements. For more information see the SPS 310 compendum at *http://dsps.wi.gov/er/pdf/bst/CommCodes10_5_2_48/ER-BST-Comm10CodeCompendium.pdf*.
- Shelter tanks from the elements.
- Be aware that recycling liquid materials is a long-term obligation. To minimize your liability, check that the waste haulers and the recycling treatment, storage, and disposal facilities are in compliance with RCRA requirements before allowing them to manage your waste.

Track Pollution Incidents

- Copy and use the form titled "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

If marinas service sport anglers they must make provisions to dispose of fish waste properly. It is illegal to dispose of fish waste in waters of the state. Improperly handled fish waste can degrade water quality, create odors, and attract vermin and undesirable insects. Marinas should adopt management practices to handle fish waste at their facilities properly, including the following:

1. Designate an area within the marina where fish can be cleaned. To prevent fish waste from entering the marina waters, boaters should not be allowed to clean fish at their slip.
2. Fish cleaning stations should be supplied with potable water, be screened and sheltered, contain sanitary cleaning surfaces (preferably stainless steel), be equipped with properly connected floor drains, and be sized to accommodate the volume of fish waste generated at the marina.

Fish cleaning stations can be equipped with mechanical grinders that macerate fish carcasses. If so equipped, the station can be connected to the sanitary sewer for further treatment of fish waste and/or wash water. Since not all municipal sewage treatment plants are capable of handling the biological oxygen demand (BOD) associated with fish waste, it is imperative that local sewerage officials be included in the decision process.

Where no municipal connection is available, wash water and ground fish waste can be stored in properly sized below-ground septic tanks for periodic removal and proper disposal by a licensed liquid industrial waste hauler. Landfills are prohibited from accepting free liquid waste; however, liquefied fish waste is accepted by some of the larger landfills equipped with the facilities to remove liquids from liquefied fish waste. Be sure to check with the landfill before bringing fish waste for disposal. Tanks storing fish waste should be equipped with proper venting that disperses fish odors away from the marina facility and adjacent properties.

When a fish cleaning station is not equipped with mechanical grinding, a solid waste receptacle should be placed close to the station for properly bagged fish waste. Consider providing or stocking your ship's store with heavy-duty biodegradable garbage bags to accommodate fish waste. Solid fish waste can be disposed of in a Type II municipal landfill. Work with your waste hauler to arrange a pick-up schedule that ensures fish waste does not accumulate and break down, attracting insects and vermin. Also, another option for fish

Fish cleaning station at Port Washington Marina. Photo credit: Vicky Harris, UW Sea Grant Institute.

waste disposal is to instruct boaters to place fish scraps in plastic bags and dispose of them in a dumpster or at home.

If fish waste volumes are manageable, carcasses could be frozen and properly disposed of when feasible. Freezing allows for less frequent waste hauling and minimizes the associated odor.

Fish waste can contain valuable nutrients that can be used as plant fertilizer and to enhance soil's water retention. As a result, some landowners may be willing to work with you to accept fish waste. In addition, fish waste can be composted. Proper composting will control the odor and, over time, will produce an excellent soil conditioner that can be used for your landscaping needs. Contact Minnesota Sea Grant for a copy of "Composting Fish Waste" by Thomas Halbach and Dale Baker (*http://www.seagrant.umn.edu/publications/F5*). This booklet provides instructions for composting 25 five-gallon buckets of fish waste per week using sphagnum peat moss and wood chips. In addition, the University of Wisconsin Sea Grant Institute has published "The Compost Solution to Dockside Fish Wastes," a report describing how to compost fish waste and transform it into a useful, potentially marketable product. The report can be downloaded at *http://aqua.wisc.edu/publications/* (click on "Fisheries Research").

Manage Pet Waste

- Because many people bring their pets along on boating trips, there should be proper facilities to manage pet waste. Many individuals simply throw their pet wastes overboard, and this should not be allowed. Marinas can address this issue by providing "dog walks" and receptacles for pet waste disposal.

Manage Trash

- Develop your 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 an effective recycling program to manage at a minimum the materials banned from disposal and incineration under state law. For information on how to establish a public venue recycling program, see *http://dnr.wi.gov/topic/Recycling/business.html* and for specific ideas on how to coordinate public-venue recycling, see *http://www.publicplacerecycling.org/index.html*.
- Promote your image as a responsible business by providing adequate and reasonably attractive trash and recycling receptacles (cans, bins, and dumpsters).
- Locate trash and recycling receptacles in convenient locations. Select 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, as waste or recyclables may inadvertently be tossed or blown into the water.
- Select 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.
- Provide lids or some other means to trap the waste inside and to prevent animals and rainwater from entering receptacles. Proper selection of lids for recycling bins is one of the most effective means of keeping recyclables separate from trash.
- Post signs indicating what may not be placed in the dumpster, such as engine oil, antifreeze, paints, solvents, varnishes, pesticides, lead batteries, transmission fluid,

Dumpster sign at Pikes Bay Marina. Photo credit: Gene Clark, UW Sea Grant Institute.

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Signage at Port Washington Marina. Photo credit: Kae DonLevy, Wisconsin Marina Association.

Used fishing line recycling receptacle at Port Washington Marina. Photo credit: Kae DonLevy, Wisconsin Marina Association.

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distress flares, and polystyrene peanuts. (Loose peanuts tend to blow away.)

- Post signs indicating what must be recycled.
- Require all employees to be involved in policing the facility for trash and vessel maintenance wastes. Do not allow litter to accumulate on your grounds or nearshore areas.
- Use a pool skimmer to collect floating debris that collects along bulkheads or elsewhere within your marina.
- 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.
- 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.

Recycle

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

- In Wisconsin, recycling is the law. Know what materials MUST be recycled under state and local laws (*http://dnr.wi.gov/topic/Recycling/banned.html*). Contact a waste hauler or your local solid waste recycling coordinator to learn what materials are collected in your area. The following are commonly recycled materials: glass, plastic containers labeled #1 & #2, aluminum, steel or tin cans, newspaper, corrugated cardboard, mixed paper, and scrap metal.
- Provide containers to collect, at a minimum, plastic, glass, aluminum, and paper.
- Additionally, you may also want to provide collection for these materials: antifreeze, used oil, oil filters, solvents, lead acid batteries, plastic films such as shrink wrap or bags, and used fishing line.
- Post information about local recycling services if you are not able to provide all of the desired services at your facility.
- Clearly mark each container so people know what may and may not be put in it. Refer to sample signs in the Marina Management chapter of this guidebook.
- Provide lids or some type of restricted opening to prevent the collected material from being lifted out by the wind and to prevent rainwater from collecting inside.
- Place the collection bins for solid recyclables in convenient locations and in high-traffic areas near trash receptacles.
- Make the recycling bins look different from the standard trash cans, e.g., use a different color or material and clearly mark as recycling receptacles.
- Explore setting up a collection program for boat shrink wrap. Many marinas in other states have been successful in diverting shrink wrap used for boat storage from solid waste to recycling facilities.

Follow Recommended Disposal Methods

The table on pages 11–13 contains recommendations for the proper disposal of wastes typically found at marinas.

Educate Boaters About Marina Waste Management

- Photocopy the Boater Tip Sheet titled "Waste Containment and Disposal" from 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.

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Table of Recommended Disposal Methods

Waste	Disposal Options The first option (P) is preferable
Antifreeze • Propylene glycol • Ethylene glycol Contact your waste hauler to determine that they will accept mixed antifreeze.	(P) Recycle. • Hire a waste hauler to dispose of used antifreeze. • Purchase an on-site recovery unit. Distillation systems are more expensive than filtration systems but are more efficient at renewing used antifreeze.
Waste Oil • Engine oil • Transmission fluid • Hydraulic oil • Gear oil • #2 Diesel • Kerosene Contact your waste hauler to determine if oils can be collected in one container.	(P) Recycle. • Send the waste to a used oil processor or re-refiner. • Self-transport 55 gallons or fewer to a local collection site. • Use a licensed waste oil hauler to periodically collect stored waste oil.
Quart-Size Oil Cans	(P) Drain completely and dispose of in regular trash. They cannot be recycled.
Non-Terneplated (Automotive Type) Oil Filters	(P) Puncture and completely hot drain for at least 12 hours. Recycle the oil and the metal canister. It is now illegal to place used oil filters in your regular trash. • Use an oil filter crusher.
Terneplated Oil Filters (sometimes used in heavy equipment and heavy-duty trucks)	(P) Drain and recycle the oil. Dispose of filter as hazardous waste. (These filters contain lead.)
Stale Gasoline	(P) Add stabilizer in the winter to prevent it from becoming stale or an octane booster in the spring to rejuvenate it. Use the fuel. • Mix with fresh fuel and use. • Hire a hazardous waste hauler to collect and dispose of the gasoline.
Kerosene	(P) Filter and reuse for as long as possible, then recycle. • May be hazardous waste when discarded.
Mineral Spirits	(P) Filter and reuse. • May be hazardous waste when discarded.
Solvents Paint and engine cleaners such as acetone and methylene chloride	(P) Reuse as long as possible and then recycle. • Dispose of as hazardous waste.
Sludge Recovered from a Solvent Listed as Hazardous Waste or that Exhibits Hazardous Characteristics	(P) Dispose of as hazardous waste.
Sludge Recovered from a Solvent Not Listed as a Hazardous Waste that Does Not Exhibit Hazardous Characteristics	(P) Let sludge dry in a well-ventilated area, wrap in newspaper, and dispose of in garbage.

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Table of Recommended Disposal Methods—continued

Waste	Disposal Options The first option (P) is preferable
Paints and Varnishes • Latex • Water-based	(P) Use leftover material for other projects, such as an undercoat for the next boat. • Encourage tenants to exchange unused material. • Allow to dry completely. Dispose of in regular trash.
Paints and Varnishes • Oil-based	(P) Use leftover material for other projects. • Dispose of as hazardous waste.
Paint Brushes	(P) Allow to dry completely. Discard in regular trash
Paint Filters	(P) Allow to dry completely prior to disposal. Treat as hazardous waste if paint contains heavy metals above regulatory levels.
Rags Soaked with Hazardous Substances	(P) Keep in covered container until ready to discard. Dispose of the solvent that collects in the bottom of the container as hazardous waste. (P) Wring rags out over a collection receptacle and have laundered by an industrial laundry. • If rags fail TCLP test, dispose of as hazardous waste.
Used Oil-Absorbent Material	(P) If it contains oil or diesel, wring out over recycling bins and reuse. (P) If it contains gasoline, store it in a fire-proof container and dispose of it as hazardous waste. (P) For small absorbent pads used to mop up gasoline drips and backsplash at fuel pumps, allow them to air dry and reuse.
Used Bioremediating Bilge Booms	(P) Dispose of in regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.
Epoxy and polyester resins	(P) Catalyze and dispose of as solid waste.
Glue and Liquid Adhesives	(P) Catalyze and dispose of as solid waste.
Containers (empty) • Paint cans • Buckets • Spent caulking tubes • Aerosol cans	(P) May be put in trash can as long as: • All material that can be removed has been. Be sure no more than 1" of residue is on the bottom or inner liner. • Aerosal cans are at atmospheric pressure.
Residue from Sanding, Scraping, and Blasting	(P) Dispose of as solid waste, if nonhazardous.
Residue from Pressure Washing	(P) Dispose of as solid waste, if nonhazardous.

Table of Recommended Disposal Methods—continued

Waste	Disposal Options The first option (P) is preferable
Lead Batteries	(P) Recycle or sell to scrap dealers. Store on an impervious surface, under cover. Protect from freezing. Check frequently for leakage. • Inform boaters that if they bring their used batteries to a dealer, they may receive a refund on a new battery.
Expired Distress Signal Flares	(P) Encourage boaters to keep on board as extras. (P) Store in a well-marked, fire-safe container. Use expired flares for safety demonstrations. Conduct the demonstration over the water. • Encourage boaters to bring expired flares to their local fire department.
Scrap Metal	(P) Recycle.
Light Bulbs • Fluorescent bulbs • Mercury vapor lamps • High-pressure sodium • Low-pressure sodium • Metal halide lamps	(P) Recycle as universal waste.
Refrigerants, e.g., chloroflourocarbons (CFCs)	(P) Recycle. If you recover CFCs from equipment and applicances, you must be certified with the EPA and use CFC recovery/recycling equipment. • Use alternative refrigerants.
Monofilament Fishing Line	(P) Recycle through a manufacturer or tackle shop.
Scrap Tires	(P) Recycle. You need to register with the WDNR if you will be collecting more than 500 tires. Store them according to National Fire Protection Association Standards.
Pesticides	(P) Dispose of as hazardous waste.
Plastic Shrink Wrap	(P) Recycle.
Pet Waste	(P) Prohibit disposal of pet waste into water. Establish a pet walk area along with one of the following disposal methods: • Flush pet waste to treatment facility. • Bag waste and properly discard.
Fish Waste	(P) Prohibit disposal of fish waste into confined marina waters. Establish a fish-cleaning station and adopt one of the following disposal methods: • Equip the cleaning station with a garbage disposal connected to the municipal sewer. • Compost the scraps. • Instruct boaters to bag scraps in plastic and place in a dumpster or bring home.

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Pollution Report and Action Log

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

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Let the public know that you are doing your part to protect the environment.

Marina Management

Staff Training

- Stormwater Pollution Prevention Plan
- Emergency Response Plan
- Be Watchful for Marina Waste
- Approach Polluters
- Investigate Course/Workshop Offerings
- Maintain Training Records

Inform Patrons and Independent Contractors

- Incorporate Best Management Practices into Contracts and Environmental Policies
- Post Signs Describing Best Management Practices
- Distribute Green Boating Information to Boaters
- Host a Workshop on Green Boating Practices
- Recognize Boaters

Public Relations

- Publicize Your Good Deeds
- Become a Wisconsin Clean Marina

Business Practices

- Offer Environmental Audits for Boaters
- Consider Environmental Surcharges
- Be Diligent

Marina Management

Once you have adopted some of the best management practices outlined in this guidebook, tell people about it! Marina staff should be trained at least twice per year on the emergency response plan, stormwater pollution prevention plan (if needed), and your environmental policies. These plans should be reviewed annually and updated as needed. Staff training should also be documented. Inform boaters how their actions affect water quality and distribute your environmental policies to them each year. Then, let the public know that you are doing your part to protect the environment.

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Staff Training

Stormwater Pollution Prevention Plan (if needed)

Teach your employees about the components and goals of your stormwater pollution prevention plan. The training should be conducted on an ongoing basis and should address the following topics as applicable.

- The need for a pollution prevention plan
- Used oil management
- Used solvent management
- Proper disposal of used abrasives
- Disposal of boat wastewater
- Spill prevention and control
- Fueling procedures
- General good housekeeping
- Painting and blasting procedures
- Used battery management

Also, provide training on the proper use of equipment, such as dustless sanders and high-volume low-pressure spray guns.

Emergency Response Plan

During a real emergency—when time is of the essence—you will want people to know what to do and how to do it. Refer to sample emergency response plan in appendix of this guidebook.

- Review plan and response procedures with staff at the beginning of each boating season.
- Train employees in the use of containment measures.
- Run emergency response drills at least twice annually.
- Invite the U.S. Coast Guard and local fire department to demonstrate emergency response procedures at your marina.

Be Watchful for Marina Waste

Involve all employees in policing your marina for waste. Encourage your staff to look for and immediately halt the following activities:

- 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.
- The use of environmentally harmful cleaning products.

Approach Polluters

- Determine who will address boaters and contractors who are polluting, and let your

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staff know whether they should handle polluters themselves or report pollution incidents to the manager. Except in an emergency, this usually is a job for the manager.

- Report oil, gas, and diesel spills to authorities. Call the U.S. Coast Guard's National Response Center at (800) 424-8802 and the WDNR at 800-943-0003.
- Politely inform boaters and contractors why their actions are harmful. Describe a more environmentally sensitive method and ask that the work stop until it can be done with a reduced environmental impact. It may be easier to get cooperation if you require boaters and contractors to practice pollution prevention as a condition of their contracts. Create and distribute your marina's environmental policies to boaters.
- If the problem persists, take these additional steps:
    - Talk to the boater or contractor again.
    - Mail a written notice asking that the harmful practice stop. Keep a record of the mailing.
    - Remove the problem from the dock. Charge the boater or contractor for the cost of removal and clean-up.
    - Ask the tenant or contractor to leave your marina.

Investigate Course/Workshop Offerings

- Look for courses related to environmental protection.
    - Possible course offerings include:
        - A refresher course on hazardous material handling and waste management through Lakeshore Technical College.
        - A marinas and docks course – coordinated by Al Wortley at the University of Wisconsin-Madison.
    - Contact the Wisconsin Marina Association (WMA) for information about training opportunities: *www.wisconsinmarinas.org*

Maintain Training Records

- Record training dates, topics, and names of employees and instructors.
- Keep copies of instructional material.
- Require staff to sign off on all completed training.

Inform Patrons and Independent Contractors

Incorporate Best Management Practices into Contracts and Environmental Policies

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

- Include language requiring the use of best management practices in all of your contracts, including slip holders, live-aboards, transients, charters, workers, contractors, and tenants.
- Include language specifying the consequences for not using best management practices, e.g., failure to use best management practices will result in expulsion from the marina and forfeiture of rental fees.
- Include information about requirements for marine sanitation devices.

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 below.
- Be sure the signs are visible, durable, eye catching, and appropriately sized.
- Post your facility's environmental policy for public viewing.

Suggested Signs Describing Best Management Practices

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 USCG at (800) 424-8802 and WDNR at (800)-943-0003.

Freshwater Habitat Sanctuary

This marina provides food and shelter for young fish

- Prevent oil spills!
- Keep bilge clean!
- Use oil sorb pads!

Help by recycling or properly disposing of used oil, antifreeze, solvents, cleaners, plastics, and other waste.

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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

No Fish Scraps

Please do not discard fish scraps within the marina basin.

- Use our fish cleaning station.
- Bag the scraps and dispose of them in dumpster or at home.

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 to the water and air.

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Keep Fuel out of the Water

- Do not top off tank
- Listen to anticipate when tank is 90% full

Vessel Maintenance Area

- All major repairs (e.g., stripping, fiberglassing) must be performed in the Vessel Maintenance Area
- All blasting and spray painting must be performed 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 drip pans with all liquids
- Reuse solvents
- Store waste solvents, rags, and paints in covered containers

Do Not Discharge Sewage

Please use our clean, comfortable restrooms while you are in port

Nutrients and pathogens in sewage impair water quality

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OIL SPILL RESPONSE KIT

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

Be sure that a copy of the Oil Spill Response Plan is clearly visible inside the Spill Response Kit.

Recycle Items

Oil	Mixed paper
Antifreeze	Newspaper
Lead batteries	Solvents
Glass	Steel
Plastic	Scrap metal
Aluminum	Tin
Corrugated cardboard	Tires

Metal fuel filter canisters

Indicate which items you recycle and where the collection sites are, and include information about local recycling services for materials that you do not collect

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.

Pump-out Station

- Instructions for use
- Hours of operation
- Fee
- Name and number of person to call in case of malfunction

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Distribute Green Boating Information to Boaters

- Copy and distribute the Clean Boater Tip Sheets included in this guidebook, or create your own. Boater tip sheets titled "Engine Maintenance," "Hull Maintenance," "Boat Cleaning," "Non-Toxic Cleaning Alternatives," "Fuel and Oil Control," "Waste Water Containment and Disposal," "Solid Waste Containment and Disposal," "Aquatic Invasive Species," and "Spring Start-Up: Antifreeze Collection and Disposal" can be found at the end of this guidebook and on the *www.WisconsinCleanMarina.org* website. The website also includes other clean boating advice, such as the *Wisconsin* magazine article "Ship Shape" and the "Simple Solutions" brochure.
- Send the tip sheets with monthly mailings or 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 BoatU.S. (*http://www.boatus.com/*) and the National Oceanic and Atmospheric Administration (*http://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.
- Post information about best management practices on a marina bulletin board.

Host a Workshop on Green Boating Practices

- Include a walking tour of the facility to demonstrate best management practices.
- Try to schedule the workshop to coincide with an existing marina function that is traditionally well attended.
- Offer incentives to attendees such as door prizes, discounts, product samples, and food.

Recognize Boaters

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

Public Relations

Publicize Your Good Deeds

- Seek free publicity with local press, magazines, television, and radio outlets.
- Prepare news releases to highlight your innovative practices, new equipment or services, available literature, or a workshop you are sponsoring.
- 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" (e.g., visit the marina for a demonstration of the new plastic media blasting

system). The news release should be no longer than two pages. (One page is best.) Refer to the Associated Press Stylebook for additional formatting information.

- Learn media deadlines and send releases in time to meet them.
- Send news releases to the editor of the publication, and be sure you have his/her name spelled accurately.
- Ask for press kits from manufacturers of environmentally sensitive products and use their photographs and product information.
- Participate in Association of Marina Industries (AMI) National Marina Day. More information on National Marina Day and event resources are available at: *http://www.nationalmarinaday.org/*.

Become a Wisconsin Clean Marina

- Apply for recognition as a Wisconsin Clean Marina. (See the section in this guidebook titled "Certification Process and Forms.") Once you have satisfied the selection criteria, you may use the Wisconsin Clean Marina logo in your advertising and correspondence, fly a Clean Marina flag, and enjoy promotion by the Wisconsin Clean Marina Program in publications, on boating websites, and at community events.
- Use your certification as an opportunity to prepare a press release.

Business Practices

Offer Environmental Audits for Boaters

- Expand your business by offering environmental audits.
- Inspect engines, bilges, fuel systems, and holding tanks.
- Provide oil-absorbent pads, bilge pillows/socks, air/fuel separators, etc.

Avoid Environmental Surcharges

- Charge for tangible items such as tarps, vacuum sanders, and protective clothing rather than a flat "environmental surcharge."
- Consider donating a portion of rental fees (e.g., for vacuum sanders) to an environmental organization. The boater can feel good about controlling pollution and about the fact that a portion of his or her money is going to help conserve nature.

Be Diligent

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

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LAWS AND
REGULATIONS

Through the Clean Marina Program, Wisconsin is promoting voluntary adoption of best management practices to minimize the effect of marinas on surrounding land and water.

Laws and Regulations

Selected Federal Agencies

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

Selected State Agencies

- The Wisconsin Department of Natural Resources (WDNR)
- The Wisconsin Department of Safety and Professional Services
- The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP)

Selected Federal Laws that Affect Marinas

- The Clean Boating Act of 2008
- The Clean Vessel Act (CVA)
- The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA)
- The Federal Endangered Species Act
- The Federal Water Pollution Control Act
- The Fish and Wildlife Coordination Act (FWCA)
- The Marine Plastic Pollution Research and Control Act (MPPRCA)
- The Oil Pollution Act of 1990 (OPA)
- The Refuse Act of 1899
- The Resource Conservation and Recovery Act (RCRA)

Selected State Laws that Affect Marinas

- Marine Sanitation Devices
- Pollution Discharge Elimination
- Pump-Out Stations
- Wisconsin Litter and Recycling Laws
- Navigable Waters, Harbors and Navigation
- Water Quality Standards for Wetlands
- Aquatic Plant Management
- Criteria for Dredging Projects
- General Solid Waste Management
- Hazardous Waste Management: General
- Environmental Protection, Investigation and Remediation (Spills)
- Deleterious Substances

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Environmental Permits and Licenses

- The National Pollutant Discharge Elimination System (NPDES)
- The Wisconsin Pollutant Discharge Elimination System (WPDES) Stormwater Discharge Permit Program
- The General Permit for Wastewater from the Outside Washing of Vehicles, Equipment, and Other Objects (WI-0059153-2) from the WDNR
- The General Permit for Wastewater from Carriage and Interstitial Water from Dredging Operations (WI-0046558-5) from the WDNR
- Soil Erosion and Stormwater Management

Links

- Federal Agencies
- State Agencies
- Selected Federal Laws that Affect Marinas
- Wisconsin Legislature
- Environmental Permits and Licenses

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

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

The National Oceanic and Atmospheric Administration (NOAA) is an agency within the U.S. Department of Commerce. NOAA's mission is to describe and predict changes in the earth's environment and to conserve and wisely manage the nation's coastal and marine

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resources to ensure sustainable economic opportunities. NOAA provides a wide range of observational, assessment, research, and predictive services for estuarine and coastal Great Lakes regions. NOAA has developed an array of programs to address national-scale estuarine issues and specific problems affecting individual estuarine and coastal Great Lakes systems. In partnership with the EPA, NOAA implements the Coastal Zone Act Reauthorization Amendments of 1990.

The U.S. Army Corps of Engineers (USACE) is responsible for ensuring adequate flood control, hydropower production, navigation, water supply storage, recreation, and fish and wildlife habitat. The 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 the USACE.

The U.S. Coast Guard (USCG), an arm of the U.S. Department of Homeland Security, protects the public, the environment, and U.S. economic interests. The USCG promotes maritime safety and marine environmental protection, enforces maritime law, tends all federal navigation aids, and regulates and monitors recreational and commercial vessels and waterfront facilities.

Selected State Agencies

The Wisconsin Department of Natural Resources (WDNR) is dedicated to the preservation, protection, effective management, and maintenance of Wisconsin's natural resources. The WDNR is responsible for implementing the laws of the state and, where applicable, the laws of the federal government that protect and enhance the natural resources of our state. It is the one agency charged with full responsibility for coordinating the many disciplines and programs necessary to provide a clean environment and a full range of outdoor recreational opportunities for Wisconsin citizens and visitors.

The Wisconsin Department of Safety and Professional Services promotes the health, safety, and welfare of the public and the environment through effective and efficient regulations, education, and enforcement. The Department of SPS is responsible for petroleum tank standards for both underground and aboveground tank systems, Wisconsin's tank registration database, Wisconsin's fund for reimbursement of environmental cleanup costs (PECFA), and for the oversight of cleanups at petroleum tank discharges that do not include high risk factors.

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is the agency responsible for ensuring food safety and animal and plant health; protecting water and soil, and monitoring fair and safe business practices. DATCP licenses and certifies those who apply pesticides and works to ensure that pesticides are properly handled, stored, disposed of, and used according to the label. In addition, DATCP is also responsible for Wisconsin's Public Warehouse Keeper's Program. Marinas are required to be licensed if they provide boat storage, outdoor or indoor.

Selected Federal Laws that Affect Marinas

The Clean Boating Act of 2008 was signed into law on July 29, 2008 (P.L. No. 110-288). This law provides that recreational vessels shall not be subject to the requirement to obtain an NPDES permit to authorize discharges incidental to their normal operation. It instead

directs the EPA to evaluate recreational vessel discharges, develop management practices for appropriate discharges, and promulgate performance standards for those management practices. It then directs the Coast Guard to promulgate regulations for the use of the management practices developed by the EPA and requires recreational boater compliance with such practices.

The Clean Vessel Act (CVA) provides funds to states to construct, renovate, and operate pump-out stations and to conduct boater environmental education. Contact the WDNR for information about receiving up to $12,500 in grant funding to install a pump-out system.

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

The Federal Endangered Species Act provides for the conservation of 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 commence.

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

All boats 26 feet in length or over are required to display a placard that is at least 5 inches x 8 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.

Furthermore, the Clean Water Act 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.

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The Fish and Wildlife Coordination Act (FWCA) requires a U.S. Fish and Wildlife Service review of potential effects on fish and wildlife from proposed water resource development projects. The FWCA requires that fish and wildlife resources receive consideration equal to other parts of the project. In addition, it also requires federal agencies that construct, license or permit water resource development projects to first consult with the U.S. Fish and Wildlife Service and State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

The Marine Plastic Pollution Research and Control Act (MPPRCA) is the U.S. law that implements an international pollution prevention treaty known as MARPOL. The MPPRCA of 1987 (Title II of Public Law 100-220) restricts the overboard discharge of garbage. Its primary emphasis is on plastics—it is illegal to dispose of plastic materials into the water anywhere. Within U.S. lakes, rivers, and bays, it is illegal to dump plastic, paper, rags, glass, metal, crockery, dunnage (lining and packing material, nets, lines, etc.), and food. All boats over 40 feet must also have a written waste management plan on board.

Under the national law, ports and terminals, including recreational marinas, must have adequate and convenient "reception facilities" for their regular customers. That is, marinas must be capable of receiving garbage from vessels that normally do business with them (including transients).

The Oil Pollution Act of 1990 (OPA) was written in direct response to the Exxon Valdez oil spill. The law primarily addresses commercial oil shipping (e.g., tankers must be double-hulled, and captains may lose their licenses for operating a vessel under the influence of drugs or alcohol). However, some of the requirements are applicable to recreational boating. Most notably, 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; revenues, profits, and earning capacity; and public services like the cost of providing increased or additional public services. The financial liability for all nontank vessels is $600 per gross ton, or $500,000, whichever is greater. In addition, substantial civil penalties may be imposed for failing to report a spill, for discharging oil, for failure to remove oil, failure to comply with regulations, and gross negligence.

The Refuse Act of 1899 prohibits throwing, discharging, or depositing any refuse matter of any kind (including trash, garbage, oil, and other liquid pollutants) into waters of the United States.

The Resource Conservation and Recovery Act (RCRA) provides the legal authority to establish standards for handling, transporting, and disposing of hazardous wastes. Hazardous wastes are ignitable, corrosive, reactive, and/or toxic materials.

Facilities that generate hazardous waste are categorized as a specific type of generator depending upon the quantity of hazardous waste generated and stored on-site.

- A very small quantity generator produces less than 100 kg (220 pounds or 30 gallons) per calendar month and is allowed to store up to 1,000 kg at any time.
- A small quantity generator produces 100-1,000 kg per calendar month and is allowed to store less than 6,000 kg (13,230 lbs) at any time for up to 180 days. If the distance to a disposal facility is greater than 200 miles, storage is allowed for no more than 270 days.
- A large quantity generator produces greater than 1,000 kg (2,205 lbs) per calendar month and is allowed to store the waste for up to 90 days.

The following requirements apply to all hazardous waste generators.

- Store hazardous waste in UL listed or Factory Mutual-approved containers that are labeled and marked according to the Department of Transportation regulations. Mark the date accumulation begins on each container. Store containers on pallets to prevent corrosion in an area designed to contain any leaks. Keep containers closed unless waste is being added or removed. Inspect containers weekly.

The following requirements apply to small and large hazardous waste generators.

- All generators and transporters of hazardous waste must apply to the Wisconsin Department of Natural resources (WDNR) for an EPA identification number. Use EPA Form 8700-12, available from EPA or the WDNR.
- Prepare a written contingency plan. Copies must be given to the WDNR and local agencies, including local police departments, fire departments, hospitals, and state and local emergency response teams.
- Document all hazardous waste training in each employee's personnel file. All personnel who handle hazardous waste must receive training to ensure compliance with the state regulations.
- Each facility that sends hazardous waste offsite for treatment, storage, or disposal must prepare a shipping manifest. Ensure that all of the information on the manifest is correct. The hazardous waste manifest must accompany all hazardous waste "from cradle to grave." It is your responsibility to ensure that the driver and the vehicle are certified to handle hazardous waste. Each transporter of the hazardous waste must receive and sign the manifest, as should the owner or operator of the treatment, storage, or disposal facility. A final copy must be returned to the generator once the waste has been properly treated, stored, or disposed.
- Each facility must submit an annual report to the WDNR that summarizes hazardous waste activities. Large quantity generators must submit a biannual report to the EPA on even numbered years. It is recommended, but not mandatory, to report to EPA figures for odd numbered years as well.
- Retain all records, including manifests, waste analysis, and annual reports, for at least three years. The files must be available for inspection by the WDNR.

Very small quantity generators are not required to register with the EPA. Hazardous waste from small quantity generators should be sent to a disposal facility that is permitted, licensed, or registered by the state to manage municipal or industrial solid waste.

Selected State Laws that Affect Marinas

Marine Sanitation Devices

The Federal Clean Water Act and Wisconsin state law (State Statute Sec. 30.71 (2)) require that any vessel with an installed toilet be equipped with a U.S. Coast Guard 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 is label is not required on Type III systems.

In Wisconsin, Type I and Type II MSDs with "Y" valves that would direct the waste overboard must be secured so that the valve cannot be opened. This can be done by placing a lock or non-reusable seal on the "Y" valve or by taking the handle off the "Y" valve.

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Pollution Discharge Elimination

Wisconsin has received delegated authority to administer the National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act. The implementation of the program is contained in ch. 283, Wis. Stats., and consists, in part, of the Wisconsin Pollutant Discharge Elimination System program.

Pump-Out Stations

Wisconsin law (s. 30.71 (3)) requires marinas that provide berths or moorings to five or more boats equipped with toilets and that are located on any outlying water to provide pump-out stations. Outlying waters are defined in Sec. 29.001 (63) as Lake Superior, Lake Michigan, Green Bay, Sturgeon Bay, Sawyer's Harbor, and the Fox River from its mouth up to the dam at De Pere.

Wisconsin Litter and Recycling Laws

Wisconsin state laws (s. 287, Wis. Stats., and NR 544 Wis. Adm. Code) prohibit disposal of certain materials in Wisconsin landfills or incineration facilities and require local jurisdictions to mandate recycling of these materials under local ordinance. These materials include major appliances, lead acid batteries, yard waste, waste oil, used oil filters, waste tires, newspaper, magazines, cardboard, and glass/plastic/aluminum/steel food and beverage containers. Local jurisdictions are further required to implement recycling programs.

Disposal of solid wastes from a marine vessel is prohibited in waters of the state (s. 287). Waters of the state include portions of the Great Lakes within Wisconsin's boundaries (s. 281.01(18)). Because state laws prohibit disposal of waste while on the water, boaters need to comply with state and local recycling requirements when disposing of waste on land (ch. 287, Wis. Stats., and ch. NR 544 Wis. Adm. Code).

Navigable Waters, Harbors and Navigation (Chapter 30, Wis. State Stats)

These Wisconsin rules govern public waters. The program is founded on the Public Trust Doctrine (*http://dnr.wi.gov/waterways/shoreland/doctrine.htm*), the body of law made by the legislature and the courts that guides how WDNR protects public rights in navigable waters. For projects in or near a waterway or wetland, the WDNR provides step-by-step instructions regarding the permits required to complete your project activities. Each project may involve one or more activities, so please consider this when you are collecting and submitting permit application materials, and planning your project timeline. Marina projects may include dredging, control of aquatic nuisance species, placement of docks/piers, bank stabilization, and marina breakwater structures—just to name a few.

Visit the WDNR's Activity Index at *http://dnr.wi.gov/topic/waterways/* to determine which permits are required for your project and how to reach your local WDNR water management specialist.

Water Quality Standards for Wetlands (NR 103, Wis. Adm. Code)

New marinas and existing marinas that have future activities in and adjacent to wetlands may require federal and state permits.

For additional information, please contact your local WDNR water management specialist: *http://dnr.wi.gov/waterways/about_us/county_contacts.html.* For more information on Wetlands, refer to *http://dnr.wi.gov/topic/wetlands/*.

Aquatic Plant Management (NR 107, Wis. Adm. Code)

Some marinas may choose to conduct chemical treatment for management of aquatic plants or control of other aquatic organisms. Permits are required for such activities.

For additional information, please contact your local WDNR water quality biologist: *http://dnr.wi.gov/lakes/contacts/Contacts.aspx?role=AP_MNGT.* For information on aquatic plant management, see *http://dnr.wi.gov/lakes/plants/*.

Criteria for Dredging Projects - Sediment Sampling and Analysis, Monitoring Protocol and Disposal (NR 347, Wis. Adm. Code)

The purpose of NR 347, "…is to protect the public rights and interest in the waters of the state by specifying definitions, sediment sampling and analysis requirements, disposal criteria and monitoring requirements for dredging projects…" NR 347 requires the collection of information on a given project including, where necessary, collection and analysis of sediment from the project site. Over time a marina may be impacted by depositional sediments and have the need to dredge to accommodate their patron's boat slips, or other areas within the marina. Note: Chapter 30 rules also apply to dredging projects (refer to Ch 30 Section mentioned previously).

For information on dredging issues: *http://dnr.wi.gov/waterways/construction/dredging.html*

General Solid Waste Management (NR 500, Wis. Adm. Code)

The solid waste program strives to ensure proper management of solid waste and works with local governments, private industry, other organizations and individual citizens to increase waste reduction, reuse and recycling. It is also used in determining dredge spoils disposal (refer to NR 347 Section previously mentioned).

For additional information, please contact your local solid waste specialist: *http://dnr.wi.gov/staffdir/dynamic/solidwaste.asp*

For additional information on general solid waste management, refer to: *http://dnr.wi.gov/topic/waste/solid.html*

Hazardous Waste Management: General (NR 600, Wis. Adm. Code)

These Wisconsin rules govern hazardous waste management and may also be used in determining dredge spoils disposal. Refer to Criteria for Dredging Projects - Sediment Sampling and Analysis, Monitoring Protocol and Disposal, page 7, of this section.

For additional information, please contact your local WDNR hazardouse waste specialist: *http://dnr.wi.gov/staffdir/dynamic/hazwaste.asp*

For information on hazardouse waste management: *http://dnr.wi.gov/topic/waste/hazardous.html*

Environmental Protection, Investigation, and Remediation (Spills) (NR 700-750 Wis. Adm. Code)

These Wisconsin rules govern what happens when petroleum products are released into the environment.

For additional information, please contact your local WDNR spills coordinator: *http://dnr.wi.gov/topic/Brownfields/Contact.html*

Sea Grant
University of Wisconsin
seagrant.wisc.edu

WISCONSIN MARINA ASSOCIATION
wisconsinmarinas.org

For information on spills/environmental protection, investigation, and remediation, please refer to the following websites:

http://dnr.wi.gov/topic/spills

http://dnr.wi.gov/org/aw/rr/index.htm

Deleterious Substances (Chapter 29.601 (3), Wis. State Stats)

Wisconsin law states that no person may throw or deposit, or permit to be thrown or deposited, into any waters with jurisdiction of the state any lime, oil, tar, garbage, refuse, debris, tanbark, ship ballast, stone, sand (except where permitted by s. 30.12(3)(a)l.), slabs, decayed wood, sawdust, sawmill refuse, planing mill shavings or waste material of any kind, or any acids or chemicals or waste or refuse arising from the manufacture of any article of commerce, or any other substance deleterious to game or fish life.

For more information, contact your local conservation marine warden: *http://dnr.wi.gov/emergency/*

Environmenal Permits and Licenses

The National Pollutant Discharge Elimination System (NPDES)

Perhaps the most notable goal of the NPDES was the elimination of discharge of pollutants into navigable waters by 1985. This goal was not realized, but it remains a principle for establishing permit requirements. The act had an interim goal to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water" by July 1, 1983. This is more commonly known as the "fishable, swimmable" goal. 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.

The Wisconsin Pollutant Discharge Elimination System (WPDES) Stormwater Discharge Permit Program

By authority of the Clean Water Act, the WDNR developed the WPDES Stormwater Discharge Permit Program, which is regulated under the authority of ch. NR 216, Wis. Adm. Code. The WPDES Stormwater Program regulates discharge of stormwater in Wisconsin from construction sites, industrial facilities, and selected municipalities.

Marinas and boatyards are included in the water transportation category, which requires stormwater permit coverage (Tier 2 Industrial Stormwater Discharge permit) if they are involved in maintenance, rehabilitation, mechanical repair, painting, cleaning, fueling, and lubrication to the extent that these activities have the potential to contaminate stormwater. The stormwater permit does not cover non-stormwater discharges of wastewater, such as hull-cleaning wash water.

As a condition of the stormwater permit, marinas must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices (BMPs) to ensure that stormwater leaving the marina property will not harm the quality of surrounding waters. An example of a SWPPP is provided in Appendix III.

The General Permit for Wastewater from the Outside Washing of Vehicles, Equipment, and Other Objects (WI-0059153-2) from the WDNR

This general permit is intended to cover a variety of facilities that wash equipment, vehicles and other objects outside and cannot direct the wastewater to sanitary sewage facilities. For

marinas, this pertains to boat washing. This permit contains BMPs designed to prevent degradation of surface waters and/or groundwater. Each facility is required to meet the applicability criteria and implement the BMPs contained in the permit.

The General Permit for Wastewater from Carriage and Interstitial Water from Dredging Operations (WI-0046558-5) from the WDNR

This permit is intended to cover dredging operations where carriage water or interstitial water from sediment dredging projects is discharged to surface waters or seepage systems.

Soil Erosion and Stormwater Management

Under NR 216, Wis. Adm. Code, landowners of construction sites with one acre or more of land disturbance are required to obtain construction site permit coverage to address erosion and stormwater. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under the Construction Site Stormwater Runoff General Permit No. WIS067831.

Links

Federal Agencies

- United States Environmental Protection Agency (EPA): *http://www.epa.gov/*
- National Oceanic and Atmospheric Administration (NOAA): *http://www.noaa.gov/*
- United States Army Corps of Engineers (USACE): *http://www.usace.army.mil/*
- United States Coast Guard (USCG): *http://www.uscg.mil/*

State Agencies

- Wisconsin Department of Natural Resources (WDNR): *http://dnr.wi.gov/*
- Wisconsin Department of Safety and Professional Services: *http://dsps.wi.gov/ER/ER-index.html*
- Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP): *http://www.datcp.state.wi.us/*

Selected Federal Laws that Affect Marinas

- Clean Vessel Act: *http://dnr.wi.gov/org/caer/cfa/Grants/cleanvessel.html*
- Fish and Wildlife Coordination Act: *http://www.fws.gov/habitatconservation/fwca.html*

Wisconsin Legislature

- Wisconsin Legislature Documents Search: *http://nxt.legis.state.wi.us/nxt/gateway.dll/?f=templates&fn=default.htm*

Environmental Permits and Licenses

- National Pollutant Discharge Elimination System (NPDES): *http://cfpub.epa.gov/npdes/*
- Wisconsin Pollutant Discharge Elimination System (WPDES) Stormwater Discharge

Sea Grant University of Wisconsin
seagrant.wisc.edu

WISCONSIN MARINA ASSOCIATION
wisconsinmarinas.org

Permit Program: *http://dnr.wi.gov/topic/stormwater/*

- The General Permit for Wastewater from the Outside Washing of Vehicles, Equipment and Other Objects (WI-0059153-2) from the WDNR: *http://dnr.wi.gov/org/water/wm/ww/gpindex/gpinfo.htm*
- Soil Erosion and Stormwater Management: *http://dnr.wi.gov/topic/stormwater/construction/*

Clean Boater Tip Sheet
Wastewater Containment & Disposal

All boats generate wastewater. Sources include marine toilets, laundry/dishwashing facilities, and bilge waste. Raw or poorly treated boat sewage is harmful to human health. Typhoid fever, hepatitis, cholera, gastroenteritis, and other waterborne diseases may be passed directly to people who swim in contaminated waters. People may also become infected by eating fish contaminated with viruses and other micro-organisms contained in sewage discharge.

Sewage is also harmful to water quality because it stimulates the growth of bacteria that feed upon organic wastes. Those bacteria use up oxygen as they consume the wastes, which reduces the amount of oxygen available to fish and other forms of aquatic life. Furthermore, the nutrients in sewage promote excessive algae growth. As the algae multiply, they block life-giving sunlight from reaching rooted aquatic plants. When the algae die they create another problem--dead algae are decomposed by bacteria, which further reduces levels of dissolved oxygen.

Please follow the tips listed below to make sure that you dispose of wastewater properly.

The Law

According to federal and state law, discharge of sewage (raw or partially treated) is not allowed into any body of water in Wisconsin, with the exception of portions of Lake Superior. All vessels must have a means of containing sewage, and vessels with installed toilets must have a Marine Sanitation Device (MSD). Type III MSD systems are the only legal MSDs for boats in Wisconsin waters--the use of type I or type II systems is prohibited. Therefore, type I and type II systems must be disabled, and any y-valves must be locked down. The following describes each class of MSD system:

- Type I systems mechanically cut solids and disinfect waste. They must bear a U. S. Coast Guard certification label.
- Type II systems are similar to Type I systems. The difference is that Type IIs treat sewage to a higher standard and generally require more space and energy. Type II systems also must have a Coast Guard certification label.
- Type III systems do not discharge sewage. Holding tanks are the most common Type III system. Incinerating systems are another option. A Coast Guard label is not required.

What Can You Do?

Handling Vessel Sewage

- Before heading out on the lake, use the restroom facilities at the marina. Use shoreside toilets rather than boat heads whenever possible.
- Use the marina's pump-out or dump station. These should be well marked. If there is not a pump-out or dump station at the marina in which you launch or moor, check with marina management. They may have a cooperative agreement to use another marina's pump-out station.
- Always radio ahead to find out the operation hours for a particular pump-out facility.
- Know your MSD to prevent accidental dumping.
- Use environmentally friendly additives for your MSD. Check with your marina operator for suggested additives.
- Maintain your MSD. Have your MSD inspected regularly to ensure that it is functioning properly.
- Keep the disinfectant tank full, use biodegradable treatment chemicals, and follow the manufacturer's suggested maintenance program.
- Do not dispose of fats, solvents, oils, emulsifiers, disinfectants, paints, poisons, phosphates, diapers, and other similar products in your MSD.

Holding Tanks

- Install a holding tank. For most recreational boats with facilities or an installed toilet, a holding tank (Type III system) is preferable.
- Use good plumbing to control holding tank odor. Fiberglass and metal tanks are highly resistant to permeation. Specially labeled flexible "sanitation hoses" and PVC piping are also highly impermeable. Keep the number of connections to a minimum and make sure that seals are tight.
- Use enzyme-based products in your holding tank to further control odor. Enzymatic products use biological processes instead of harsh chemicals to break down sewage. Be sure to pump out and rinse your holding tank prior to initial use of an enzyme product if you have used chemical-based odor control 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 receiving wastewater from marina pump-out stations.

Portable Toilets

- If you have a small vessel, consider buying a portable toilet to contain raw sewage. Remember, it is against the law to dispose of raw sewage into any waters of Wisconsin.
- Empty portable toilets at the pump-out station. Do not dump the waste into marina toilets.

Pump-out station at Port Washington Marina, UW Sea Grant Institute.

Graywater

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

- Use shoreside showers, dishwashing stations, and laundry facilities whenever they are available.
- Use low-nitrogen and phosphorous-free detergents for onboard laundry, dish washing, and general cleaning.
- Use all soaps and cleaners sparingly by using a little extra "elbow grease."

Bilges

Bilges can be a major source of wastewater pollution in marinas. They tend to collect engine oil, fuel, antifreeze, transmission fluid, and lubricants—all of which may contain pollutants known as petroleum hydrocarbons as well as other toxic elements and metals. When the bilge pump is activated manually or automatically, these pollutants are pumped overboard into the water. Additional bilge water concerns and good boating practices are included in the Wisconsin Clean Boater Tip Sheet titled "Fuel & Oil Control."

- Avoid discharging bilge water that has an oily sheen.
- Use bilge socks to collect floating oil and fuel in the bilge.
- Replace these 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 your boat's bilge. Filters will remove oil and fuel from the water.

Bilge sock (BoatU.S. Foundation).

WISCONSIN CLEAN MARINA

Clean Boater Tip Sheet
Engine Maintenance

The general maintenance of boat engines can generate pollutants and waste products that can be harmful to the environment. Some of these potential pollutants include solvents, paints, lubricants, oil, antifreeze, fuel, batteries, and bilge switches that contain mercury. Proper use, storage, and disposal practices are crucial to keeping these pollutants out of the environment. As a boater on Wisconsin waters, you can be an active steward of this valuable resource by implementing these engine-maintenance practices:

Routine Engine Maintenance

Routine engine servicing often requires the handling of toxic substances such as oil and solvents. Care must be taken while the cleaning is done.

- Check with marina staff to find out where engine maintenance is allowed at the marina.
- Clean the work area with absorbent materials and a broom, instead of hosing the work area down.
- Ask if your facility has a collection area for boat maintenance waste from boaters (used oil filters, waste oil, lead-acid batteries, etc.). If not, take them to a household hazardous waste facility or used oil recycling center.
- Pre-clean engine parts with a wire brush to eliminate the need for solvents.
- If you must use solvents, use volatile organic compound-free (VOC-free) solvents.
- Keep the use of engine cleaners to a minimum. Parts cleaning should not be done in the bilge or over open ground or water. It should be done in a container or parts washer where the dirty fluids can be collected and recycled.
- In order to catch the oil spilled during filter removal, slip a plastic bag over the filter and then remove it.
- Drain oil filters for at least 24 hours, and take them to an oil recycling or hazardous waste center. A new Wisconsin law prohibits disposing of oil filters in the trash.
- Dispose of all used oil and materials that have been soaked with oil at the marina's hazardous waste disposal area.
- Keep engines properly tuned for efficient fuel consumption, clean exhaust, and lower operating costs.
- Keep your engine clean. It makes it easier to spot and correct small leaks before they become big problems.
- When undertaking maintenance, wipe up spills so that they do not get pumped overboard with bilge water.
- Keep an oil absorption pad in the bilge or below the engine to collect spilled products.
- For spill-proof oil changes, use systems that remove crankcase oils through the dipstick tube. Ask your marina manager if the marina has this service available.
- Do not discharge oil into the water—it is prohibited by law. All boats 26 feet or longer are required to have a sign regarding oil pollution control regulations posted in the engine compartment. These signs are available at most marine supply stores.

Winterizing your boat

- Do not use the green-colored ethylene glycol antifreeze, which is highly toxic and can kill animals that ingest it. Instead, choose the blue, pink, or clear-colored propylene glycol antifreeze, which is less toxic.
- Fill fuel tanks to 90 percent of capacity during winter storage to reduce condensation buildup and prevent leaks as tank contents expand during warmer weather in spring.
- Consider adding a fuel stabilizer so that you will not have problems disposing of stale fuel in the spring.
- 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. It is illegal to "blow out" antifreeze into the water.

Clean Boater Tip Sheet
Hull Maintenance

As a boat owner, you are well aware of the care your investment requires. In order to keep your boat safe, reliable, and attractive, you must continually clean and maintain it. As you do so, you can minimize environmental impacts by following the hull maintenance recommendations listed below.

Routine Hull Maintenance

- If your marina allows do-it-yourself boat maintenance on site, perform repairs and maintenance activities in designated areas and follow your marina's "yard rules."
- When working in marinas, use the specially designated sanding and painting areas. Check with the marina manager for the location and proper use of these areas.
- Work indoors or under cover whenever wind could potentially blow dust and paint into the open air.
- Do not work on your hull near the water.
- Avoid cleaning your boat bottom when it is in the water because toxic antifouling hull paint may be removed and washed into the water.

Sanding, Grinding, or Scraping

Sanding and painting can create environmental hazards if not conducted in a controlled area. Many antifouling paints are made with toxic chemicals designed to leach out and prevent bottom growth on the hull. When concentrated amounts of these materials are allowed to escape from hull maintenance and repair areas, there is a potential for environmental harm. Solvents, thinners, and brush cleaners can harm the environment if improperly handled. These materials contain cancer-causing agents and have a tendency to sink in the water, degrading water quality and damaging aquatic life and the aquatic environment.

- Use environmentally friendly tools, such as vacuum sanders and grinders, to collect and trap dust. Some marinas have this equipment for rent; check with the manager.
- 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.
- Use a drop cloth beneath the hull to catch sanding dust and paint drops when working over unpaved surfaces. Do not sand on windy days.
- When sanding or grinding hulls over a paved surface, vacuuming or sweeping loose paint particles is the preferred clean-up method. Do not hose the debris away.
- Use a dust-free sander if possible. It will reduce clean-up time and is more enjoyable to use because you won't be breathing in harmful paint dust. Ask your marina manager if dust-free sanders are provided through the marina.
- If you are not using a dust-free sander, use tarps or filter cloth to help collect your scraps.

Painting and Varnishing

Boat paint contains harmful components, including metals, solvents, and dyes. Precautions must be taken to prevent paint and paint chips from ending up in the water. You can play an important role in protecting water quality while painting your vessel by following these simple tips:

- Buy paints, varnishes, solvents, and thinners in sizes that can be used within one year to avoid having to dispose of stale products. 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.
- When possible, use water-based paints and solvents.
- Switch to longer lasting, harder or nontoxic antifouling paint at your next haul out. Select a bottom paint developed for freshwater lakes and rivers. Check with your marina operator for recommended paints appropriate for freshwater use.
- Paints and solvents should be mixed far from the water's edge and transferred to work areas in tightly covered containers of one gallon or less.
- Keep in mind that solvents and thinners can be used more than once by allowing the solids to settle out and draining the clean product off the top. Dispose of dried settled solids in your regular trash at home or in designated receptacles at your marina.
- Thoroughly dry all empty paint cans and old brushes before disposing of them in the trash.
- Don't wash rags containing solvents, paints, thinners, or teak treatment. Dispose of them in the trash.

Clean Boater Tip Sheet
Non-Toxic Cleaning Alternatives

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. Use cleaning products sparingly and minimize the amount discharged into the water. Never dispose of any cleaning products down the thru-hull drain; dispose of them on shore. The following list provides non-toxic alternatives to typical cleaning products for your boat and home:

Products	Alternative
Chlorine Bleach	Borax or baking soda and water.
Air Freshener	Leave out an open box of baking soda.
Disinfectants	One half-cup of borax in one gallon of water.
Scouring Powders	Baking soda. Or rub the area with one-half lemon dipped in borax, then rinse.
General Cleaner	Baking soda and vinegar. Or lemon juice combined with Borax paste.
Floor Cleaner	One cup vinegar + 2 gallons of water.
Window Cleaner	One cup of vinegar + 1 quart of warm water. Rinse and squeegee. Or rub glass with newspaper.
Toilet Bowl Cleaner	Use toilet brush and baking soda.
Aluminum Cleaner	2 tablespoons of cream of tartar + 1 quart of hot water.
Brass Cleaner	Worcestershire sauce. Or a paste made of equal amounts of salt, vinegar, and water.
Copper Cleaner	Lemon juice and water. Or a paste made of lemon juice, salt, and flour.
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish.
Stainless Steel Cleaner	Baking soda or mineral oil for polishing; vinegar to remove spots.
Fiberglass Stain Remover	Baking soda paste.
Mildew Remover	Paste made of equal amounts of lemon juice and salt, or white vinegar and salt.
Drain Opener	Dissemble or use plumber's snake. Or flush with several quarts of boiling water + one-quarter cup baking soda + one-quarter cup vinegar.
Wood polish	Olive or almond oil. (Interior walls only.)
Hand cleaner	Baby oil or margarine.
Head & Shower	Baking soda; brush thoroughly.
Rug/Upholstery Cleaner	Dry corn starch sprinkled on; vacuum.

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

WISCONSIN CLEAN MARINA

Clean Boater Tip Sheet
Boat Cleaning

In order to keep your boat safe, reliable, and attractive, you must properly clean and maintain it. You can minimize environmental impacts by following the recommendations listed here.

Some of the common solvents and cleaners that are used by boaters can cause harm to the aquatic environment if care is not taken during their use. Some cleaning products contain harsh chemicals such as chlorine, ammonia, and phosphates that can harm fish and wildlife. Chemicals contained in cleaners or antifouling paints can accumulate in aquatic organisms. That is, they become more concentrated as they are ingested successively by animals higher up on the food chain and ultimately may be consumed by a variety of wildlife or humans. While there may be little harm in cleaning a single boat, consider what can happen when many boaters in the marina are doing the same thing. Because marinas are located in a sheltered environment, pollutants tend to build up within their basins.

As a boater on Wisconsin waters, you can be an active steward of our valuable natural resources by implementing these vessel-cleaning practices:

Clean Carefully

- Whenever possible, clean as much of your boat as you can before launching it for the season. Wash the boat on land in a contained area where the wash water can be collected and treated or soak into the ground. Don't 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.
- Collect all paint chips, dust, and residue. Dispose of them in your regular trash at home or in designated marina receptacles.
- While on the water, wash your boat above the waterline by hand with a sponge and plain water. If you do this frequently enough, you won't need to use harsh chemicals as often.
- If washing with water does not work, try natural cleaners, such as lime juice, borax, and baking soda. See the list of alternatives outlined in the Wisconsin Clean Boater Tip Sheet titled "Nontoxic Cleaning Alternatives."
- Use cleaning products that are environmentally friendly (e.g., nontoxic and phosphate-free). Always follow the instructions on the label and test the product in an inconspicuous area. Use the products sparingly and only when "elbow grease" is not working.
- When detergents are necessary, use soaps that are phosphate-free, biodegradable, and nontoxic. Beware of biodegradable cleaners that may still be toxic. All soaps should be used sparingly because even nontoxic products can be harmful to wildlife.
- Avoid detergents that contain ammonia, sodium hypochlorite (bleach), chlorinate solvents, petroleum distillates, and lye.
- Avoid cleaning your boat below the waterline while it is in the water.
- Do not use cleaning solvents on your boat when it is in the water.
- Wax your boat, if appropriate. A good coat of wax prevents surface dirt from becoming ingrained.
- Clean teak with a mild soap and abrasive pad, nylon brush, or bronze wool.

Recycle Regularly

- Become knowledgeable about disposal procedures for waste and hazardous materials at your marina.
- Bring used solvents and waste gasoline to local hazardous waste collection points.
- Recycle used oil, oil filters, and antifreeze.

Be a Conscientious Consumer

- Read product labels. Labels convey information about the degree of hazard associated with a particular product. For example, DANGER equates to extremely flammable, corrosive, or toxic; WARNING indicates that the material is moderately hazardous; and CAUTION signals a less hazardous product. Select products that contain no warning or which merely CAUTION consumers.
- Be wary of unqualified general claims of environmental benefit, e.g., "ozone friendly." A better, more meaningful label would read, "This product is 95 percent less damaging to the ozone layer than past formulations that contained chlorofluorocarbons (CFCs)."

Clean Boater Tip Sheet
Solid Waste Containment and Disposal

Solid waste, such as bottles, cans, fishing line, plastic bags, six-pack holders, boat shrink wrap, and other refuse, can injure or kill aquatic life and birds by trapping or entangling them. Not only is trash unsightly and dangerous to wildlife, it can also foul props or water intakes of boats or other equipment.

The Law

Congress passed a law in 1987 to protect our waterways from garbage. The Marine Plastic Pollution Research and Control Act (MPPRCA) regulates the disposal of garbage within United States lakes, rivers, and bays. The act states that it is illegal to discharge plastic materials into any body of water and restricts the overboard discharge of garbage.

Contain Trash

- Don't let trash get thrown or blown overboard.
- If trash blows overboard, retrieve it. Consider it "crew overboard" practice.
- Pack food in reusable containers.
- Buy products without plastic or excessive packaging.
- Don't toss cigarette butts overboard. They are made of plastic (cellulose acetate).
- Don't toss fishing line overboard.
- Purchase refreshments in recyclable containers and recycle them.
- Properly dispose of all trash on shore. Take it home or leave it in a dumpster at the marina.

Controlling Solid Waste

- If you see a problem with trash or hazardous waste at the marina, contact a marina staff member immediately.
- Have a waste container on your boat. Your policy should be to carry out what you carry in. Be a good neighbor and pick up trash that you come across, either floating in the water or on land.
- Use recyclable containers and reusable bags. Minimize the use of plastic wrap and disposable bags on your boat.
- Find out if your marina recycles shrink wrap used for winter boat storage. Recycle your shrink wrap if possible.
- Properly dispose of unwanted waste chemicals through the household hazardous waste collection program in your community.
- Clean up after your dog and deposit all pet waste in a trash can or appropriate receptacle.
- Use the marina trash cans and recycling bins. Replace the lids after using them so that waste does not blow out of the cans or bins.
- Cut the rings of six-pack holders prior to disposal.

Fish Waste

Fish cleaning may damage water quality if the wastes are discarded into the poorly flushed marina basin. Fish waste has an unpleasant smell and is unsightly. In addition, decomposing fish waste reduces oxygen levels, which harms aquatic life. Disposing of fish waste in the marina basin is prohibited. Avoid problems by following these tips:

- Find out what your marina's fish cleaning and disposal policy is.
- Double bag waste and dispose of it at home or in a dumpster at the marina designated for fish waste.
- Clean your fish at a fish-cleaning station – not at the dock – to keep the marina and water cleaner, keep odors down, and reduce nuisance birds and pests.
- Compost your fish waste if your marina has a waste composting program.
- 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.

Recycle Regularly

- If you need to dispose of or recycle hazardous waste, including used oil, absorbent pads, paints, and solvent, ask the marina staff where this material may be properly handled.
- Recycle cans, glass, newspapers, antifreeze, oil, and lead batteries.
- Bring used monofilament fishing line to recycling bins at your tackle shop or marina.
- Become knowledgeable about disposal procedures for waste oils, filters, absorptive materials, and other hazardous materials at your marina.

Proper Waste (Solid and Liquid) Disposal

Always check first with your marina operator for proper disposal or recycling of wastes at the marina or other locations. All of the following materials can be properly disposed of at a household hazardous waste (HHW) facility. 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 HHW or oil collection facility.
Antifreeze	Recycle or send to a HHW facility.
Paint and Varnish	Allow to dry completely and solidify. 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.

UW Sea Grant Institute.

Fish cleaning station at Port Washington Marina, UW Sea Grant Institute.

WISCONSIN CLEAN MARINA

Clean Boater Tip Sheet
Fuel & Oil Control

Petroleum in or on the water is harmful and, in some cases, fatal to aquatic life such as fish, birds, and invertebrates. Oil can enter water intakes and affect drinking water, and a gasoline spill poses a significant fire and explosion hazard. Gasoline and oil may also contain cancer-causing chemicals, including benzene and PCBs. In addition, spilled oil is unsightly and can stain the shoreline. Floating petroleum is particularly bad because it blocks sunlight from reaching underwater plants and blocks the exchange of oxygen at the water's surface, which is harmful to fish and aquatic plants.

The Law

The Federal 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.

In Case of a Spill

- If you see a leak of hazardous waste (e.g., fuel or oil) or if you experience a spill, stop the spill at the source and contact the marina staff immediately.
- Contain the spill.
- Immediately notify the marina and the Coast Guard if you cause a spill – it's the law. Call the National Response Center at (800) 424-8802.
- Do not use emulsifiers or dispersants (soap) to treat or disperse a spill; this is prohibited by federal law and may result in a significant fine.
- If you do have a spill while fueling or see a leak of hazardous waste, clean it up with an oil absorbent material such as a pad, boom, or pillow. Dispose of the used absorbent material appropriately.

Fueling Practices

Gas or diesel may be spilled during the act of fueling as backsplash out of the fuel intake or as overflow from the vent fitting. Spills of this sort harm aquatic life, waste money, and can result in stains on the hull and damage to the gel coat and striping. Follow these tips to avoid problems:

- Have a trained attendant supervise or fuel your vessel for you.
- Never leave the fuel hose unattended when fueling.
- Fill tanks to no more than 90 percent capacity– fuel that is drawn from cool storage tanks will expand as its temperature rises. Don't top off your tank. It will cause a gasoline spill.
- To prevent spills from the tank vent, install a fuel/air separator or an air whistle in your tank line. Ask the marina staff if they know who can provide this service.
- To determine when the tank is 90 percent full, listen to the filler pipe, use a sounding stick, and be aware of your tank's volume. Use your hand to feel for air escaping from the vent. You will feel and hear an increase in air flow as the tank approaches full.
- Rather than filling your tank upon your return to port, wait and fill it just before leaving on your next trip. This practice will reduce spills due to thermal expansion because the fuel will be used before it has a chance to warm up.
- To fill portable tanks, remove them from your boat and fill them at the pump in a collection pan, where spills are less likely to occur and easier to clean up.
- Use a spill collection bottle over the fuel vent to catch fuel backsplash, if the marina has one available. Place an absorbent pad or container over the fuel fill or under the fuel vent to collect accidental overflow.
- Slow down at the beginning and end of fueling.

Bilge Maintenance

Engine oil tends to accumulate in bilges. If no precautions are taken, the oil is pumped overboard along with the bilge water. Discharging oily water is illegal. To avoid fines and to protect water quality, follow these tips:

- Keep your engine well turned to minimize the amount of oil that is released. 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 treat oily water with detergents. Soaps pollute and make spill clean-up impossible. You may be fined for using soaps to dissipate oil.

Disposal of Oil-Absorbent Materials

The disposal of used oil-absorbent material depends on what type of product it is and how it was used:

- Engine oil filters and oil absorbent materials will be banned from Wisconsin landfills starting January 1, 2011.
- Standard absorbents saturated with oil or diesel may be wrung out over oil recycling bins and reused (if they are saturated with oil or diesel only, not gasoline!).
- Always check with the marina operator before disposing of any used material. Call your municipal solid waste department or WNDR regional office for oil recycling locations in your area.

Recycle Regularly

- Bring used solvents and waste gasoline to local hazardous waste collection days or check with your marina for collection.
- Never dump waste oils and engine coolants on the ground or into storm drains, dumpsters, or open waters.
- When disposing of petroleum-based products, such as fuels and engine oils, keep them separate from each other and from other substances, such as antifreezes, solvents, and water. This lowers the disposal cost charged to your marina or collection facility by preventing the creation of mixed "hazardous wastes."

Emissions Control

Marine engines – especially two-stroke outboard motors – produce the highest average level of hydrocarbon exhaust emission after lawn and garden equipment. Hydrocarbon emissions contribute to ground-level ozone, a known health risk, and greenhouse gases that contribute to climate change. Follow these tips to help your engine operate as efficiently as possible:

- Use the gas-to-oil ratio recommended by the engine manufacturer. Too much oil can foul spark plugs and too little can lead to increased engine wear or even failure. Use premium two-cycle engine oil (TC-W3 or TC-W4). Premium oils improve engine performance and reduce pollution because they burn cleaner, contain more detergents, and prevent formation of carbon deposits.
- Use gasoline with the octane level recommended by the engine manufacturer.

Preventive Equipment

Commercial products are available that can help you prevent spills and reduce emissions. Actions you can take include:

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

Fuel bib (BoatU.S. Foundation).

WISCONSIN CLEAN MARINA

CLEAN BOATER TIP SHEET
AQUATIC INVASIVE SPECIES

Our nation's waters are under attack by aquatic invasive species, also called "exotic" or "non-indigenous" because they are not native to our waters. Many came from Europe and Asia in the ballast waters of ships, and they are spreading at alarming rates. In many cases, they are having negative effects on our native species, habitats, and water quality.

Some species, like zebra and quagga mussels and Eurasian watermilfoil, are spreading as "hitchhikers" on boats and other recreational equipment. Whenever you leave a body of water without cleaning your equipment, you may be taking one of these harmful organisms with you. If you then travel to other waterways, you could inadvertently be spreading that invader. As a boater on Wisconsin waters you can be an active steward of our valuable resources by implementing these practices:

Before Leaving the Boat Launch

- Inspect your boat, trailer, and equipment and remove any plants, sediment, and animals.
- Drain, on land, all water from the motor, livewell, bilge, and transom well. Some invasives may not be visible to the naked eye.
- Bait buckets can transport invasive species and fish diseases. Do not empty your bait bucket into the water. Empty your bait bucket in the trash to help prevent the spread of invasive species and fish diseases.

After Leaving the Boat Launch

- Wash your boat, tackle, trailer, and other equipment with hot (104^{o}) tap water or a high-pressure sprayer to kill or remove any exotic species not visible at the boat launch. Or, allow your boat and other equipment to dry thoroughly in the sun for at least five days before moving to another body of water – some invasives can survive for long periods of time out of water.
- If you have used your watercraft where a fish disease called viral hemorrhagic septicemia (VHS) has spread (check with your local Wisconsin Department of Natural Resources [WDNR] office or Wisconsin Sea Grant), disinfect the outside and inside of your watercraft and your gear after using them. Mix one cup bleach in 10 gallons of water and brush/mop your watercraft and trailer surfaces. Test this diluted bleach solution in an inconspicuous location prior to applying to the entire watercraft and trailer. Keep the surface wet for five minutes, then rinse with water. Disinfection should occur on land away from lakes, rivers, and storm drains because chlorine is toxic to aquatic life.

Other Helpful Practices

- Do not use fish parts as bait or chum. This practice encourages the spread of VHS and other fish diseases.
- Help prevent the spread of invasive species and fish diseases by not transferring water, fish, fish eggs, or other aquatic organisms between waterways.
- Learn what aquatic invasive species look like by viewing images of aquatic invasive species at http://www.iisgcp.org/NabInvader/sgnisimages/CATALOG1.HTM. Know how to identify Eurasian watermilfoil, round goby, zebra mussel, quagga mussel, spiny waterflea, bighead carp, silver carp, phragmites and purple loosestrife, to name a few. Know which waterways are infested, and report any new infestation to Wisconsin Sea Grant at **(920-683-4697)** or your local WDNR service center**.**
- For further recommendations on controlling the spread of aquatic invasive species, including any permit requirements for applying control methods, talk with the staff of WDNR's Divisions of Fisheries Management and Wildlife Management as well as staff from Wisconsin Sea Grant.

CLEAN BOATER TIP SHEET
SPRING START-UP: ANTI-FREEZE COLLECTION AND DISPOSAL

Spring is in the air and you are anxious to launch your boat for the season. What do you do with the used anti-freeze? Help keep our lakes and rivers clean and healthy by following these steps for proper anti-freeze collection and disposal. Foremost, make sure you always use propylene glycol anti-freeze (pink, blue or clear) rather than the more toxic, green ethylene glycol anti-freeze.

Why is it illegal to discharge anti-freeze into Wisconsin waters?

Although propylene glycol (pink, blue or clear) anti-freeze is safer, it still can be harmful to fish and other aquatic life, especially when multiple boats flush their engines and holding tanks near boat docks, which are close to the spawning grounds of many species of fish. Waste anti-freeze also can contain heavy metals or fuel from engines that can classify it as hazardous waste. Anti-freeze dumping in open waters has been known to cause fish-kills.

Anti-freeze Collection and Disposal Tips

Engine

1. Begin at a location away from open waters.
2. Check your bilge and clean out any oil if present with a bilge pillow or absorbent pad.
3. Attach a hose directly to your intake port (inboards and some inboard/outboards) or use a flushing kit (ear muffs) for engines without a port. Attach the other end of the hose to a water source. Attach a second hose over the exhaust port and place the other end into a 5 gallon bucket or hold a bucket to catch the anti-freeze as it exits the engine. Have another 5 gallon bucket ready to switch the hose when the first bucket is full.
4. Turn on the water and start your engine. Collect the water and anti-freeze mix in the two buckets, and then let the remaining water drain on the ground until the engine is up to temperature.
5. Turn off the engine and water.
6. Dispose of the diluted anti-freeze at a marina or automotive center that accepts and recycles anti-freeze. The initial 5 gallon bucket may contain anti-freeze suitable for reuse next winter. If recycling is not available, pour into a sanitary sewer (toilet or basement drain) that goes to a local sewage plant for treatment. Do NOT pour it into a storm sewer. These discharge directly into streams, lakes or wetlands. Never dump it in a septic system.
7. If you notice any water or oil leaks during this process, your engine may need service.

For boats with large engines, do not try to flush antifreeze on your own. Please take your boat to an experienced service technician.

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 anti-freeze until the water runs clear.
4. Dispose in the same manner as #6 above.

Sewage Holding Tank

In spring use the head as usual and pump out when needed. This anti-freeze and sewage mix will go directly to a sewage treatment plant.

- Now you're off to a great start to the boating season.
- Thanks for taking a little time and effort to keep our waters clean and to protect fish spawning grounds.
- Make sure you have your updated boater registration and appropriate safety gear.
- Find more tip sheets for cleaner boating at http://www.wisconsincleanmarina.org/Default.aspx?tabid=61

WISCONSIN
CLEAN MARINA
APPENDICES

Appendices

I. Spill Prevention, Control, and Countermeasure (SPCC) Plan

II. Emergency Response Plans

Sample Emergency Response Procedure Manual from Washburn Marina

Sample Safety and Emergencies Response Procedures Manual from Manitowoc Marina

III. Stormwater Pollution Prevention Plan (SWPPP)

WisconsinCleanMarina.org

seagrant.wisc.edu

wisconsinmarinas.org

Appendix I: Spill Prevention, Control, and Countermeasure (SPCC) Plan

Frequently Asked Questions

What is a spill prevention, control, and countermeasure (SPCC) plan?
An SPCC plan is a written document that describes measures one has taken to prevent, contain, and clean up oil spills. The term "oil" includes gasoline, diesel, heating oil, and solvents. Each SPCC plan is site specific but must address operating procedures that prevent spills, control measures installed to prevent a spill from reaching the environment, and countermeasures to contain, clean up, and mitigate the effects of an oil spill that reaches the environment.

Who needs an SPCC Plan?
Any marine facility that has an aggregate aboveground petroleum storage capacity greater than 1,320 gallons (containers of less than 55 gallons and/or permanently closed storage tanks are exempt from the total) or an underground storage capacity greater than 42,000 gallons and is located where there is a reasonable expectation of a discharge into or upon the navigable waters of the U.S. or adjoining shorelines must have a SPCC plan.

Are SPCC plans required by law?
Yes, SPCC plans are required by federal regulation 40 CFR 112, which is implemented by the U.S. Environmental Protection Agency. Like all rules, the SPCC rule is subject to change. Visit www.epa.gov/emergencies/content/spcc for current information.

Can I prepare my own SPCC plan?
Any facility operator may draft his or her own SPCC plan. The template in this appendix can be used as a guide. **It is highly recommended that you create this document electronically.** Visit www.WisconsinCleanMarina.org for an electronic version of this template.

A December 2006 amendment to the SPCC rule allows facilities that meet the following criteria to certify their own plan. Facilities that do not meet **both** criteria must have a professional engineer review and certify the plan. If you use the template in this appendix, use either the "self-certification" OR the "professional engineer certification" front page, as appropriate.

To self-certify their SPCC plan, facilities must: a) have 10,000 gallons or less in aggregate aboveground oil storage capacity and b) not have had (1) a single discharge of oil to navigable waters exceeding 1,000 U.S. gallons or (2) two discharges of oil to navigable waters each exceeding 42 U.S. gallons within any twelve-month period in the three years prior to the SPCC Plan certification date, or since becoming subject to 40 CFR part 112 if operating for less than three years.

Does the term "oil" include vegetable oil, transformer oil, and other nonpetroleum-based oil?
Yes. "Oil" is defined in 40 CFR 112.2 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 dredge spoil. This definition has been interpreted to include vegetable oil, mineral oil, transformer, and other oils.

Who do I give the SPCC plan to?
A copy of the entire SPCC plan must be maintained at the marina if the facility is normally attended at least eight hours per day or at the nearest field office if the facility is not so attended.

The SPCC plan is not required to be filed with the U.S. EPA, but a copy must be available for on-site review by the regional administrator during normal working hours. The SPCC plan must be submitted to EPA Region V if a single spill of greater than 1,000 gallons occurs or if two discharges of 42 gallons or more occurs within any twelve-month period.

How often must I review the SPCC plan?
The facility owner or operator must review the SPCC plan at least every five years. These reviews must be documented.

When do I have to update the SPCC plan?
The SPCC regulation requires the owner or operator to amend the plan whenever there is a change in facility design, construction, operation, or maintenance that materially affects the facility's potential to discharge oil. Such amendments must be fully implemented not later than six months after the change occurs. All amendments must be certified by a registered professional engineer.

Spill Prevention, Control, and Countermeasure (SPCC) Plan

This template was provided by the Maryland Clean Marina Program.

Marina Name: _____

Address: _____

_____

Contact Name: _____

Phone: _____

Fax: _____

E-mail: _____

Certification:

I hereby certify that I have examined the facility, and, being familiar with the provisions of 40 CFR part 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*

Spill Prevention, Control and Countermeasure (SPCC) Plan

This template was provided by the Maryland Clean Marina Program.

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 part 112, attest that this SPCC plan has been prepared in accordance with accepted and sound industry practices and standards, and with 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. I attest this facility is a "qualified facility" as defined in 40 CFR Part 112.3 (g) which indicates the facility: 1) has an aggregate aboveground storage capacity of 10,000 gallons or less and (2) has had no single discharge as described in § 112.1 (b) exceeding 1,000 U.S. gallons or not two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan self-certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than discharges as described in §112.1(b) that are result of natural disasters, acts of war, or terrorism).

In self-certifying this plan I also attest that:

(1) I am familiar with the requirements of 40 CFR part 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 with 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 template is provided as a guidance tool. Use of this template does not relieve users of their responsibility to comply with 40 CFR Section 112 in its entirety. By signing and self-certifying this plan below, I acknowledge that the WI Clean Marina Program and the Wisconsin Marina Association and its staff are not responsible and/or liable for any of my actions or for compliance with the above-mentioned rules. In addition, I agree to release and hold harmless the WI Clean Marina Program and the Wisconsin Marina Association from any liability in the event of fines, penalties, or prosecution by the EPA.

This plan has been self-certified by:
Name:
Title:
Address:
Date of certification:

This template was provided by the Maryland Clean Marina Program.

Facility Information

Facility Name: _____

Mailing Address: _____

_____

Physical address, if different: _____

_____

Owner Name: _____

Owner Address: _____

Primary Contact Name: _____

Work Phone Number: _____

Home Phone Number: _____

Mobile Phone Number: _____

Secondary Contact Name: _____

Work Phone Number: _____

Home Phone Number: _____

Mobile Phone Number: _____

Date of Initial Operation: _____

Site Assessment

Location: Describe where facility is located.

Adjacent Water Body: _____

Nearest Confluence: _____

Mile Marker: _____ Latitude: _____ Longitude: _____

County: _____

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 above-ground 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.

_____

_____

_____

_____

Total quantity of stored materials

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	gradual to 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 (*e.g.*, if it was being taken out of service).

**** Calculate based on the specifications of your equipment.

Spill Prevention and Control

Spill Prevention

Provide specific descriptions of containment facilities and practices. Include description of items such as 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 and 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 on the "SPCC Plan Appendices" on page 13.)

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, *e.g.*, U.S. Coast Guard, fire department, spill response contractors, etc. 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

A. Name facilities and the frequency with which they are inspected. For example, "The fuel pumps are inspected daily. The materials storage area is inspected monthly." Name the person who has the responsibility to implement preventative maintenance programs, oversee on-site inspections, coordinate employee training, maintain records, update the plan as necessary, and ensure that reports are submitted to the proper authorities.

B. 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 the 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 a minimum of three years. The following items will be kept on file: 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

Maintenance Coordinator: _____. Maintenance Coordinator responsibilities include implementation of preventative maintenance programs and oversight of on-site inspections.

Use this table to record inspections.

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

Employee Training Coordinator: _____

Use this table to record spill prevention and response training.

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: _____. Record Keeper responsibilities include maintaining records of incidents, updating the SPCC plan as necessary, and ensuring that reports are submitted to the proper authorities when necessary.

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 (ruler) while creating the sketch.

- The sketch should be oriented as if you were in a plane looking down on your property (an aerial view).
- Draw and label all roadways surrounding your marina property.
- Draw and label all facilities within your marina as close proportionately as possible.
- Draw an arrow indicating north.
- Draw an arrow(s) pointing in the direction of downhill flow of water when it rains.
- Draw the location of any inlets or catch basins that may presently exist on your property.
- Draw the location 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, i.e., boat ramps, lift well, etc.
- Draw and label with an arrow boat washing areas.
- Draw and label the location of all fuel containment facilities.
- Draw and label the location of all in-place spill prevention, control, and countermeasure devices.
- Draw and label the location 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.

The first item ought to be a site plan.

Site Plan
Show valves, pipes, tanks, structures, roads, hydrants, docks, power and fuel shutoffs, hazardous material storage locations (*e.g.*, solvents, fuels, pool chemicals, pesticides - indicate quantities), location of response materials, and telephones.

Then, prepare individual plans for all likely threats, such as fuel spills, health emergencies, fires, etc. Keep the plans SIMPLE. Include the following information in each.

Personnel
Identify who is responsible for taking what action, e.g., deploying equipment, contacting emergency agencies, etc. Designate one person on the marina staff as the official spokesperson for the facility.

Phone Numbers
When calling an emergency response agency, be prepared to describe the nature of the emergency, the location and address of the marina, and the exact location within the complex.

- U.S. Coast Guard National Response Center (fuel spill): 800-424-8802
- WDNR 24-hour Spill Emergency Hotline: 800-943-0003
- WDNR Enforcement (complaints or spills): 800-TIP-WDNR (24 hours)
- WDNR Information (questions and information): 800-DNR-INFO (7:00 a.m. to 10:00 p.m.)
- Wisconsin Poison Center: 800-222-1222
- Fire Department
- Police Department
- Local Hospital
- Owner
- Spill Response Contractors
- Neighboring Marinas with Emergency Response Equipment

Action
State what action should be taken during an emergency and, based on likely threats, what equipment should be deployed. Include information about what type of equipment is available on site and what its characteristics and capabilities are. Explain how to use and dispose of the equipment.

Florida Sea Grant has developed the "Panic Preventer File for Marinas" as a model that can be adapted for a particular marina's needs. To order a "Panic Preventer File," visit the following website: http://ifasbooks.ifas.ufl.edu/p-98-panic-preventer-file-generic-model-for-marinas.aspx or view online at: http://nsgl.gso.uri.edu/flsgp/flsgph07001.pdf

Sample Emergency Response Procedure Manual from Washburn Marina

1 Marina Drive
Washburn, Wisconsin 54891
715-373-5050
boat@washburnmarina.com
www.washburnmarina.com

EMERGENCY RESPONSE PROCEDURE MANUAL

EMERGENCY RESPONSE PROCEDURE MANUAL

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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

INCLUDES BOAT FIRES AT THE PIER

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 ____your name___ 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 her 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
FIRE EMERGENCY PLAN

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 ____your name___ 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.
3) 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.
4.

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.

Sample Emergency Response Procedure Manual from Manitowoc Marina

MANITOWOC MARINA SAFETY & EMERGENCIES
Procedures Manual

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EMERGENCY TELEPHONE NUMBERS
Section 1

*When calling in an Emergency, clearly state **what** the emergency is and **where**.*

All Safety & Security Emergencies	**911**
Fire Department	
Manitowoc Police Department	
Manitowoc County Sheriff's Department	
Wisconsin State Highway Patrol	
Medical Rescue/Ambulance	911
Aurora Medical Center Emergency Room	
Poison Information	
Two Rivers Coast Guard Station	
National Response Center	800-424-8802
WI DNR Marine Warden	
Safety-Kleen Environmental Services	
Federal Bureau of Investigation (FBI)	
Marina's Attorney	
Marina's Insurance Agent	

Key Manitowoc Marina Staff After Hours

Marina General Manager
Service Dept. Supervisor
Office/Store Manager

EMERGENCIES at Manitowoc Marina
Section 2

Emergencies Will Happen In Our Marina.
ALL Emergencies Are Serious.
Small Emergencies Don't Stay Small If Not Rapidly Handled.

To help anticipate and be prepared, this chapter covers the major emergencies. While some types of emergencies and accidents happen each year (such as cuts, people falling down, small oil spills), others may not happen more than once in thirty years (e.g., tornadoes) if ever.

There are hundreds of types of emergencies that all Manitowoc Marina Employees need to watch out for, and to understand what to do when something does happen.

The following emergency situations might not necessarily happen in every geographical location, but have occurred somewhere in a Marina:

- Equipment operational failure, crane crash, boat dropped from fork lift
- Collisions between cars, boats, trucks
- Boating accidents, person overboard, drowning, hypothermia
- Sunk or sinking boat
- Fueling boat explosion and fire at the fuel dock
- Oil and gasoline spills
- Fire in boat storage building, repair shop, Marina office, store, anywhere
- Chemical injury to workers
- Medical emergency, e.g., heart attack, poisoning, concussion, finger loss
- Boat theft, fight among customers on dock, hold ups, drug sales, dog bite
- Ice damage to docks
- High wind damage, tornadoes, hurricanes
- Floods, extra high tides, seiches and storm surge
- Earthquake
- Lightning damage
- Nuclear accident evacuation
- Bomb threats, terrorist attack

By being prepared for the worst of most situations, Manitowoc Marina Employees will be able to try and handle the situation better, and safer, than if with no planning or preparation at all.

SAFETY STATEMENT OF PURPOSE
Section 3

Manitowoc Marina has a commitment to quality facilities, customer satisfaction and productive use of our resources. By far, the safety of our people is our primary concern. The creation and maintenance of a safe work environment must be regarded as equal to all other business considerations.

The prevention of personal injuries through the safe performance of our jobs and the provision of a safe work environment is good business. It is the direct responsibility of each supervisor to manage for accident prevention by safeguarding operating hazards and training Employees to perform their jobs safely.

Working safely is the first criteria of performance for every Employee. Your safety and the safety of others is your responsibility as an Employee of Manitowoc Marina.

It is the responsibility of each full time Employee to have training in basic First Aid and CPR.

Any Employee who is not a good swimmer must inform the General Manager and never go out on a boat, dock or work near the bulkhead without permission of the Manager, and must wear a PFD at all times when working near the water. Non-swimmers are urged to take swimming classes.

Manitowoc Marina will regularly conduct fire drills and other safety training of all staff.

MEDICAL EMERGENCIES
Section 4

It is the policy of Manitowoc Marina to render emergency first aid to all Employees, Boat Owners and Guests, when and as is possible and reasonable for non-medically trained personnel.

The primary objectives are to stabilize the victim and reduce the risk of further harm until rescue or medical help arrives.

Employee Training

All full time Employees of Manitowoc Marina are expected to have taken both First Aid and CPR courses from any approved agency, such as the Red Cross, local hospital, Fire Department, school, community college, Scout program, etc. The Marina requires that each Employee present to management training certification at the time of employment or within 6 months of starting work. It is also recommended that each Employee renew their First Aid training every 3 years and a record of such training will be made in the employee's file.

First Aid Kits

1. First aid kits are located throughout the Marina. Identify their location and remember where to find them in an emergency.
2. The kits are marked with a highly visible sign in each location.
3. The first aid kits are of the basic type to handle large cuts and minor emergencies.

Medical Emergency Contacts

When anyone is injured or gets sick in our Marina, Employees must do the following...
1. Notify the Marina General Manager or Service Dept. Supervisor.

2. Call medical authorities for help or advice:

Use Emergency Phone Numbers listed on page 1 of this Chapter.

3. Give whatever First Aid is reasonable to help stabilize and comfort the person.
4. Wait for medical help;

Do not move the victim if unconscious or seriously hurt.

5. If a recently arrived foreign national becomes sick, alert medical authorities of their place of origin, in case there might be a contagious disease outbreak there.

PERSON OVERBOARD
Section 5

1. Be aware of distress calls from anyone falling overboard.
2. Know location and procedure for life ring use.
3. Employees are required to wear life vests when working over the side of any structure or floats.
4. In all overboard cases involving cold water or prolonged exposure, assume victim has hypothermia (heat loss from body) and handle gently and keep from losing further body heat. Medical treatment is advised.
5. In drowning cases, assume that the victim is severely hypothermic and alive. After removing the victim from the water, immediately begin CPR first aid, and continue until Rescue or Medical personnel arrive and take over. Remember, no one should be given up as dead because they look and feel dead.

FIRE PREVENTION & CONTROL
Section 6

EMERGENCY CONTINGENCY PLAN

This plan is for information only and does not indicate a requirement for employment.

The purpose of this plan is to assure a prompt, effective response to any marine emergency which relates to safety of life, property and environmental protection.

The primary consideration is for personal and public safety. In case of fire or explosion; involved persons should be removed to safety and in the process, should not endanger your own safety. In case of an accident, do not move the person unless the person is in continued danger. If a person is in the water, you should throw any flotation devices or anything that floats. Do not go into the water without some type of flotation that could support yourself and the person you are trying to help. Professional help should be called immediately.

The secondary consideration is for protection of property. In case of fire or explosion, all surrounding movable property as boats, cars, trailers should be removed from the area.

"NEVER CUT OR RELEASE A BURNING BOAT FROM THE DOCK" as it could float into other boats or property, plus it is easier to fight a fire at the dock than on the water. A burning or dangerous boat may be towed to an isolated area for the fighting of the fire. In case of an accident all property should be undisturbed until all professional department investigations are complete.

The third consideration is for environmental protection. With any fire, explosion, sinking or accident there is usually a chance of some environmental pollution. Debris, oil, and fuel will drift free of the boat which should be removed from the water when possible. The boat should be removed from the water when possible. Oil booms and absorbent rags are stored in the gas dock hut.

This plan will attempt to prepare you, the Employees, for all possibilities that may arise in our Marina. The following check lists should be posted near phones, VHF radios, emergency equipment. This should also be kept for your personal reference.

HOW TO USE A FIRE EXTINGUISHER

The name plate includes operating instructions. Study your unit. Portable extinguishers operate by squeezing the handle lever. Each time the lever opens the valve, the stored pressure will force out some of the extinguishing agent. If the lever is not released the entire contents will be discharged in as short a time as 10 seconds.

Should fire occur, grasp the extinguisher firmly and pull out locking pin. Hold the extinguisher upright, unclip the hose of swivel the horn so the nozzle is pointed toward base of the flames.

Remain low, out of the smoke and heat, and approach the fire no closer than 10 feet. Squeeze and release the lever while sweeping the agent across the base of the fire (not at flames or smoke) in a side-to-side motion.

After the initial assault, move progressively closer to the fire to enable the discharge stream or cloud to reach the furthest burning section. Keep your back toward any strong air current or wind. If the discharge stream scatters the burning material you are too close. Move back until the scattering action ceases.

Survey the area surrounding the fire as you approach the flame. Be careful to stay as far as possible from the fire's fuel source. After the fire is out, continue to check the area for several minutes for "Flashback" or small recurrences of flame. Check the rubble. Where there is smoke there can be fire again. Be sure it's out.

Clean up the area immediately after you are sure the fire is out. Fire loss can be minimized by the proper operation of the extinguisher, but dry chemical agents may corrode property salvaged from the fire, if not cleaned up soon after extinguishment. Shut off power if you suspect the fire was of electrical origin.

CAUTION: Do not discharge any extinguisher at a person's face. Keep away from children. Avoid inhaling dry chemical powders. Although not poisonous, temporarily irritation and vomiting could be caused. If this occurs, call a physician immediately. Dry chemical compounds are shown on the nameplates. Carbon Dioxide (CO_2) "snow" can inflict cold burns if it touches bare skin.

FIRE EMERGENCY RESPONSE PLANNING
Section 7

The following order of procedures is based on a boat fire being discovered by one person, but the procedures can be accomplished simultaneously by many people.

If you witness, or are notified of an emergency, the following procedures are:

1. Shut OFF the emergency fuel pump switches and pier electrical breakers.

2. Remove any persons away from the fire and out of the water.
   (Yell into the boat, and account for all persons.)

3. DIAL "911" for the local Fire Department and give the following information:
   a. *"This is (your name) at Manitowoc Marina (fuel dock, dock office, etc.) on Lake Michigan at _____"*
   b. *"We have a (approximate length and color) boat on fire at the (give location, i.e. fuel dock, pier & slip number, travel lift well, boat ramp, etc.)"*
   c. Inform them whether there are any injuries or possible severity of the injuries.
   d. Describe the class of fire (wood, electrical, propane gas, or gasoline).
   e. Describe any hazardous conditions near the fire.
   f. Describe what, if any, fire-fighting efforts are in process.

4. Call the U.S. Coast Guard at _____or on the VHF Radio on channel 16 and repeat the same information that you just gave to Fire-Rescue.

5. Call your supervisor to inform them of the incident:
   Name phone number

6. Remove all boats and movable items away from the fire area, only if safely possible.

7. Secure the burning boat to the dock, if possible. This will permit the fire to be fought from the land and sea. (If available use grapnel hook and chain to secure to dock.)
   WARNING: Burning boats often explode when flames reach fuel tanks; so stand clear.

8. If you feel qualified, use the fire extinguisher or the CO2 extinguisher on the fire. There is a large Fire Extinguisher on every pier, every 50 feet or so. (See "How To Use Your Fire Extinguisher")

If you notice a fire, do the following:

1. Contact the Fire Department (call immediately 911).

2. Make sure everyone is away from the fire and the surrounding area.

3. Contact the General Manager or Service Supervisor (if time allows)

4. Stand by to direct the Fire Department once they are on site and lead them to the incident. Have someone standby the gates to control the boaters and public as requested by the Fire Department.

5. If the fire is small and you are absolutely positive that no explosive materials are involved (gas and propane) you can try to use a fire extinguisher to put out the fire.

If the fire is on the docks, do the following (after sounding the fire alarm):

1. Secure gasoline and diesel valves.

2. Secure the water valves to the other piers that will not be involved with the firefighting operations to prevent loss of pressure from boaters using the water supply and to prevent any unnecessary damage to water lines or boats when the water supply system is energized by the Fire Department at a high water pressure.

Remember, For a Fire to Burn It Needs These 3 Things:

Fuel + Heat + Oxygen

If You Remove Any One, the Fire Will Die.

If an electrical fire breaks out, do the following:

1. Secure electrical power at the main panel.

2. Use only a "C" Rated Fire Extinguisher for electrical fires to prevent shock.

3. If you are afraid or nervous to fight a fire, don't fight it, just remember to:
   a. Call the Fire Department.
   b. Make sure everyone is far away from the dock as possible.
   c. Call the General Manager or Service Supervisor.
   d. Just direct the Fire Department to the fire.
   e. Do not jeopardize yourself.

Suggested Priorities for Fire Protection

A. Human life & Injury
Once everyone's safe, boat owner, guests, public, Marina staff - then try to protect property.

B. Neighboring Boats
If reasonably safe to staff, try to prevent fire spread to other boats and prevent further damage.

C. Boat and/or **Building on Fire**
Only if it can be done safely, try to extinguish and/or contain the fire.

D. Marina Docks & Building Structures
If reasonably safe, try to protect docks, buildings, and equipment from fire spread and damage.

E. Environment
Most fires can cause environmental pollution, some of which can be controlled, such as oil spills. When the fire is safely out, staff should do all possible to protect the environment.

Fire Emergency Response Plan

A. SOUND ALARM - This is the first step in your tactical procedure plan for all areas of the Marina. It is a process that announces and places into action your Emergency Response Plan.

B. LIFE SAFETY - This is the second step in your tactical procedure plan. The safety of your customers, and the public is at the top of your priority list.

C. Other Actions To Take - These are not placed in any particular order of importance. When they are scheduled into the plan will depend on your tactics and the specific area of the Marina that you are trying to protect.

It should be understood that several of these steps may be going on simultaneously, including:

1. Shut off fuel.
2. Shut off power to the affected area
3. Assign member to meet incoming Fire Department
4. Meet and direct fire trucks to the scene
6. Contact United States Coast Guard and advise them of the emergency
7. Contact the Marina Manager or Service Supervisor
8. Remove all boats and equipment away from the fire area
9. Secure burning boat to the dock
10. Crowd control, including managing parking lot; police role
11. Activate evacuation plan and evacuation route
12. Public information announcements, if any are necessary, are to be handled only by the General Manager.
13. Oil spill containment and clean up
14. Bring additional fire extinguishers and equipment to the scene

After The Fire Is Out

A. Notify marina's insurance company of the fire, and extent of damage. If possible, give them a call during the fire as they will often quickly come down helping to document the loss.

B. Photograph and video tape all damage, from multiple angles, during and immediately after the fire.

C. Pump water out of burned hull(s) and or remove damaged boats from water.

D. Prevent boat(s) from sinking if possible. Hook up auxiliary bilge pumps as necessary.

E. Protect against environmental damage from fuel or oil leakage. Use containment booms and absorption pads as necessary.

F. Secure all damaged boat(s), docks and other structures for insurance investigation.

G. Protect property against theft and looting.

H. Prepare damage repair/replacement estimates for insurance claims.

I. Gather written statements from your personal regarding the fire.

J. State Fire Marshall will usually visit each fire scene to formally investigate the fire cause. Be prepared to cooperate fully. Never argue or cause them problems.

GENERAL MARINA & EQUIPMENT SAFETY
Section 8

Safety Guidelines & Procedures:

"**WHEN IN DOUBT - GET HELP**" - "**SAFETY IS OUR BUSINESS**"

ALL ACCIDENTS NO MATTER HOW MINOR ARE TO BE REPORTED IMMEDIATELY TO THE SUPERVISOR

General Marina Safety

1. Only approved safety shoes shall be worn while on the job (non - skid rubber sole - good quality boat shoes)
2. Safety goggles will be worn while using power tools and servicing batteries.
3. Safety belts are to be used when working in high places where feasible - consult with your supervisor.
4. Paints, fuels, cleaners, etc., are to be used according to instructions and partially used containers of these liquids are to be stored in explosion proof containers or cabinets.
5. Docks are to be kept clear of equipment and debris. Hoses and lines are to be kept coiled and out of walkways.
6. All customers are not to climb on structures under fixed piers.
7. No swimming is allowed in the Marina.
8. Encourage boat owners to file a float plan prior to their trip.
9. No sailing is allowed within the Marina, due to lack of control and ability to operate vessels under rules of the road while under sail.
10. A monthly safety audit will be given to the Marina. This is to help all Employees recognize safety problem areas and to make your working environment as safe as possible.
11. A biweekly safety audit will be held and all Employees scheduled must attend and input is expected.
12. Be aware of customer injuries and know basic first aid and emergency phone number 683-4521 or **911**.
13. Use extreme caution when ice has formed on the docks.
14. Seat belts will be used whenever a Marina vehicle is being used. This is by all passengers, not just the driver.

All Employees should know Marina regulations and contract provisions and enforcement policies. Enforcing these guidelines will occasionally bring Employees in conflict with customers. Know the rules and enforce them tactfully and with confidence. Refer any difficulties to your supervisor. The safety of the Marina facility requires that all Employees can be reached in emergencies (i.e. storms, etc.).

Equipment Safety

Manitowoc Marina Equipment Safety Rule #1:
All equipment not meeting all requirements of the daily inspection ARE NOT to be used until the necessary repairs are made.

WARNING: Violations of this Rule #1 are grounds for immediate dismissal.

1. **Travelift**
   a. Give daily inspection prior to operation.
   b. No riding on the travelift.
   c. While the travelift is in motion, the operator will be guided by an assistant who is directing for the front of the machine.
   d. Only qualified Employees are to operate the travelift.

2. **Harbor Boat, Launch** and/or **Work Boats**
   a. Personal flotation vest (PFD) are to be immediately available or worn anytime the boat is underway.
   b. Boats are not to be operated without required U.S. Coast Guard approved equipment aboard.

c. No Employee will operate the boat without knowledge of proper use of all equipment aboard.
d. Boats will be operated according to the Nautical Rules of the Road, State and Harbor regulations.
e. Boat operator will be personally responsible for fines levied for improper boat operation and/or operating without required safety equipment.
f. Refuel all boats after use - reduce condensation.
g. No Employee will attempt an offshore search and rescue.

3. **VHF Radio Monitoring Procedures**
   a. Base Station: Scan Channel, 09, 16 and Channel 68 during Marina operating hours.
   b. Harbor Boat: Monitor channel 09 when away from the Marina.
   c. Test radios at the beginning of each days use.
   d. Log base station use as required by F.C.C.
   - Log daily operating hours.
   - Log all emergency transmissions.
   e. Respond to "Mayday" or "Pan-Pan" transmissions by:
      - Listen - Do not transmit.
      - Notify U.S. Coast Guard by telephone.
      - Answer if there has been no response from USCG or a station closer to caller.
   f. Respond to emergency radio indicator beacon (EPIRB) by notifying U.S. Coast Guard by telephone.

MARINA SECURITY
Section 9
Security Procedures for Marina Employees

1. The floating docks are OFF LIMITS to all persons except boat owners and their guest. If anyone is not associated with a vessel, then ask them to please leave the area or return to a designated area. If the person resists the request to leave the floating docks, do not argue with them, but immediately call your supervisor or the Police.

2. The Marina grounds, docks, rack area, shop area are to be patrolled before opening.

3. If any boat owner has a reported theft aboard their vessel or report of persons boarding their vessel without permission in their absence, call your supervisor or security immediately and they will complete a written report while the owner is present. Take action immediately! Notify the General Manager at once and provide him with a copy of the incident report. The Service Supervisor should be notified if the General Manager is not immediately available.

4. All personnel are required to know the Marina Safety Procedures and Marina Regulations. Be prepared to enforce regulations in a diplomatic manner.

Listed below are some areas to monitor during the working hours of the day and night.

Boats In-the-Water

1. Observe and report, call owner directly for these situations:
   a. Boats sitting unusually low in the water or listing.
   b. Radios, lights, etc., left on or running.
   c. Lines untied or boat loose from moorings.
   d. Loose rigging, sails, canvas, etc.
2. Only boat owners and guests should be on the docks.
3. Fishing allowed only in designated areas.
4. Visitors should not dock in rented spaces.

5. No boat owner should use an open fire for cooking on the docks or in a boat. If observed have the fires extinguished immediately.
6. No swimming from docks or piers, or from boats within the harbor.

Floating Docks

1. Observe ramps for broken hinges, broads or railings.
2. Observe floats on piers for unusual listing.
3. Observe locations of fire extinguishers and life rings. Notify Marina personnel of missing or damaged items.
4. Notify Marina personnel of loose cleats, damaged hose racks, power centers and rub railings.
5. Dock lines, hoses, power cords should be coiled to prevent tripping hazards.
6. Turn off water spigots. If water lines are broken or leaking, shut off water supply and notify Marina personnel.
7. During bad weather, observe floating dock joints and report unusual or excessive working.

Fixed Piers

1. Observe and report:
    a. Loose planking
    b. Railing
    c. Broken electrical fixtures
    d. Spigots left on or broken water lines at the fish cleaning station.
    e. Unusual or excessive working of pier or sea during bad weather.
2. No one is to climb on braces of pier or sea wall.

Mechanics & Storage Sheds

1. Check to see that doors are locked.
2. Check to see that storage cabinet is locked.

Fuel Dock

1. Check for fuel leaks at hose reels, dispensers or connections, both visually and odors.
2. If dispensers are "humming" pumps have been left on, turn off at electrical panel.
3. See that fuel hoses are coiled, not presenting themselves as a tripping hazard.
4. All doors and windows are secured and locked.

Marina Lights

1. Observe all Marina lights and leave list of ones burnt out.
2. Be especially alert to the red and green lights at the channel entrance going out.

Electrical Guidelines

1. Prior to plugging in any shore power cord into power centers, you must turn the breaker to the "off" position. After shore power cord is connected to the vessel and power center, turn breaker "on". Be aware of unsafe "pigtails" or "splitters" used by boaters.
2. Ground fault adaptors are to be used and tested when using power tools on docks and in wet areas.
3. Know where the main electrical panels are located and the correct breaker locations to turn off power in problem areas.

Administration, Service & Storage Buildings

1. Check all entrance doors and secure them.
2. All lights should be off.

3. Make sure you have your radio on in case someone is trying to reach you.
4. Make sure all windows are secured and locked.
5. Check bathrooms, if unclean conditions exist - clean them. If the rooms are out of order, secure the proper portion of the facility until repaired.
6. Areas around buildings are in neat and orderly appearance.
7. Ice storage bins are locked.

Vehicles

1. All keys are removed and doors are locked.
2. Make sure people are not entering or playing around the vehicle.

FUELING BOATS
Section 10

Boat Fueling Procedure

1. **Before Fueling**
   a. Secure boat firmly to dock.
   b. Shut off all electricity, open flames & heat sources.
   c. Check bilges for fuel vapors; shut off vent blowers.
   d. Locate fuel tank vent on hull and place catch bottle over it.
   e. Allow only one person to remain on the boat during fueling -- the one doing the pumping.
   f. Ask customer 2-3 times if they want diesel or gasoline - it is surprising how many boaters get confused and use the wrong fuel, a costly mistake.
   g. Hand the customer the fuel hose nozzle for fueling the boat; watch to make sure that they use the correct fuel deck fitting (not the fishing rod holder or water tank).

2. **During Fueling**
   a. "No Smoking" rule is to be observed & enforced at all times.
   Do not hesitate to tell customers to extinguish all smoking materials.
   b. Maintain nozzle contact with fill pipe to eliminate static electricity sparks.
   c. Wipe up or contain spills immediately. (See oil spill procedures)
   d. Avoid overfilling - to keep fuel from expanding out air vent in hot weather.

3. **After Fueling, But Before Starting Boat Engine**
   a. Inspect bilges for leakage or fuel odors.
   b. Turn on boat bilge blowers for several minutes before starting engine. Ventilate until odors are gone.
   c. "No Smoking" rule is to be observed & enforced at all times.
   d. Retract fuel hose & hang nozzle on hook after use.
   e. Identify fuel shut off valves for emergencies.
   f. Water hose to be kept coiled when not in use in fuel areas to prevent tripping.

FUEL & OIL SPILLS
Section 11

1. Contact General Manager or Service Supervisor immediately when a spill is discovered. WARNING: There is a large fine if even minor spills aren't reported.

2. Use oil absorbent pads and pillows, NEVER USE DETERGENTS to contain and remove a spill.

3. Locate cause of spill and secure against spread.

4. Gas spillage - Rope area off, get fire extinguisher and proceed with clean-up.

If a gasoline or diesel line breaks to the fuel pier, or in case of a **massive sheen** of oil, gasoline or diesel showing on the surface of the water, do the following:

1. Secure all valves to the fuel lines and tanks.
2. Secure all electricity.
3. Contact the Marina Office.
4. Contact the National Response Center.
4. Contact the Fire Department.
5. Contact the United States Coast Guard.
6. Contact the Wisconsin Department of Natural Resources.

If the spill is large:

1. Make sure everyone is off the docks.
2. Do not allow boats to enter the area.
3. Do not allow boats to start up.
4. NO SMOKING DURING ANY SPILL and anywhere where fuel can be smelled.
5. Stand by to direct the Fire Department and assist as needed.

If gasoline is spilled, break out fire hose to wash away from docks and boats. If diesel or oil is spilled, do not wash away. A containment boom should be set up. Oil and diesel will not dissipate the way gasoline will.

In case of a small gasoline or diesel spill from overfilling a fuel tank on a boat happens, use absorbent pads to remove as much fuel as possible. Then spray water on dock, boat and on the water to help gasoline evaporate or diesel to dissipate.

WARNING: Do not spray soap or other disbursement on the spill. This is environmentally illegal and any Employee doing this will be held liable for their actions and can be dismissed from employment.

Sinking or Sunken Boat

Sunken boats commonly result in oil pollution when fuel bubbles up from the submerged fuel tank (often through the air vent).

1. Know location and proper use of emergency pumps.
2. If boat is sunk, place oil spill containment boom around the boat since fuel will usually bubble up to the surface resulting in an oil spill.
3. Inform boat owner of proper procedure to remove boat.

OIL SPILL EMERGENCY PHONE NUMBERS

For Gas, Diesel, Oil or Other Spills:

All Safety & Security Emergencies	911
After Hours, General Manager	
After Hours, Service Supervisor	
After Hours, Store Manager	
Manitowoc Fire Department	
Manitowoc Police Department	
Two Rivers Coast Guard Station	
National Response Center	800-424-8802
WI DNR Marine Warden	
Safety-Kleen Environmental Services	

When calling one of the above agencies, provide the following information:

1. Type of product spilled: Gas, Diesel, Oil or Unknown
2. Source of Spill - Boater, Marina Fuel Lines, or Other
3. Quantity spilled ___ quarts - ___ gallons
4. Wind direction and strength
5. What actions are presently being taken by Marina staff to prevent spill from spreading out.
6. Is the spill within a confined area or not?

All spills must be logged in on Incident Report Sheet:

1. Type of product spilled
2. Quantity
3. Source of spill, if known
4. Location of spill
5. Wind direction
6. What actions were taken.

HAZARD COMMUNICATION STANDARD PROGRAM
Section 12

"Employee's Right-To-Know Law"
Hazard Communication Standard Written Program

General

The purpose of this instruction is to ensure that the Manitowoc Marina is in compliance with the OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Manitowoc Marina Safety Coordinator: *name*, General Manager

The Safety Coordinator has the overall responsibility for coordination of our Hazard Communication program.

In general, each Employee in the facility will be apprised of the substance of the HCS, the hazardous properties of chemicals they work with, and measures to take to protect themselves from these chemicals.

List of Hazardous Chemicals

The Safety Coordinator or designee will maintain a list of all hazardous chemicals used by the facility, and update the list as necessary. The hazardous chemicals list will be updated upon receipt of hazardous chemicals at the facility. The master list of hazardous chemicals for the facility is maintained at:

The office of the Marina Safety Coordinator, *name*, General Manager

Material Safety Data Sheets

The Safety Coordinator or designee will maintain a Material Safety Data Sheet (MSDS) library on every substance on the list of hazardous chemicals used by the facility. The MSDS will consist of a fully completed OSHA Form 174 or equivalent. The department manager of supervisor will ensure that each work department maintains an MSDS for hazardous chemicals used in that department. MSDS's will be readily available to all Employees.

The Service Department Supervisors are responsible for acquiring and updating MSDS's. The Safety Coordinator will review each MSDS for accuracy and completeness. All new procurements for the facility must be cleared by the Safety Coordinator. Whenever possible, the least hazardous substance will be procured. MSDS's that meet the requirements of the HCS must be received at the facility prior to the first shipment of a potentially hazardous chemical purchased from a vendor.

Labels & Other Forms of Warning

The Department Managers or their designees are responsible for ensuring that all hazardous chemicals in the facility are properly labeled. Labels should list at least the identity of the chemical substance and appropriate hazard warnings. The Department Managers will refer to the corresponding MSDS to verify label information. Immediate-use containers, small containers into which materials are drained for use on that shift by the Employees drawing the material, do not require labeling.

Existing labels on any containers of hazardous chemicals shall not be removed or defaced unless that container is immediately marked with the appropriate required information.

Managers will check on a monthly basis to ensure that all containers in the facility are labeled and that the labels are up to date.

Training

Each Employee who works with or is potentially exposed to hazardous chemicals will receive initial training on the HCS and the safe use of those hazardous chemicals. Additional training will be provided for Employees when a new hazard is introduced into their work areas. Hazardous chemical training is conducted by the Safety Coordinator, Personnel Coordinator, and Department Managers or their designee.

The training will emphasize these elements:

1. A summary of the Standard and this written program.
2. Hazardous chemical properties including methods that can be used to detect the presence or release of hazardous chemicals.
3. Physical and health hazards associated with potential exposure to workplace chemicals.
4. Procedures to protect against hazards, e.g., personal protective equipment, work practices and emergency procedures.
5. Hazardous chemical spill and leak procedures.
6. Location of MSDS's, how to understand their content, and how Employees may obtain and use appropriate hazard information.

The Safety Coordinator will maintain and monitor records of Employee training and determine staff training needs.

Contractor's Employees

Any person engaging an outside contractor will advise the contractor of any chemical hazards which may be encountered in the normal course of their work on the premises. The contractor will be required to submit MSDS's or other appropriate notification of any chemical hazards their work may present to Manitowoc Marina Employees before such substances are brought on site.

Non-Routine Tasks

Supervisors contemplating a non-routine task, or assignment of an Employee to a new or non-routine job, will ensure that Employees are informed of chemical hazards associated with the performance of these tasks and of appropriate protective measures. This may be accomplished by a meeting of the Department Manager or supervisor with affected Employees to discuss any new chemical hazards and MSDS's before such work is begun.

Appendix III: Storm Water Pollution Prevention Plan

The following template from the Wisconsin Department of Natural Resources (WDNR) is used to prepare industrial Stormwater Pollution Prevention Plans. Marinas, while regulated for stormwater runoff like other businesses, have different circumstances than other types of facilities. Notes have been added to this template to assist in adopting it to stormwater runoff from marinas. This template is also available from the WDNR Web site: http://dnr.wi.gov/runoff/pdf/stormwater/sampleSWPPP.pdf.

Sample SWPPP

Note: A WDNR stormwater permit does not require use of this particular Storm Water Pollution Prevention Plan (SWPPP). This SWPPP is provided solely for voluntary use by industrial storm water permittees.

TABLE OF CONTENTS

GENERAL FACILITY INFORMATION

Name of Facility: _____

Facility Address: _____

Facility Contact: _____

Name: _____

Title: _____

Telephone: _____

Mailing Address: _____

_____

Owner: _____

Operator: _____
(If different from Owner)

Standard Industrial classification (SIC) Code: 4493

Permit Information:

Facility Permit Name: _____

Permit Number: _____

Initial Date of Coverage: _____

Number of Stormwater Outfalls: _____

Receiving Waters: _____

Emergency Contact (preferably on-site):

Name: _____

Telephone: _____

1.0 OVERVIEW

1.1 INTRODUCTION

This stormwater pollution prevention plan (SWPPP) covers the operations at ***insert facility name***. It has been developed as required under Part III of Wisconsin's Pollutant Discharge Elimination System (WPDES) general permit for stormwater discharges and in accordance with good engineering practices. This SWPPP describes this facility and its operations, identifies potential sources of stormwater pollution at the facility, recommends appropriate best management practices (BMPs) or pollution control measures to reduce the discharge of pollutants in stormwater runoff, and provides for periodic review of this SWPPP.

1.2 OBJECTIVES

The primary goal of the stormwater permit program is to improve the quality of surface waters by reducing the amount of pollutants potentially contained in the stormwater runoff. Industrial facilities subject to industrial stormwater WPDES permit (i.e., Tier 1, Tier 2, scrap recycling or vehicle parts dismantling permits) must prepare and implement a SWPPP for their facility.

This SWPPP will:

1. identify sources of stormwater and non-stormwater contamination to the stormwater drainage system;

2. identify and prescribe appropriate "source area control" type best management practices designed to prevent stormwater contamination from occurring;

3. identify and prescribe "stormwater treatment" type best management practices to reduce pollutants in contaminated stormwater prior to discharge;

4. prescribe actions needed either to bring non-stormwater discharges under WPDES permit or to remove these discharges from the storm drainage system;

5. prescribe an implementation schedule so as to ensure that the stormwater management actions prescribed in the Stormwater Pollution Prevention Plan are carried out and evaluated on a regular basis.

2.0 STORMWATER POLLUTION PREVENTION TEAM

The stormwater pollution prevention team is responsible for developing, implementing, maintaining, and revising this SWPPP. The members of the team are familiar with the management and operations of ***insert facility name***.

Identify by job title the person in charge of all aspects of SWPPP development and implementation. The member(s) of the team and their responsibilities (i.e., implementing, maintaining, record keeping, submitting reports, conducting inspections, employee training, conducting the annual compliance evaluation, testing for non-stormwater discharges, signing the required certifications) are as follows:

Name & Title	Responsibility

3.0 POTENTIAL SOURCES OF POLLUTANTS

3.1 SITE MAP

Figure 1 (attached) presents a site map of the facility showing the following features as required by the permit:

- the facility property boundaries;
- a depiction of the storm drainage collection and disposal system, including all known surface and subsurface conveyances, with the conveyances named;
- any secondary or other containment structures;
- the location of all outfalls, including outfalls recognized as permitted outfalls under another WPDES permit, numbered for reference, that discharge channelized flow to surface water, groundwater, or wetlands;
- the drainage area boundary for each stormwater outfall;
- the surface area in acres draining to each outfall, including the percentage that is impervious, such as paved, roofed, or highly compacted soil, and the percentage that is pervious, such as grassy areas and woods;
- existing structural stormwater controls;
- the name and location of receiving waters;
- and the location of activities and materials that have the potential to contaminate stormwater shall also be depicted on the drainage base map.

3.2 SUMMARY OF SAMPLING DATA

The following is a summary of the chemical outfall sampling data available for ***insert facility name.***

Note: Not all facilities will have sampling data available. If there is data available it is to be included in the SWPPP. If there is no data available, please state that in this section.

3.3 INVENTORY OF POTENTIAL SOURCES OF CONTAMINATION

The following have been identified as potential sources of stormwater contamination.

Select and expand as appropriate. Include the ways in which these materials might be exposed to the stormwater runoff. And identify the outfalls from which the materials may be discharged if a release should occur.

- outdoor manufacturing areas;
- rooftops contaminated by industrial activity or a pollution control device;
- areas of significant soil erosion;
- industrial plant yards;
- storage and maintenance areas for material handling equipment;
- immediate access roads and rail lines;
- material handling sites (storage loading, unloading, transportation, or, conveyance of any raw material, finished product, intermediate product, by-product or waste;
- shipping and receiving areas;

- manufacturing buildings;
- residual treatment, storage, and disposal sites;
- storage areas (including tank farms) for raw products materials, finished and intermediate;
- refuse sites;
- disposal or application of wastewater;
- areas containing residual pollutants from past industrial activity, spills and leaks;
- vehicle maintenance and cleaning areas;
- any other areas capable of contaminating stormwater runoff**.**

For marinas, typical areas also include:

- Boat maintenance areas
- Boat storage area
- Waste storage areas
- Fueling areas
- Parking lots
- Septage pumping areas

4.0 OTHER PLANS INCORPORATED BY REFERENCE

The following plan(s) is/are incorporated into the SWPPP by reference.

Examples include: Preparedness, Prevention and Contingency Plan (40 Code of Federal Regulations [CFR] 264 and 256), Spill Control and Countermeasures Requirement (40 CFR 112), National Pollutant Discharge Elimination System (NPDES) Toxic Organic Management Plan (40 CFR 413, 433, 469) and Occupational Safety and Health Administration (OSHA) Emergency Action Plan (29 CFR 1910), Preventative Maintenance Plan

5.0 BEST MANAGEMENT PRACTICES

Stormwater management controls, or best management practices (BMPs), will be implemented to reduce the amount of pollutants in stormwater discharged from ***insert facility name.***

5.1 SOURCE AREA CONTROL

To the maximum extent practicable, and to the extent it is cost effective, the use of source area control BMPs designed to prevent stormwater from becoming contaminated will be used. Source area control BMPs that are either proposed or in place are indicated on the attached drainage base map described in subsection (3.1).

Erosion Control Measures
Areas prone to soil erosion shall be protected, and the soil kept out of the stormwater discharge.

Note: Erosion control measures to be considered are reconstruction of slopes, seeding bare areas, diversion of runoff, paving traveled areas, trapping sediment, protecting inlets, and preventing tracking.

Good Housekeeping

Good housekeeping practices are designed to maintain a clean and orderly work environment. This will reduce the potential for significant materials to come in contact with stormwater.

The following practices are included in our good housekeeping routine. (Examples: keeping the pump area clean, keeping an accurate inventory, sweeping paved areas and floors, picking up repair facilities, etc.)

Area/Equipment	Tasks	Frequency

Preventive Maintenance

Preventive Maintenance involves the regular inspection, testing, and cleaning of facility equipment and operational systems. These inspections will help to uncover conditions that might lead to a release of materials. Thus, allowing for maintenance to prevent such a release.

The following equipment/activities will be included in the preventive maintenance program. (Examples: fuel pumps, storage tanks for waste fluids, all structural controls, etc.)

Equipment	Tasks	Frequency

Quarterly Visual Comprehensive Inspections

The permit requires a quarterly inspection of the stormwater runoff. These inspections must be conducted during a runoff event. Records of the inspections must be kept on file with the SWPPP. The water must be checked for physical properties such as odor, color, turbidity, suspended solids, or foam.

Spill Prevention and Response Procedures

Spills and leaks together are the largest industrial source of stormwater pollution. Thus, this SWPPP specifies material handling procedures and storage requirements for significant materials. Equipment and procedures necessary for cleaning up spills and preventing the spilled materials from being discharged have also been identified. All employees have been made aware of the proper procedures.

The following procedures have been developed for spill response for our facility.
(Examples of areas to include: pumping station, maintenance and repair areas, wash areas, etc.)

Area	Materials Present	Response Plan Location

Employee Training

Note: Employee training should be a major component in ensuring the success of the facility's SWPPP. The more knowledgeable all employees are about the facility's SWPPP and what is expected of them, the greater the chance that the plan will be successful.

The following is a description of the employee training programs to be implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. (Examples: good housekeeping practices, spill prevention and response procedures, waste minimization practices, informing customers of facility policies, etc.)

Topic	Employees Included	Frequency

Bulk Storage

Bulk storage piles will be managed following the best management practices described in WDNR publication "Storage Pile Best Management Practices" WT-468-96.

5.2 RESIDUAL POLLUTANTS

After the implementation of the non-structural controls, the following significant materials are expected to be present in the stormwater discharge. These materials will be addressed through the use of structural controls. The potential for the following chemicals to be present must be evaluated.

Any pollutant that has an effluent limit in any discharge permit issued to this facility.

Any pollutant contained in a categorical effluent limit for this facility.

Any SARA 313 chemicals on the property to contaminate stormwater must be evaluated. The listing of SARA 313 chemicals may be found at http://www.epa.gov/tri/trichemicals/reg_requirements/list_of_lists_revised_7_26_2011.pdf

Any toxic or hazardous pollutant from present or past activity at the site which could be in contact with precipitation or storm water runoff and thus be discharged to the waters of the State and is not regulated by any other environmental program.

Oil and Grease, pH, total suspended solids, 5 day Biological oxygen demand, and chemical oxygen demand.

After the implementation of non-structural controls the following materials are expected to still be present in the stormwater being discharged from the facility. (If there will be no significant materials present after the implementation of nonstructural controls, state that in this section.)

Material	Location	Outfall	Planned Control Measure

5.3 STORMWATER TREATMENT BEST MANAGEMENT PRACTICES

Structural control measures may be necessary to control pollutants that are still present in the stormwater after the non-structural controls have been implemented. These types of controls are physical features that control and prevent storm water pollution. They can range from preventive measures to collection structures to treatment systems. Structural controls will require construction of a physical feature or barrier. (If no structural control measures are needed at the facility, state that in this section).

Preventive Measures
Preventive measures are controls that are intended to prevent the exposure of storm water to contaminates.

The following preventive measures have been chosen for this facility.
(Examples: signs and labels, safety posts, fences, a security system, coverings over areas of concern, etc.)

Area	Material	Control Measure

Diversions
Diversion practices are structures (including grading and paving) that are used to divert stormwater away from high-risk areas and prevent contaminants from mixing with the runoff, or to channel contaminated stormwater to a treatment facility or containment area.

The following areas are to be protected through the use of diversion structures.
(Examples: storage areas, processing areas, past spills, etc.)

Area	Material	Control Measure

Containment
Containment areas are structures designed to hold pollutants or contaminated stormwater to prevent it from being discharged to surface waters. These structures can range from drip pans to large containment areas.

Containment structures will be/have been installed in the following areas.
(Examples: containment around waste fluid storage areas, drip pans under valves and pipe connections, curbing around dismantling areas or parts storage areas, etc.)

Area	Material	Control Measure

Other Controls
There are other control measures that can be used that may not fit into one of the previously mentioned categories. The use of such controls is encouraged.

The following additional controls have to be used at the facility. (Examples: sumps, oil/water separators, sand filters, vegetative filters, basins [collection, retention, detention], reduce, reuse, and recycle materials, etc.)

Area	Material	Control Measure

5.4 FACILITY MONITORING

Monitoring includes site inspections as well as the collection and analysis of stormwater samples. The purpose of monitoring is to a) evaluate stormwater outfalls for the presence of non-stormwater discharges and b) evaluate the effectiveness of the company's pollution prevention activities in controlling contamination of stormwater discharges. Monitoring must include:

NON-STORMWATER DISCHARGES
All stormwater outfalls shall be evaluated for non-stormwater contributions to the storm drainage system for the duration of this permit. Any monitoring shall be representative of non-stormwater discharges from the facility. Any unauthorized stormwater discharges must be eliminated, or covered under another WPDES permit. The following is a list of non-stormwater discharges or flows that are not considered illicit (unless identified as a significant source of contamination).

water line flushing, landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, de-chlorinated swimming pool water, street wash water, and fire fighting.

1. Evaluations shall take place during dry periods, and may include either end-of-pipe screening or detailed testing of the storm sewer collection system.

2. Either of the following monitoring procedures is acceptable:

    a. A detailed testing of the storm sewer collection system may be performed. Acceptable testing methods include dye testing, smoke testing, or video camera observation. A retest shall be done every five years or a lesser period as deemed necessary.

b. End-of-pipe screening shall consist of visual observations made at least twice per year at each outfall of the storm sewer collection system. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-stormwater discharge shall be recorded;

The following table summarizes the evaluation results.

Date	**Outfall**	**Method**	**Evaluator**	**Observations** (are there any non-stormwater discharges? Authorized or unauthorized?)	**Date Corrected**

If outfalls cannot be evaluated for non-stormwater discharges *Identify by job title the authorized representative* shall sign a statement certifying an inability to comply with this requirement, and include a copy of the statement in the SWPPP. In this case, the SWPPP shall be submitted to the department.

ANNUAL FACILITY SITE COMPLIANCE INSPECTION

The ***insert position description*** shall make an annual inspection to evaluate the effectiveness of the SWPPP. The inspection shall be adequate to verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the best management practices prescribed in the SWPPP are being implemented, properly operated and adequately maintained. Information reported shall include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP.

Quarterly Visual Monitoring

The ***insert position description*** shall perform and document quarterly visual inspections of stormwater discharge quality at each stormwater discharge outfall. Inspections shall be conducted within the first 30 minutes of discharge or as soon thereafter as practical, but not exceeding 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of stormwater pollution. Information reported shall include the inspection date, inspection personnel, visual quality of the stormwater discharge, and probable sources of any observed stormwater contamination.

Annual Chemical Stormwater Sampling *(note this is for tier 1, scrap recycling and vehicle parts dismantling permit facilities only)*

Within 24 months of the effective date of coverage under the stormwater general permit, we shall perform annual chemical stormwater sampling at each outfall for those residual pollutants listed in Section 5.2 as required under Part III B (2)(g) of the permit. Chemical monitoring may be discontinued after submitting the second annual facility site compliance inspection report. The following are specific requirements for chemical stormwater monitoring:

1. Stormwater samples shall be collected during the period of March through November from rainfall events that produce greater than 0.1 inch of rainfall and occurs at least 72 hours after a previous rainfall of 0.1 inch or greater.

2. Stormwater samples shall be representative of either:

    a. The "first flush" of stormwater runoff from the outfall. Composite samples are required for all pollutants except those for which analytic techniques require grab samples. The composite sample shall be collected during the first 30 minutes of runoff. At least three separate samples shall be collected for compositing, and the collection of samples should be evenly spaced throughout the sampling period, or

    b. The stormwater discharged from a detention pond that has greater than a 24-hour holding time for a representative storm. A grab sample is required for all pollutants. The grab sample shall be representative of the stormwater discharge from the pond outfall.

3. Monitoring samples shall be representative of the volume and nature of the monitored discharge. Analytic testing shall be in conformance with ch. NR 219, Wis. Adm. Code, https://docs.legis.wisconsin.gov/code/admin_code/nr/219 unless an alternate procedure is approved by the department prior to the initiation of sampling.

4. For each stormwater measurement or sample taken, the sampler shall record and submit the following information to the WDNR. The information that shall be included in the annual facility site compliance inspection report for the respective year must include:

    a. The date, exact place, method, and time of sampling or measurements;
    b. The individual who performed the sampling or measurements;
    c. The date the analysis was performed;
    d. The individual and laboratory that performed the analysis;
    e. The analytical techniques or methods used;
    f. The results of the analysis;
    g. The estimated duration of the rainfall event, in hours, and the estimated total amount of precipitation falling during the rainfall event, in inches.

5. Monitoring Waivers. The department may waive specific monitoring requirements for the following reasons:

    a. ***Insert Company name*** documents that either an employee could not reasonably be present at the facility at the time of the snowmelt or runoff event, or that attempts to meet the monitoring requirement would endanger employee safety or well-being.

    b. ***Insert Company name*** documents there were no snowmelt or runoff events large enough to conduct a quarterly visual inspection at an outfall.

5.5 IMPLEMENTATION SCHEDULE

This SWPPP becomes effective as of ***insert date.*** The non-structural controls will be implemented by ***insert date***. Structural controls will be in place by ***insert date***.

6.0 RECORD KEEPING AND REPORTING

All reports and records pertaining to the permit coverage under this general permit shall be retained for the later of five years beyond the date of the permit cover letter or for a minimum of three years. The forms are to be kept on site and shall be made available to the WDNR upon request. In the case of facilities that discharge stormwater to a municipal separate storm sewer system, the records must also be made available to the operator of the municipal system.

A current copy of the Stormwater Pollution Prevention Plan Summary must be sent to the WDNR. For tier 1 facilities the first two annual inspections and two annual chemical sampling results must also be sent to the WDNR.

Quarterly Visual Inspection Fact Sheet
Annual Facility Site Compliance Inspection Report
Stormwater Pollution Prevention Plan Summary
Stormwater Chemical Analysis Report Form

7.0 CERTIFICATION OF THE SWPPP

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for providing false information, including the possibility of fine and imprisonment. In addition, I certify under penalty of law that, based upon inquiry of persons directly under my supervision, to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the stormwater permit for the development and implementation of a Stormwater Pollution Prevention Plan and that the plan will be complied with."

_____
(Signature of Plan Preparer)

_____ _____
(Printed Name) (Date)

_____ _____
(Signature of Authorized Representative) (Date)

_____ _____
(Printed Name) (Title)