

Chapter 5. Marinas and Recreational Boating

5.1. Introduction

Lake Michigan provides Illinois residents with public and industrial water supply, shipping channels, and various aesthetic and recreation amenities, including a boating and fishing industry. Thirty-two marinas are in Illinois' coastal zone, with over 9,300 slips (Table 5-1 and Figure 5-1).

Nonpoint source pollution from marinas and small boat harbors can impair water quality in the coastal zone. Cleaning products and toxic chemicals used in boat maintenance can pollute waterways when they are washed into the water. Improper discharges of bilge water, wastewater, cleaning products, winterizing chemicals, fuels and lubricants from boats likewise impact water quality. The effect of runoff from a single parking lot or building on a water body may seem insignificant, but when multiplied, water quality can suffer. Mismanaged, old or poorly designed marinas or uninformed boat owners can negatively affect coastal water quality. Improved control of nonpoint pollution from marinas and boats will improve and maintain the quality of Illinois' coastal waters.

Table 5-1 Marinas in Illinois' Coastal Zone

Name	City	Number of Slips
31st Street Harbor	Chicago	1013
59th Street Harbor	Chicago	125
A1 Millennium Marina	Chicago	24
Belmont Harbor	Chicago	733
Burnham Harbor	Chicago	1042
Calumet Yacht Club	Chicago	80
Canal Street Marina	Chicago	13
Chicago's Finest Marina	Chicago	26
Croissant Marina	Chicago	54
Crowley's Yacht Yard	Chicago	15
Diversey Harbor	Chicago	693
DuSable Harbor	Chicago	415
Fay's Point Marina	Blue Island	88
Forest Park Beach	Lake Forest	0
Great Lakes Base Marina	Great Lakes	144
Jackson Park Inner Harbor	Chicago	149
Jackson Park Outer Harbor	Chicago	130
Marina City Marina	Chicago	6
Marine Services	Dolton	126
Monroe Harbor	Chicago	773
Montrose Harbor	Chicago	679
North Point Marina	Winthrop Harbor	1517
Park Avenue Boating Facility	Highland Park	0
Pier 11 Marina	Chicago	80
River South Marina	Chicago	12
Riverdale Marina	Riverdale	95
Skipper Bud's River City Marina	Chicago	20
Sunset Bay Marina	Chicago	62
Waukegan Harbor	Waukegan	856
William Tillman Maritime Academy	Chicago	48
Wilmette Harbor	Wilmette	258
Windjammer Enterprises	Chicago	30

5.2. Sources of Nonpoint Pollution from Marinas and Recreational Boating

There are a myriad of potential sources of nonpoint pollution from marinas and boats, many of which may be a direct result of planning and design. Many marinas are older and were developed without the information we have available today on how siting and design can be optimized to prevent and manage nonpoint source pollution. Some marinas can allow pollutants to accumulate to unacceptable levels in the water because of poor circulation and lack of flushing. Resuspension of sediments due to boat traffic in channels with inadequate depth or erosion of shores can adversely affect vegetation beds, spawning habitats or other aquatic resources. Construction and expansion of marinas can affect the shoreline, resulting in erosion problems and redeposition of sediment in undesirable areas of the marina.

Operation and maintenance of marinas can also impact water quality and aquatic habitats. Principal sources of nonpoint pollution at marinas are those reviewed in the Illinois Clean Marina Guidebook (IDNR 2013):

- Stormwater
- Vessel Maintenance and Repair
- Petroleum
- Sewage Handling
- Waste Containment and Disposal

5.2.1 Marina Maintenance and Operation

Marina operating procedures and management policies may affect the quality of runoff from the marina. Roads and parking areas may convey stormwater directly into adjacent waterways. Dredging may resuspend sediments and any associated pollutants such as metals, hydrocarbons, and synthetic organic chemicals. Hazardous chemicals may leach into the water from piers and other similar structures.

5.2.2 Marina Stormwater

Stormwater runoff carries solids, nutrients, oxygen-demanding materials, hydrocarbons, and other materials that impair water quality. Impaired water quality in marinas and other nearshore areas negatively impacts human recreation and aquatic life.

Hard surfaces like buildings, roofs, parking lots, driveways, and roads prevent rain water from infiltrating the ground. The increased runoff from such areas is transported more rapidly and has greater volume than runoff from undeveloped areas. It also transports pollutants from these developed areas. This heavier runoff carrying pollutants can severely degrade receiving water bodies and habitats.

5.2.3 Vessel Maintenance and Repair

Vessel maintenance activities also have the potential to introduce pollutants into the environment. Sanding, blasting, and pressure washing can produce heavy metals, most notably copper and tin. Paints, solvents, thinners, and brush cleaners are generally hazardous, and if released into the aquatic environment, they may harm aquatic life and water quality. Similarly, oil and grease from maintenance

areas degrade water quality and harm aquatic life. Some cleaning products meant for use in boat shops contain caustic, toxic, or corrosive elements. They may also contain phosphates (a nutrient), which can cause algal blooms and degrade habitat quality.

5.2.4 Petroleum

Most marinas have fueling facilities. Petroleum in or on the water is harmful, and, in some cases, fatal to aquatic life. Petroleum products typically contain a wide range of volatile organic compounds. For example, gasoline contains benzene and other aromatic hydrocarbons, alkanes, alkenes, and hundreds of organic compounds. Motor oil contains many of these as well. Both contain traces of zinc, sulfur, and phosphorus. Sources of petroleum products in marinas include maintenance areas, fueling docks, individual boats, and potentially vehicle parking lots.

5.2.5 Sewage Handling

Marinas commonly have pump-out stations for bilge and sanitary wastes. Direct pump-out to waterways is illegal and creates water quality and public health concerns. The nutrients in sewage contribute to excess algal growth. In some cases, the decomposition of raw sewage may result in oxygen deficiency and a fish kill. Raw sewage contains pathogens that are a threat to swimmers and others coming into direct contact with the water.

5.2.6 Waste Containment and Disposal

Marinas also generate solid waste that could threaten human or ecological health. Solid waste must be managed at marinas, or it may be blown or washed into the waterway. Solid waste that washes up on shore impacts aesthetic value and may be costly to remove.

A wide variety of debris and litter is generated by the numerous activities that occur at marinas. Paper towels, cups, plastic bags, bottles and cans, fish netting, fishing line, discarded oil filters, discarded rags, debris from sanding or pressure washing, pet droppings, and other forms of trash all find their way into marina waters if not disposed of properly. These wastes are dangers to aquatic and semi-aquatic animals as well as people visiting the marinas and nearby coasts. Animals may become entangled or accidentally ingest debris; humans may accidentally step on discarded items and injure themselves. Trash and debris are also unnatural and unsightly.

Hazardous waste, materials that are corrosive, reactive, toxic, or ignitable, may be generated at marinas through vessel maintenance. Hazardous materials pose a significant threat to public and environmental health. Proper storage, disposal, and recycling of these materials reduce the threat of harmful chemicals.

5.3. Management Measures for Marinas and Recreational Boating Sources

The following management measures are designed to protect Illinois' coastal waters from nonpoint pollution from marina construction, operation and maintenance, and from recreational boating. Some management measures are intended to guide siting, design and other planning phases, while others focus on marina operations. This section includes 15 management measures organized as presented in USEPA's guidance documents:

1. (5.3.1) Marina Flushing Management Measure
2. (5.3.2) Water Quality Assessment Management Measure
3. (5.3.3) Habitat Assessment Management Measure
4. (5.3.4) Shoreline and Bank Stabilization Management Measure
5. (5.3.5) Stormwater Runoff Management Measure
6. (5.3.6) Fueling Station Design Management Measure
7. (5.3.7) Sewage Facilities Management Measure
8. (5.3.8) Solid Waste Management Measure
9. (5.3.9) Fish Waste Management Measure
10. (5.3.10) Liquid Material Management Measure
11. (5.3.11) Petroleum Control Management Measure
12. (5.3.12) Boat Cleaning Management Measure
13. (5.3.13) Public Education and Outreach Management Measure
14. (5.3.14) Maintenance of Sewage Facilities Management Measure
15. (5.3.15) Boat Operation Management Measure

5.3.1 Marina Flushing Management Measure

The purpose of this management measure is to site and design new or expanded marinas so that currents will aid in flushing of the site or renew its water regularly.

Many factors affect marina hydrodynamics and water quality, including water circulation, flushing, and bottom and slope erosional stability. Siting and design are also among the most significant factors affecting a marina's potential for water quality impacts. Selection of a marina site that has favorable hydrographic characteristics can reduce potential impacts. The orientations of the marina basin and any ports (subsurface openings or 'windows'), in relation to prevailing lake currents and winds, control internal circulation and flushing, and play important roles in the distribution and dilution of potential contaminants in a marina. Design should provide for proper boat capacity, services, and access, while minimizing adverse environmental effects and development costs. Marina siting and design should be done to ensure that marinas and their associated structures do not cause direct or indirect adverse water quality impacts or endanger wildlife and its habitat both during and following marina construction.

In Lake Michigan, wind is the principal driver of water currents, producing cells that have a flushing effect within a marina. Several hours of consistent wind are required to create currents sufficient to flush a marina basin. In many situations wind-driven currents will provide adequate flushing, but this flushing can be aided by consideration of the orientation of the entrance channel or by locating ports in marina walls or breakwaters.

Additional details and guidance for marina siting and design management measures can be reviewed in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas. It is intended to promote marina design that improves water flow and circulation.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for the Marina flushing management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **Fish and Wildlife Coordination Act (16 USC 661)** requires a USFWS review of potential effects on fish and wildlife from proposed water resource development projects. The act requires that fish and wildlife resources receive consideration equal to other project features. In addition, it also requires federal agencies that construct, license, or permit water resource development projects, such as USACE, to first consult with USFWS IDNR, IEPA, and local agencies to mitigate impacts on fish and wildlife.

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (**35 IAC 309**). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate

water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit, grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

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

The **River and Harbors Act (Navigable Waters, 33 USC 403)** governs the use of public waters and gives IDNR the authority to regulate construction activities in state waterways. As part of this authority, **17 IAC 3700-3708** require marinas to obtain a permit from IDNR for any construction project in a public body of water. Permits are usually required for individual projects, although some common construction activities are covered under statewide and regional permits. Work that meets all the specified limits of a statewide or regional permit is automatically approved. Marina projects that may require permits include dredging, control of aquatic nuisance species, placement of docks/piers, bank stabilization, and building of marina breakwater structures. This review ensures that projects are not going to cause permanent degradation of ground or surface water, in addition to protecting habitat and physical and biological features of the air, land or water.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body; most of which can be avoided through flushing of waters.

The **Lake Michigan and Chicago Lakefront Protection Ordinance**, City of Chicago ordinance sets out to maintain and improve the purity and quality of the waters of Lake Michigan in Chicago through regulating any landfill, excavation, impoundment, mining, drilling, roadway building or construction in the Lakefront Protection District.

Education, Public Outreach, and Technical and Financial Assistance

On pages 18 and 19 of the **Illinois Clean Marina Program Guidebook**, in the Siting and Design of New or Expanding Marinas chapter, there are BMPs for enhancing water circulation within marinas, including sample layouts.

Enforcement Mechanisms – Marina flushing

The USACE and IDNR require permits for construction in navigable waterways. In Illinois, navigable waterways and “dredge and fill” regulations are both processed through the Joint Application, a partnering procedure led by USACE, with IDNR and IEPA. The Permit review process allows these agencies to evaluate the suitability of a proposed marina site and/or expansion as well as compliance with the Fish and Wildlife Coordination Act, Endangered Species Act, sections 401 and 404 of the Clean Water Act, Illinois Water Quality Standards, and any other applicable regulations.

IEPA is responsible for the enforcement of NPDES rules for construction activities regulated under 40 CFR 122.26 and for evaluating MS4 compliance with their general permit. IEPA can assess civil penalties for violations of NPDES requirements.

IEPA also has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). Lake Michigan Basin Water Quality Standards apply to Lake Michigan harbors and waters (as defined in 35 Ill. Adm. Code 301.440) within Illinois jurisdiction within breakwaters, and most waters tributary to Lake Michigan. Marinas within the Chicago River, the North Shore Channel, and the Calumet River are fall under the General Water Quality Provisions.

At the local level, municipalities have the authority to enforce their ordinances for new development construction and may take the form of issuing citations, stop work orders, denying the issuance of building or occupancy permits, and technical assistance. The most important of these is Chapter 16-4 of the Chicago Municipal Code, the Lake Michigan and Chicago Lakefront Protection Ordinance, that rigorously regulates development in Lake Michigan in the City and includes clauses specific to protection of water quality. The City is empowered to assess civil penalties if this ordinance is violated.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.2 Water Quality Assessment Management Measure

This management measure specifies that water quality be assessed in the siting and design of both new and expanding marinas. Water quality monitoring can determine the quality of water at the site, as well as aid identification of the extent or causes and sources of a water quality problem. Additionally monitoring can be a measure of the effectiveness of best management practices used in the marina. Monitoring data is frequently needed if water quality modeling is used to compare the effects of alternative marina designs. In areas of known good water quality, monitoring might not be needed for small marina developments.

Examples of practices used in this management measure, together with discussion of the benefits, initial and recurring costs, as well as some case studies are provided in USEPA (2001).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas. It is intended to assess and monitor the water quality in marinas.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (**35 IAC 309**). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit, grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

Under **Section 404 of the Clean Water Act**, the majority of marina development and expansion projects along the Great Lakes, including dredging, will require a **joint permit** from USACE, IDNR, and IEPA. Before a Section 404 permit can be issued, IEPA must certify that the proposed project is in compliance with the state's water quality standards (33 U.S.C. 1341). For individual permits, certification occurs

during the application review. In order for nationwide permits and other general permits issued by USACE to be valid in Illinois, IEPA must have already certified that the activities they permit will meet water quality standards. Applications that fail to meet water quality standards can be denied even if the proposed activity complies with all other Section 404 provisions.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

Education, Public Outreach, and Technical and Financial Assistance

For inland lakes, rivers and streams, IEPA **Ambient Water Quality Monitoring Programs** collect integrated water column samples on a six week sampling frequency. These samples are analyzed for a minimum of 55 universal parameters including field pH, temperature, specific conductance, dissolved oxygen, suspended solids, nutrients, fecal coliform bacteria, and total and dissolved heavy metals.

The Harbors monitoring component of IEPA's **Lake Michigan Monitoring Program (LMMP)** has 1-4 sample sites in each harbor on Lake Michigan based on size and are monitored on a 5-year rotational basis with 2-3 harbors monitored per year. These sites are sampled in May, July, and September at a sample depth of 1.5 foot. In addition to in-situ surface measurements (temperature, DO, pH, conductivity, and turbidity), chemical parameters analyzed include chloride, fluoride, metals (total), nutrients (total), solids (total, dissolved, and volatile), and sulfate. Furthermore, at a subset of sites (5/year or 20%) an expanded suite of parameters are also collected and analyzed. These include full temperature/DO profiles, additional chemical parameters (cyanide, dissolved nutrients and metals, phenols, total organic carbon, and pesticides), and near bottom (total depth – 2 feet) water chemistry samples. Chlorophyll and phytoplankton samples are taken at these expanded sites as well. The data from this program in addition to the near shore and the public water supply survey programs is used to monitor and assess the overall water quality of the Illinois portion of Lake Michigan. These assessments are conducted on a biannual basis and are contained in the IEPA's Illinois Integrated Water Quality Report and Section 303(d) List.

Enforcement Mechanisms- Water Quality Assessment

IEPA is responsible for the enforcement of NPDES rules for construction activities regulated under 40 CFR 122.26 and for evaluating MS4 compliance with their general permit. IEPA can assess civil penalties for violations of NPDES requirements.

Water Quality Certification is part of regulatory approvals under the Joint Permit process through sections 401 and 404 of the Clean Water Act, and is issued by the IEPA Bureau of Water. Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

At the local level, municipalities have the authority to enforce their ordinances for new development construction and may take the form of issuing citations, stop work orders, denying the issuance of building or occupancy permits, and technical assistance. The most important of these is Chapter 16-4 of the Chicago Municipal Code, the Lake Michigan and Chicago Lakefront Protection Ordinance, that rigorously regulates development in Lake Michigan in the City and includes clauses specific to protection of water quality.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.3 Habitat Assessment Management Measure

The purpose of this management measure is to encourage marinas to be designed and located so as to eliminate or minimize adverse effects on shellfish resources, wetlands, submerged aquatic vegetation, and other important habitat areas. This management measure also focuses on marina siting and design and extends to assessments so that marinas can incorporate natural habitats into their siting and design. Marinas can be compatible with, and provide a valuable habitat for, plants and animals that are adapted to quiet, sheltered waters. Siting or expanding a marina where its development or operation will diminish the biological or economic value of the surrounding habitats should be very carefully considered. Such habitats might be fish spawning areas, designated wetlands or beds of submerged aquatic vegetation, or areas important to threatened or endangered species.

Older marinas that have an operating history often provide sheltered, quiet waters for plants and animals that prefer this type of environment or for animals that need this type of environment during specific life stages, such as spawning. Where the surrounding environment has been developed and offers little natural habitat, such as the hardened shoreline along much of Chicago's coast, a marina might provide a refuge for many species.

Details on practices, benefits, costs and case studies for this management measure can be reviewed in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas where site changes may impact on wetlands, shellfish beds, submerged aquatic vegetation (SAV), or other important habitats. The habitats of nonindigenous nuisance species, such as some clogging vegetation or zebra mussels, are not considered important habitats

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **Fish and Wildlife Coordination Act (16 USC 661)** requires a USFWS review of potential effects on fish and wildlife from proposed water resource development projects. The act requires that fish and wildlife resources receive consideration equal to other project features. In addition, it also requires federal agencies that construct, license, or permit water resource development projects, such as USACE, to first consult with USFWS IDNR, IEPA, and local agencies to mitigate impacts on fish and wildlife.

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit, grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

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

The **River and Harbors Act (Navigable Waters, 33 USC 403)** governs the use of public waters and gives IDNR the authority to regulate construction activities in state waterways. As part of this authority, **17 IAC 3700-3708** require marinas to obtain a permit from IDNR for any construction project in a public body of water. Permits are usually required for individual projects, although some common construction activities are covered under statewide and regional permits. Work that meets all the specified limits of a statewide or regional permit is automatically approved. Marina projects that may require permits include dredging, control of aquatic nuisance species, placement of docks/piers, bank stabilization, and building of marina breakwater structures. This review ensures that projects are not going to cause permanent degradation of ground or surface water, in addition to protecting habitat and physical and biological features of the air, land or water.

Education, Public Outreach, and Technical and Financial Assistance

On pages 25-32 of the **Illinois Clean Marina Program Guidebook**, in the Marina Maintenance and Operation chapter, there are BMPs for protecting and creating habitats within and around marinas. The Stormwater Management chapter also provides BMPs that would create habitat, while reducing stormwater runoff, such as a rain garden.

Enforcement Mechanisms- Habitat Assessment

IEPA is responsible for the enforcement of NPDES rules for construction activities regulated under 40 CFR 122.26 and for evaluating MS4 compliance with their general permit. IEPA can assess civil penalties for violations of NPDES requirements.

The USACE and IDNR require permits for construction in navigable waterways. In Illinois, navigable waterways and “dredge and fill” regulations are both processed through the Joint Application, a partnering procedure led by USACE, with IDNR and IEPA. The Permit review process allows these agencies to evaluate the suitability of a proposed marina site and/or expansion as well as compliance with the Fish and Wildlife Coordination Act, Endangered Species Act, sections 401 and 404 of the Clean Water Act, Illinois Water Quality Standards, and any other applicable regulations.

IEPA also has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit. Lake Michigan Basin Water Quality Standards apply to Lake Michigan harbors and waters (as defined in 35 Ill. Adm. Code 301.440) within Illinois jurisdiction within breakwaters, and most waters tributary to Lake Michigan. Marinas within the Chicago River, the North Shore Channel, and the Calumet River are fall under the General Water Quality Provisions.

At the local level, municipalities have the authority to enforce their ordinances for new development construction and may take the form of issuing citations, stop work orders, denying the issuance of building or occupancy permits, and technical assistance. Chicago’s Lake Michigan and Chicago Lakefront Protection Ordinance regulates development in Lake Michigan in the City and includes clauses specific to protection of areas of ecological and water quality importance. The City is empowered to assess civil penalties if this Ordinance is violated.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.4 Shoreline and Stream Bank Stabilization Management Measure

Where shoreline erosion is a nonpoint source pollution problem, shorelines and/or stream banks should be stabilized. Vegetative methods are strongly recommended over structural methods, where cost-effective, considering the severity of wave and wind erosion, off shore bathymetry, and the potential adverse impact on shorelines and off shore areas. The purpose of this management measure is to protect shorelines and streambanks from erosion due to runoff, wind and boat-generated waves or currents.

In a marina, structures are intended to protect boats, piers, and other elements from waves and currents. The marina basin is designed and built to be a calm, non-eroding environment. Erosion can still occur along the perimeter or outside a marina. Wave energy reflected off a structure such as a breakwater or from boat wakes may cause bank erosion where it is not desirable. Scour along the bottom of a structure such as a breakwater or at the abrupt junction of two unlike materials, such as river bottom sediments and a cement boat ramp, can also be a problem. Bank erosion and scour can result in sediment filling in a marina basin (and the need for maintenance dredging) or erosion at the edges of a boat ramp. Minimizing shoreline erosion will protect marina shorelines and can reduce the need for or frequency of maintenance dredging.

A vegetated shoreline can minimize the reflection of wave energy to other locations. Vegetation is also a relatively low-cost means to stabilize a shoreline, and it can add an attractive element to an otherwise engineered environment. Used by itself, vegetation is most effective where waves or currents are low in energy, the soil is stable enough for plant growth, and banks have shallow slopes. Where wave or current energy is too strong for vegetation to establish itself, temporary structures can be used to protect vegetation until it can get going, or permanent structures might be necessary. Permanent protective structures could be needed where wave or current energy is too great for establishing and maintaining vegetation. Vegetation can often be added at the edges of structural elements to soften the structure and serve as a landscaping element.

Details on practices, benefits, costs and case studies for this management measure can be reviewed in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas where site changes may result in shoreline erosion. It is intended to prevent and reduce shoreline and stream bank erosion.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **Fish and Wildlife Coordination Act (16 USC 661)** requires a USFWS review of potential effects on fish and wildlife from proposed water resource development projects. The act requires that fish and wildlife resources receive consideration equal to other project features. In addition, it also requires federal agencies that construct, license, or permit water resource development projects, such as USACE, to first consult with USFWS IDNR, IEPA, and local agencies to mitigate impacts on fish and wildlife.

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and

issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (**35 IAC 309**). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit, grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

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

The **River and Harbors Act (Navigable Waters, 33 USC 403)** governs the use of public waters and gives IDNR the authority to regulate construction activities in state waterways. As part of this authority, 17 IAC 3700-3708 require marinas to obtain a permit from IDNR for any construction project in a public body of water. Permits are usually required for individual projects, although some common construction activities are covered under statewide and regional permits. Work that meets all the specified limits of a statewide or regional permit is automatically approved. Marina projects that may require permits include dredging, control of aquatic nuisance species, placement of docks/piers, bank stabilization, and

building of marina breakwater structures. This review ensures that projects are not going to cause permanent degradation of ground or surface water, in addition to protecting habitat and physical and biological features of the air, land or water.

The **Lake Michigan and Chicago Lakefront Protection Ordinance**, City of Chicago ordinance sets out to maintain and improve the purity and quality of the waters of Lake Michigan in Chicago through regulating any landfill, excavation, impoundment, mining, drilling, roadway building or construction in the Lakefront Protection District.

Education, Public Outreach, and Technical and Financial Assistance

On page 23 of the **Illinois Clean Marina Program Guidebook**, in the Marina Maintenance and Operation chapter, there are BMPs for marina facilities and structures, including employing nonstructural shore erosion control measures.

Enforcement Mechanisms – Streambank Stabilization

The USACE and IDNR require permits for construction in navigable waterways. In Illinois, navigable waterways and “dredge and fill” regulations are both processed through the Joint Application, a partnering procedure led by USACE, with IDNR and IEPA. The Permit review process allows these agencies to evaluate the suitability of a proposed marina site and/or expansion as well as compliance with the Fish and Wildlife Coordination Act, Endangered Species Act, sections 401 and 404 of the Clean Water Act, Illinois Water Quality Standards, and any other applicable regulations.

IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

At the local level, municipalities have the authority to enforce their ordinances for new development construction and may take the form of issuing citations, stop work orders, denying the issuance of building or occupancy permits, and technical assistance. Chicago’s Lake Michigan and Chicago Lakefront Protection Ordinance regulates development in Lake Michigan in the City and includes clauses specific for protection of areas of ecological and water quality importance. The City is empowered to assess civil penalties if this Ordinance is violated.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.5 Marinas: Stormwater Runoff Management Measure

This management measure, which applies to runoff from the marina sites only, specifies implementation of storm runoff controls. Among the most important practices are the ones involving pollution prevention activities and the proper design of hull maintenance areas. At least 80% of total suspended solids must be removed from stormwater runoff coming from the hull maintenance areas. Marinas

which obtain a NPDES permit for their hull maintenance areas are not required to conform to this hull maintenance area provision.

Storm runoff in marinas can carry small particles and soluble substance from various surfaces into Lake Michigan. Hull maintenance generates sanding dust, paint dust and chips, copper and other heavy metals, and other such solids. Substances such as oils, grease, solvents, paint drippings, and fuel are frequently used at marinas and can easily be spilled. These pollutants can contaminate storm runoff if they are not managed while maintaining, repairing or cleaning a boat. Unless the runoff is collected for treatment, all of these pollutants end up in the marina basin, where they degrade water quality for aquatic life, create unsightly surface films or float until they adhere to surfaces like boat hulls or docks.

The National Pollutant Discharge Elimination System (NPDES) was established to control pollutant discharges, including those from storm water runoff. The 1987 amendments to the Clean Water Act mandated USEPA to develop a tiered implementation strategy to for previously unregulated storm water discharges. USEPA initially developed Phase I of the NPDES Storm Water Program in 1990. Phase I requires NPDES permits for storm water discharges from

- “Medium” and “large” municipal separate storm sewer systems (MS4s) that serve or are located in incorporated places or counties with populations of 100,000 or more people.
- Eleven categories of industrial activity, one of which is construction activity that disturbs 5 acres or more of land. The 11 categories of industrial activities for which storm water discharge permits are required are include marinas, boatyards and boat builders that repair, clean, and/or fuel boats.

Subsequently Phase II of the NPDES Storm Water Program went into effect and brought many municipal separate storm sewer systems serving fewer than 100,000 people, census districts in counties with population densities greater than 1,000 per square mile, and small construction sites of between 1 and 5 acres into the NPDES permitting program by March 2003.

Examples of practices used in this management measure, together with discussions of pollutant removal efficiencies, other benefits, initial and recurring costs, as well as case studies are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas, and to existing marinas for at least the hull maintenance areas. If boat bottom scraping, sanding, and/or painting is done in areas other than those designated as hull maintenance areas, the management measure applies to those areas as well. This measure is not applicable to runoff that enters the marina property from upland sources. It is intended to reduce the amount of runoff and the pollution in the runoff from entering the surface water.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit, grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (**35 IAC 309**). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

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

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

The **Lake Michigan and Chicago Lakefront Protection Ordinance**, City of Chicago ordinance sets out to maintain and improve the purity and quality of the waters of Lake Michigan in Chicago through regulating any landfill, excavation, impoundment, mining, drilling, roadway building or construction in the Lakefront Protection District.

Education, Public Outreach, and Technical and Financial Assistance

IEPA's **Phase II MS4 stormwater program** requires permit holders to conduct public education and outreach on storm water impacts. This can include distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality. Permit holders are also required to provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.

IEPA's **Illinois Green Infrastructure Study** reports on the effectiveness of bioinfiltration, permeable pavement, filtration, green roof, constructed wetlands. It also describes funding sources available, current practices, recommendations, habitat improvement through green infrastructure and has a list of example successful green infrastructure projects in northeastern Illinois. All of this is available to the general public and can be found here: <http://www.epa.state.il.us/green-infrastructure/docs/draft-final-report.pdf>

IDNR released an **Addendum on Green Infrastructure** to expand the definition of green infrastructure to include the ecological services provided beyond stormwater benefits. This includes examples of application on a federal, state/regional, and local/county/municipal scale. The Addendum can be found here: <http://www.epa.state.il.us/green-infrastructure/docs/idnr-report-addendum.pdf>

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach. **Section 305(b) of the CWA** is the primary assessment of

state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

On pages 33-37 of the **Illinois Clean Marina Program Guidebook**, in the Stormwater Management chapter, there are BMPs for reducing and filtering stormwater runoff such as minimizing impervious surfaces, cultivating vegetated areas and stenciling storm drains.

Chicago Metropolitan Agency for Planning has put out a **Stormwater Management Strategy Paper** that provides guidance on creating a stormwater management plan using a variety of BMPs on different scales.

Enforcement Mechanisms

IEPA is responsible for the enforcement of NPDES rules for construction activities regulated under 40 CFR 122.26 and for evaluating MS4 compliance with their general permit. IEPA can assess civil penalties for violations of NPDES requirements.

Water Quality Certification is part of regulatory approvals under the Joint Permit process, and is issued by the IEPA Bureau of Water. This covers section 401 and 404 of the Clean Water Act and the Illinois Water Quality Standards. Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

At the local level, municipalities have the authority to enforce their ordinances for new development construction and may take the form of issuing citations, stop work orders, denying the issuance of building or occupancy permits, and technical assistance. The most important of these is Chapter 16-4 of the Chicago Municipal Code, the Lake Michigan and Chicago Lakefront Protection Ordinance, that rigorously regulates development in Lake Michigan in the City and includes clauses specific to protection of water quality.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.6 Fueling Station Design Management Measure

This management measure specifies that fueling stations at marinas be located and designed to allow for ease in cleanup of spills. Fueling stations should also be provided with fuel containment and cleanup equipment and a spill contingency plan.

Spillage is always possible during boat fueling operations, and spills of gasoline and diesel fuel are a common source of pollution in marina waters. Most fuel dock spills are small and result from overfilling fuel tanks or drips from the nozzle as it is removed from the boat and returned to the fuel dock. A rare but damaging form of fuel loss that occurs is when fuel leaks from fuel pipes and hoses between the fuel

storage tank and the pump. This leakage can result from dock damage from a major storm or a boat collision.

Marinas should have equipment that minimizes these types of spills and equipment that is available to contain, absorb, and minimize the spread of petroleum products spilled during fueling. Diesel and gasoline are less dense than water and therefore float on the surface. In this way, fuel spills can be relatively easy to identify and capture, particularly if containment and absorption equipment is readily available and deployed quickly.

The most effective way to minimize pollution from fuel spills at a marina is to locate, design, build, and operate a fuel dock so that most spills are prevented and those that do occur are quickly contained and cleaned up. A good preventive measures at fuel docks is to identify and locate sources of leaks or spills, such as at joints in piping systems or between pipes and storage tanks, and to address each one in the facility's Spill Prevention, Control, and Countermeasures (SPCC) Plan. An SPCC plan is a federal requirement (40 CFR Part 112) for any marina that has more than 660 gallons of fuel storage in a single aboveground container; an aggregate of 1,320 gallons above ground; or more than 42,000 gallons underground. Also, the Occupational Safety and Health Act (OSHA) has various regulations governing employee involvement in spill cleanups, including requiring training for such activities. Facilities are encouraged to have employees attend hazardous materials handling training or other appropriate training.

Examples of these and other practices used in this management measure are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas where fueling stations are to be added or moved. It is intended to promote designs of fueling stations that will reduce the risk of fuel entering the water.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **Illinois Gasoline Storage Act (430 ILCS 15)** gives the Office of the State Fire Marshal (OSFM) the authority to regulate above ground and below ground gasoline storage tanks in addition to the dispensing of fuel in order to insure the safety and welfare of the general public.

OSFM Rules for Aboveground Bulk Storage Tanks (41 IAC 160) are to insure the safety and welfare of the general public. These rules also address preventing and containing spills to keep the petroleum product from reaching surface or groundwater.

It is illegal under the **Petroleum Dispensing and Fueling Rules (41 IAC 175.250)** for boaters to fuel their own vessels at a marina. Marinas must ensure that an attendant is always available to fuel vessels for customers. This rule also requires that emergency shutoff switches be installed at each fueling facility in case of fire or physical damage.

The **Lake Michigan and Chicago Lakefront Protection Ordinance**, City of Chicago ordinance sets out to maintain and improve the purity and quality of the waters of Lake Michigan in Chicago through regulating any landfill, excavation, impoundment, mining, drilling, roadway building or construction in the Lakefront Protection District.

Education, Public Outreach, and Technical and Financial Assistance

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 305(b) of the CWA** is the primary assessment of state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

On pages 51-61 of the **Illinois Clean Marina Program Guidebook**, in the Petroleum Control chapter, there are BMPs for preventing spills at the source and spill response planning, including avoiding wakes and waves when siting a fueling station and installing and maintaining petroleum storage tanks properly.

OSFM Technical Services Division will review plans and applications submitted for installation or modification of above ground storage tanks. Architectural drawings of new construction, renovations and additions can also be reviewed for compliance with state fire codes.

Enforcement Mechanisms

A number of Federal, State and Local programs apply to marina fueling station design. The State Fire Marshal's Office has regulations concerning marine service stations, as well as technical and engineering review assistance for a variety of subjects including: Life Safety Code enforcement, aboveground tank storage regulation, and countless other fire prevention and petroleum and chemical safety related issues. OSFM inspects fueling stations annually to ensure there are no violations of the Gasoline Storage Act. All fueling stations must display the current year's green decal to indicate that the station is in compliance.

At the local level, municipalities have the authority to enforce their ordinances for new development construction and may take the form of issuing citations, stop work orders, denying the issuance of building or occupancy permits, and technical assistance. The most important of these is Chapter 16-4 of the Chicago Municipal Code, the Lake Michigan and Chicago Lakefront Protection Ordinance, that rigorously regulates development in Lake Michigan in the city and includes clauses specific to protection of water quality.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.7 Sewage Facilities Management Measure

This management measure is intended to prevent the release of sewage to surface waters from boats through design of marinas with proper sewage management facilities, including pumpout, dump station, and adequate restroom facilities. These facilities are to be designed to allow for ease of access and signage should be used to promote use by the boating public.

Boat sewage is an ecological and public health threat when it is discharged into surface waters without pretreatment. Sewage from boats is more concentrated than traditional sanitary wastewater because marine heads use little water for flushing and the sewage in marine heads is not diluted by water from bathing, dishwashing, or rain. Sewage contains nutrients that can stimulate growth of aquatic plants and pathogens that can directly cause health problems. Boaters and marinas have a vested interest in clean water because of the recreational benefits boaters derive from clean water.

Installations of pumpouts and boater education programs have reduced discharge of boat sewage in recent years (EPA 2001). Marinas can play an important role in continuing progress on this issue by installing pumpout facilities and restrooms at new and existing marinas. Most states encourage the installation and use of pumpouts through the federal Clean Vessel Act (CVA) Grant Program and boater education.

It is illegal under federal law (33 CFR Part 159) for any person to operate a vessel with an installed toilet facility unless it meets approved marine sanitation device (MSD) standards. Type I and II MSDs are used to pretreat boat sewage before discharging it overboard (except in a no discharge zone) if not prohibited by local ordinances. In an area designated as a no discharge zone, MSDs of all types must be configured to prevent discharge to surface waters and all sewage must be pumped out. Type III MSDs are holding tanks. They must be discharged to sewage treatment systems.

Two of the most important factors in for preventing sewage discharge from boats are providing adequate pumpout facilities and boater education program. The Clean Vessel Act (CVA) provides federal funding for the installation of adequate pumpout facilities, and grants are available to both private and public marinas for the construction, renovation, operation, and maintenance of pumpout stations and waste reception facilities. The Clean Marina Program can provide technical assistance to marinas seeking CVA funds.

This management measure applies to new and expanding marinas in the Illinois coastal zone where adequate marine sewage collection facilities do not exist. Marinas that do not provide services for vessels that have MSDs do not need to have pumpouts, although dump stations for portable toilets and restroom facilities should be available. This measure does not address direct discharges from vessels covered under Section 312 of the CWA. Examples of practices used in this management measure are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas in areas where adequate marine sewage collection facilities do not exist. Marinas that do not provide services for vessels that have marine sanitation devices (MSDs) do not need to have pumpouts, although dump stations for portable toilets and restrooms should be available. This measure does not address direct discharges from vessels covered under CWA section 312. It is intended to ensure marinas have an appropriate sewage facility to accommodate their patrons.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (**35 IAC 309**). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

It is illegal under the **Boater Registration and Safety Act (625 ILCS 45/4-9)** to discharge sewage into state waterways. Required measures for preventing illegal discharge are outlined in the CWA. Any vessel with an installed toilet must be equipped with a USCG-certified Type I, Type II, or Type III marine sanitation device (MSD). Vessels 65 feet and under may have any of the three types of MSDs. Vessels over 65 feet must have a Type II or III system. Additionally, Type I and Type II systems must display a certification label affixed by the manufacturer. This label is not required on Type III systems.

The **Sewage Management Rule (77 IAC 800.1300)** requires marinas to provide pump-out stations wherever boats equipped with toilets are allowed to dock in recreational areas. Shoreside restrooms for

both men and women are also required if marinas provide docking facilities for overnight sleeping. Restrooms must be located within 500 feet of recreational areas.

Education, Public Outreach, and Technical and Financial Assistance

The **Clean Vessel Act (CVA, 50 CFR 85)** provides grant funds to IDNR to distribute for the construction, renovation, operation, and maintenance of pumpout stations and waste reception facilities for recreational boaters and also for educational programs that inform boaters of the importance of proper disposal of their sewage. Under this act, marinas can receive up to \$12,500 in grant funding to install a pump-out system. In exchange for grant funding, marina owners agree to maintain pump-out systems in good operating condition for a minimum of 10 years and not to charge more than \$5 per pump-out. The pump-out system must be able to accept waste from portable toilets, as well as holding tanks, and must be available to the public during reasonable business hours.

IEPA's **Phase II MS4 stormwater program** requires permit holders to conduct public education and outreach on storm water impacts. This can include distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality. Permit holders are also required to provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach.

On pages 62-68 of the **Illinois Clean Marina Program Guidebook**, in the Sewage Handling chapter, there are BMPs for waste containment and disposal, including managing fish waste such as building cleaning stations large enough to accommodate the volume of fish waste generated at the marina.

Enforcement Mechanisms

IEPA can assess civil penalties for illicit discharges of sewage to surface waters and violations of NPDES requirements. IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302).

IDNR is responsible for enforcing the Boater Registration and Safety Act. Conservation Police Officers, sheriffs, deputy sheriffs and other police officers will arrest any boaters violating this Act and their boats can be impounded.

The Illinois Department of Public Health ensures marinas are following the Recreational Area Code, including the section on sewage management (77 IAC 800.1300) at boating facilities, through regular inspections.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.8 Solid Waste Management Measure

This management measure specifies that solid wastes produced by the operation, cleaning, maintenance, and repair of boats should be properly disposed of so that these wastes do not enter marina waters. This management measure focuses on controlling the solid waste that can collect at marinas and boat ramps if waste receptacles are not conveniently provided or sufficient attention is not given to controlling waste from boat cleaning, maintenance, and repair.

Many of the management practices that are useful for reducing solid waste production during boat maintenance activities are those of the Storm Water Runoff Management Measure because much of the solid waste produced during boat maintenance activities could potentially be carried to surface waters in storm water runoff.

Cleanliness at a marina can also lead to public recognition and to less trash in slips and common areas. Substantial aquatic cleanup costs can be replaced by smaller investments in trash collection and preventive practices. Providing sufficient waste receptacles, separating wastes into classes of recyclables, and preventing litter are all accepted practices today and are part of customer service and environmentally friendly management at public facilities.

Examples of practices used in this management measure, together with discussions of pollutant removal efficiencies, other benefits, initial and recurring costs, as well as case studies are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to new and expanding marinas. It is intended to reduce the amount of solid waste entering the water.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit, grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (35 IAC 309). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

The **Marine Plastic Pollution Research and Control Act of 1987 (33 USC 1914-1915)** restricts the overboard discharge of garbage. Under this law, it is illegal to dump plastic, paper, rags, glass, metal, crockery, dunnage (lining and packing material, nets, lines, etc.), and food into any U.S. lake, river, and bay. Ports and terminals, including recreational marinas, must provide adequate and convenient receptacles for their customers, including transients. All boats over 40 feet must also have a written waste management plan on board.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

General Solid Waste Management Regulations (35 IAC 807-810) establish procedures for the storage, transport, and disposal of solid waste, including special waste. Solid waste management requirements differ depending on the material and quantity.

Education, Public Outreach, and Technical and Financial Assistance

IEPA's **Phase II MS4 stormwater program** requires permit holders to conduct public education and outreach on storm water impacts. This can include distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality. Permit holders are also required to provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach. **Section 305(b) of the CWA** is the primary assessment of state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

The Alliance for the Great Lakes coordinates the **Adopt-a-Beach™ program**, which includes litter removal and tracking. It is a way for members of the local community to get involved with a regional program. Despite its name, the program applies to more than just beaches. For example, groups have “adopted” Burnham Harbor, the North Pond and South Pond in Lincoln Park, and other water bodies that connect to Lake Michigan. The group that has adopted Burnham Harbor is made up of divers who bring litter and debris up from the bottom of the harbor. In addition to litter removal and monitoring, volunteers can complete a beach health assessment form using science-based sampling and observation. The litter monitoring form can be found here:

<http://www.greatlakes.org/document.doc?id=1444>.

On pages 70-84 of the **Illinois Clean Marina Program Guidebook**, in the Waste Containment and Disposal chapter, there are BMPs for proper waste containment and disposal, including managing pet waste and recycling. The guidebook recommends using wind screens around dumpsters to prevent litter in addition to picking up litter around the harbor twice a day.

Enforcement Mechanisms

Marine Plastic Pollution Research and Control Act restricts the overboard discharge of garbage and makes it illegal to dump plastic, paper, rags, glass, metal, ceramic, etc. into any waterbody. The law is typically enforced by marine police (IDNR, City of Chicago, other local law enforcement authorities).

Water Quality Certification is part of regulatory approvals under the Joint Permit process, and is issued by the IEPA Bureau of Water. This covers section 401 of the Clean Water Act and the Illinois Water Quality Standards. Additionally, IEPA is responsible for the enforcement of NPDES rules for activities regulated under 40 CFR 122.26 and for evaluating MS4 compliance with their general permit. IEPA can assess civil penalties for violations of NPDES requirements. IEPA also has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302).

The Illinois Pollution Control Board enforces the General Solid Waste Management regulations. Violators can be ordered to cease and desist from further violations, take pollution abatement measures, clean up contamination, reimburse cleanup costs, or pay substantial fines.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.9 Fish Wastes Management Measure

In sufficient quantity, wastes from catching and cleaning fish can result in the depletion of dissolved oxygen in water and odor problems on land. To address this concern, this management measure is intended to promote sound fish waste management through a combination of fish cleaning restrictions, public education, and proper disposal.

Fish waste can create water quality problems at marinas where fish are landed and cleaned. This might be the case at any marina during the fishing season. The waste from fish cleaning should not be disposed of into a marina basin. This creates water quality problems and impacts aesthetic value. Fish waste also attracts nuisance species, such as gulls, raccoons, and rats that can also contribute to localized animal waste and aesthetics issues. Fish waste should be treated like any other organic material and deposited in trash containers or designated receptacles. Fish cleaning stations provide convenient places for marina patrons to clean fish and dispose of their waste material, and they help to keep the rest of the marina clean.

This management measure is applicable to marinas where fish waste is determined to be a source of water pollution.

Examples of practices used in this management measure, together with discussions of pollutant removal efficiencies, other benefits, initial and recurring costs, as well as case studies are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to marinas where fish waste is determined to be a source of water pollution. It is intended to promote the proper disposal of fish waste.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (35 IAC 309). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

Education, Public Outreach, and Technical and Financial Assistance

IEPA's **Phase II MS4 stormwater program** requires permit holders to conduct public education and outreach on storm water impacts. This can include distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality. Permit holders are also required to provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning

and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach. **Section 305(b) of the CWA** is the primary assessment of state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

On pages 77 and 78 of the **Illinois Clean Marina Guidebook**, in the Waste Containment and Disposal chapter, there are BMPs for managing fish waste such as building cleaning stations large enough to accommodate the volume of fish waste generated at the marina. The guidebook recommends that marinas prohibit boaters from dumping fish waste into the water and to designate an area within the marina for fish cleaning.

Enforcement Mechanisms

IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

Additionally, IEPA is responsible for the enforcement of NPDES rules for activities regulated under 40 CFR 122.26 and for evaluating MS4 compliance with their general permit. IEPA can assess civil penalties for violations of NPDES requirements. IEPA also has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302).

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.10 Liquid Material Management Measure

This management measure ensures the availability of appropriate storage, transfer, containment, and disposal facilities for liquid materials commonly used in boat maintenance. It encourages the recycling of these materials whenever possible.

Marinas store a variety of liquids for boat and facility operation and may generate liquid wastes on marina property. Adequate storage and disposal facilities are important if these materials are to be kept out of the environment. Proper storage is also important to ensure that liquid materials do not become contaminated while in storage and have to be disposed of prematurely. Marina patrons and employees are more likely to properly dispose of liquid wastes if adequate and safe disposal facilities are provided.

Liquid materials for sale or use at the marina, such as fuels, oils, solvents, and paints, should be stored in a manner that minimizes the chance of a spill and contains a spill if one occurs. Liquid wastes, such as waste fuel, used oil, spent solvents, and spent antifreeze, should be similarly stored until they can be recycled or disposed of properly. Small quantities of many liquid wastes, including antifreeze, waste oil, pesticides, cleaners, solvents, and paints, can be harmful or even deadly.

There are many regulations for control of liquid wastes. Regardless of whether a liquid waste material is eventually recycled or disposed of, careful documentation of how much material is collected, how it is removed from the facility, and where it is ultimately going is extremely important. These records are invaluable if there is ever any question from state or federal authorities regarding the marina's hazardous waste collection and disposal practices. Marina staff and boaters should be informed about safe storage and disposal of liquid wastes. If a marina collects waste oil for recycling or disposal, precautions need to be taken to prevent contamination of waste types. Contaminated or mixed liquid wastes can be expensive to dispose of because commercial removal companies charge their highest rates for unknown mixtures. Holding tanks for liquid wastes should be kept locked, and a staff person should be responsible for moving waste from a collection site to the storage facility.

Examples of practices used in this management measure are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to marinas where liquid materials used in the maintenance, repair, or operation of boats are stored. It is intended to promote the proper storage and disposal of liquid wastes.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license which may result in a discharge of pollutants into waters of the United States must obtain a state water quality certification that the activity complies with all applicable water quality standards, limitations, and restrictions. Projects within the regulatory floodway of rivers, lakes and streams which are not covered under an existing Section 404 permit are required to provide an anti-degradation report which 1) assesses alternatives to the proposed project which will result in reduced pollutant load 2) includes a mitigation plan for unavoidable environmental degradation, 3) identifies and characterized the current physical, biological and chemical conditions of the waterbody impacted by the proposed project, 4) quantifies the potential increase in pollutant load and potential impacts of the proposed project. Permits issued under Sections 9 and 10 of the Rivers and Harbors Act also require Section 401 certification. It is required that the proposed activity be conducted in manner that does not violate water quality standards. IEPA has the option to waive the Section 401 certification, grant the permit,

grant the permit with conditions, or deny the permit. IEPA may require monitoring or mitigation as a condition for certification.

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (35 IAC 309). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

The **Illinois Gasoline Storage Act (430 ILCS 15)** gives the Office of the State Fire Marshal (OSFM) the authority to regulate above ground and below ground gasoline storage tanks in addition to the dispensing of fuel in order to insure the safety and welfare of the general public.

Hazardous Waste Management Rules (35 IAC 720-729) expand upon the federal Resource Conservation and Recovery Act and outline requirements for hazardous waste management in Illinois. Requirements under these laws differ depending on the amount of hazardous waste generated on site.

Education, Public Outreach, and Technical and Financial Assistance

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of

new technology and education and outreach. **Section 305(b) of the CWA** is the primary assessment of state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

On pages 38-50 in the **Illinois Clean Marina Guidebook**, in the Vessel Maintenance and Repair chapter, there are BMPs for handling liquid materials such as antifreeze, bilge water and paint. Additionally, in the Waste Containment and Disposal chapter on pages 75-77, there are BMPs for collection, disposal, and recycling of liquid wastes, including recycling used oil, proper disposal of antifreeze and methods for handling other liquid waste from boat owners.

Enforcement Mechanisms

Water Quality Certification is part of regulatory approvals under the Joint Permit process through section 401 of the Clean Water Act, and is issued by the IEPA Bureau of Water. Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

OSFM inspects fueling stations annually to ensure there are no violations of the Gasoline Storage Act. All fueling stations must display the current year's green decal to indicate that the station is in compliance.

Hazardous Waste Management Rules (35 IAC 720-729) establish standards for handling, transporting, and disposing of materials that are ignitable, corrosive, reactive, or toxic in Illinois. Facilities that generate these materials, known as hazardous waste, are categorized according to the quantity of waste generated on-site. Some requirements laid out in this law apply to all hazardous waste generators, but most are specific to the amount of waste being generated.

Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.11 Petroleum Control Management Measure

This management measure aims to reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering marina and surface waters. Fueling stations should have fuel containment and cleanup equipment and a spill contingency plan.

Overfilling a boat's fuel tank can release gasoline or diesel into marina waters from the fuel tank air vent; oil is easily discharged during bilge pumping. A small fuel sheen on the water surface near docked

boats is an all-too-common sight and can be caused by a spill of only a few drops. Small amounts of oil spilled from multiple boats can accumulate to create large oil sheens. Gasoline spills can be a safety problem because of gasoline's flammability. Hydrocarbons are dangerous to aquatic plants and animals. Further, petroleum spills can cause structural damage at marinas: discoloration on boat hulls, woodwork and paint, and, deterioration of styrofoam in floats and docks.

Petroleum control practices as presented in detail in USEPA (2001) are used in many marinas. Their purpose is to minimize the entry of petroleum from fueling and bilge pumping into surface waters. Technologies such as air/fuel separators, oil-absorbing pads, and bioremedial pads and socks have been developed in response to a growing recognition of the cumulative ecological damage that can be done by even small spills of petroleum products into surface waters. These small spills escape the attention of many people, and marina owners and operators can play an important role in bringing the importance of controlling this form of pollution to the attention of their patrons.

Examples of these and other practices used in this management measure are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to boats that have inboard fuel tanks. It is intended to reduce the number and volume of incidental fuel spills.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **Illinois Gasoline Storage Act (430 ILCS 15)** gives the Office of the State Fire Marshal (OSFM) the authority to regulate above ground and below ground gasoline storage tanks in addition to the dispensing of fuel in order to insure the safety and welfare of the general public.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

OSFM Rules for Aboveground Bulk Storage Tanks (41 IAC 160) are to insure the safety and welfare of the general public. These rules also address preventing and containing spills to keep the petroleum product from reaching surface or groundwater.

OSFM Rules for Aboveground Fuel Dispensing Storage Tanks (41 IAC 180) makes it illegal to pour liquids of Classes I, II and III, or solutions containing these liquids, into any sewer or into any drain which connects with a sewer system.

It is illegal under the **Petroleum Dispensing and Fueling Rules (41 IAC 175.250)** for boaters to fuel their own vessels at a marina. Marinas must ensure that an attendant is always available to fuel vessels for customers. This rule also requires that emergency shutoff switches be installed at each fueling facility in case of fire or physical damage.

Under the **Oil Spill Reporting and Response rules (41 IAC 176.300-176.360)**, owners or operators of petroleum storage tanks are required to immediately report the spill or release of petroleum to Illinois Emergency Management Agency (IEMA) at (800) 782-7860. Spills must also be reported to the National Response Center at (800) 424-8802. Failure to report any spill may result in substantial fines. Owners and operators are also required to immediately clean up any petroleum spill or overfill of 25 gallons or less.

Education, Public Outreach, and Technical and Financial Assistance

Through IEPA's **Voluntary Site Remediation Program (35 IAC 740)**, the agency will review, provide technical assistance and make no further remediation determinations for any persons seeking to perform investigative or remedial activities. IEPA is authorized to issue No Further Remediation (NFR) letters to the Remedial Applicants who have successfully demonstrated, through proper investigation and, when warranted, remedial action, that environmental conditions at their remediation site do not present a significant risk to human health or the environment. The NFR letter signifies a release from further responsibilities under the Illinois Environmental Protection Act. This program's activities are paid by the parties requesting the IEPA's oversight.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach. **Section 305(b) of the CWA** is the primary assessment of state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

On pages 51-61 of the **Illinois Clean Marina Program Guidebook**, in the Petroleum Control chapter, there are BMPs for preventing spills at the source and spill response planning, including maintaining a Spill Prevention, Control and Countermeasure (SPCC) Plan and training employees on proper fueling techniques and spill response.

OSFM Technical Services Division will review plans and applications submitted for installation or modification of above ground storage tanks. Architectural drawings of new construction, renovations and additions can also be reviewed for compliance with state fire codes.

Enforcement Mechanisms

Water Quality Certification, to the Illinois Water Quality Standards, is part of regulatory approvals under the Joint Permit process, and is issued by the IEPA Bureau of Water. Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

IEPA has authority under the Clean Water Act over discharges into waters of the State. Also under 35 IAC 740, the Voluntary Site Remediation Program, the Bureau of Land is authorized to administer the voluntary cleanup of contaminated property.

The State Fire Marshal's Office has regulations concerning marine service stations, as well as technical and engineering review assistance for a variety of subjects including: Life Safety Code enforcement, aboveground tank storage regulation, and countless other fire prevention and petroleum and chemical safety related issues. OSFM inspects fueling stations annually to ensure there are no violations of the Gasoline Storage Act. All fueling stations must display the current year's green decal to indicate that the station is in compliance.

Under the Oil Spill Reporting and Response rules (41 IAC 176.300-176.360), failure to report any spill may result in substantial fines. Owners and operators are also required to immediately clean up any petroleum spill or overflow of 25 gallons or less.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.12 Boat Cleaning Management Measure

This management measure minimizes, to the extent practicable, the release to surface waters of (a) harmful cleaners and solvents and (b) paint from hull cleaning for boats that are in the water. Preventing the entry of chemicals from boat cleaners, cleaning solvents, and antifoulant paint into marina waters is the best way to prevent harm to the aquatic environment from these products. The management practices associated with this management measure are easily implemented, can be practiced by both boat owners and marina managers, and do not interfere with the need to keep boats clean. A variety of boat cleaners, such as teak cleaners, fiberglass polishers, and detergents are available for cleaning boats. Boats are typically cleaned while in the water. If cleaned onshore, some of the cleaning chemicals ultimately end up in the water. Additionally, when boat bottoms are cleaned aggressively, antifouling paint can be abraded off.

Many cleaners contain chlorine, ammonia, phosphates, and other caustic chemicals that can harm fish and other aquatic life. If a product's label warns about potential harm to human skin or eyes, the product is most likely harmful to aquatic life. NPDES storm water regulations defines boat wash water as "processed water" and discharge by a marina or boatyard is illegal nationwide without a permit. This permit requirement does not apply to boat owners who are cleaning their own boats, but it does apply to anyone who professionally cleans boats in a marina.

This management measure primarily concerns the actions of boat owners and the practices are to be implemented primarily by them. Marina managers can help educate boat owners about the importance of these measures in maintaining a clean marina, and marina stores can stock ecologically-friendly cleaning products for sale.

Examples of practices used in this management measure are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to marinas where boat topsides are cleaned and marinas where hull scrubbing in the water has been shown to result in water or sediment quality problems. It is intended to promote proper cleaning techniques that will not pollute the marina waters.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body.

Education, Public Outreach, and Technical and Financial Assistance

IEPA's **Phase II MS4 stormwater program** requires permit holders to conduct public education and outreach on storm water impacts. This can include distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality. Permit holders are also required to provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning

and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan; development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach.

On pages 40-42 of the **Illinois Clean Marina Guidebook**, in the Vessel Maintenance and Repair chapter, there are BMPs for boat and equipment washing such as using cleaning products that are non-toxic and phosphate free and directing water containing solids and particulates to a seepage area.

Enforcement Mechanisms

Water Quality Certification, to the Illinois Water Quality Standards, is part of regulatory approvals under the Joint Permit process, and is issued by the IEPA Bureau of Water. Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.13 Public Education Management Measure

Public education/outreach/training programs should be instituted for boaters, as well as marina operators, to prevent improper disposal of polluting materials. Public education is one of the most effective management measures to reduce pollution in and around marinas. One of the primary factors in the success of any pollution prevention program is widespread support for the program by an educated public. This management measure is not costly and is proven to be effective at improving and reinforcing environmentally conscious behavior in all segments of the public.

A variety of public education materials is available and makes this management measure easy to implement. Many marina owners, most notably those certified under Illinois' Clean Marinas Program, are using public education as a tool for maintaining water quality. Numerous examples of public education materials are available from national organizations like the National Marine Manufacturers Association, the National Clean Boating Campaign organized by the Marine Environmental Education Foundation, Inc. (www.cleanboating.org), Illinois-Indiana Sea Grant program (www.iisgcp.org), and USEPA's Office of Water (www.epa.gov/OW).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to all environmental control authorities in areas where marinas are located. It is intended to increase the public awareness about nonpoint pollution in marinas.

Existing Programs or Practices

The **Clean Vessel Act (CVA, 50 CFR 85)** provides grant funds to IDNR to distribute for the construction, renovation, operation, and maintenance of pumpout stations and waste reception facilities for recreational boaters and also for educational programs that inform boaters of the importance of proper disposal of their sewage. Under this act, marinas can receive up to \$12,500 in grant funding to install a pump-out system. In exchange for grant funding, marina owners agree to maintain pump-out systems in good operating condition for a minimum of 10 years and not to charge more than \$5 per pump-out. The pump-out system must be able to accept waste from portable toilets, as well as holding tanks, and must be available to the public during reasonable business hours.

In the Marina Management chapter (pages 91-99) of the **Illinois Clean Marina Guidebook**, there are BMPs for public awareness such as incorporating BMPs into contracts and distributing Clean Boater Tip Sheets. The Clean Boater Tip Sheets are included in the Guidebook. The Illinois Clean Marina Program also provides a “Clean Boating Tip of the Week” on most Wednesdays via the program’s Facebook page.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 305(b) of the CWA** is the primary assessment of state water quality which can be used for the development of water quality management plans. This assessment is updated annually.

The **IDNR Boating Education and Safety Program** provides a Boating Education Certificate of Competency to boaters that complete the course, either in person or online. This course is aimed at boaters under the age of 18, to prevent reckless driving of a motorized boat. Various course components relate to reducing nonpoint pollution, including fueling a boat and proper disposal of waste, oil, and trash.

<http://www.dnr.illinois.gov/safety/pages/boatingsafety.aspx>

Illinois-Indiana Sea Grant and the Northeast Illinois Invasive Plant Partnership have come together to form a **Clean Boats Crew**. This program stations members of the Clean Boats Crew at various public launches along Lake Michigan to engage recreational boaters in preventing the spread of invasive species and practicing good stewardship while on the Lake. This program is partially funded by the Illinois Coastal Management Program’s competitive grant program from October 1, 2013 through September 30, 2014 and has partnered with the Illinois Clean Marina Program to expand its reach.

5.3.14 Maintenance of Sewage Facilities Management Measure

This management measure specifies that pumpout facilities be maintained in operational condition and that their use be encouraged to reduce untreated sewage discharges to surface waters. Sewage collection facilities, including sewage pumpout stations and portable toilet dump stations, are required if the release of sewage into marina and surface waters is to be prevented. However, nonfunctioning sewage collection and disposal facilities present an obstacle to boaters whose holding tanks are full, and leave boaters with few choices for sewage disposal. An inoperable pumpout or dump station at one marina can create an excessive demand at stations in nearby marinas that are operating. Long lines at the pumpouts can discourage boaters from proper sewage management and tempt them to discharge illegally.

This management measure is applicable to marinas with sewage disposal facilities.

Examples of practices used in this management measure are provided in USEPA (2001) and IDNR (2013).

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to marinas where marine sewage disposal facilities exist. It is intended to promote proper maintenance of marine sewage disposal facilities.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **NPDES Storm Water Management Program (Clean Water Act, 33 USC 1342)**, created in an amendment to the Federal Clean Water Act, regulates stormwater discharge from construction sites, industrial facilities, and selected municipalities. IEPA is in charge of implementing the program and issuing general permits in Illinois. Most marinas and boatyards are considered Tier II industries, and are required to have a Storm Water Permit for Industrial Activities if they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage (**35 IAC 309**). Some marinas, such as those managed by the Chicago Parks District, may be covered by a MS4 permit. Under 35 IAC 309, marinas are also required to have a General Storm Water Permit for Construction Activity before beginning projects that will disturb one acre or more of land. Landowners need to submit an application called a Notice of Intent (NOI) to request coverage under these permits. As a condition of stormwater permits, each marina must develop a site-specific Stormwater Pollution Prevention Plan (SWPPP) and implement best management practices to ensure that stormwater leaving the marina property will not harm the surrounding water quality.

Under **Section 404 of the Clean Water Act**, the majority of marina development and expansion projects along the Great Lakes, including dredging, will require a joint permit from USACE, IDNR, and IEPA. Before a Section 404 permit can be issued, IEPA must certify that the proposed project is in compliance with the

state's water quality standards (**33 U.S.C. 1341**). For individual permits, certification occurs during the application review. In order for nationwide permits and other general permits issued by USACE to be valid in Illinois, IEPA must have already certified that the activities they permit will meet water quality standards. Applications that fail to meet water quality standards can be denied even if the proposed activity complies with all other Section 404 provisions.

Through **Illinois Water Quality Standards (35 IAC 302)**, IEPA protects the State's aquatic life, wildlife, secondary contact use and most industrial uses and ensure the aesthetic quality of the State's aquatic environment. Primary contact uses are protected for all general use waters whose physical configuration permits such use. Waters are to remain free of sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, and color or turbidity different than the natural water body; most of which can be avoided through flushing of waters.

The **Sewage Management Rule (77 IAC 800.1300)** requires marinas to provide pump-out stations wherever boats equipped with toilets are allowed to dock in recreational areas. Shoreside restrooms for both men and women are also required if marinas provide docking facilities for overnight sleeping. Restrooms must be located within 500 feet of recreational areas.

Education, Public Outreach, and Technical and Financial Assistance

The **Clean Vessel Act (CVA, 50 CFR 85)** provides grant funds to IDNR to distribute for the construction, renovation, operation, and maintenance of pumpout stations and waste reception facilities for recreational boaters and also for educational programs that inform boaters of the importance of proper disposal of their sewage. Under this act, marinas can receive up to \$12,500 in grant funding to install a pump-out system. In exchange for grant funding, marina owners agree to maintain pump-out systems in good operating condition for a minimum of 10 years and not to charge more than \$5 per pump-out. The pump-out system must be able to accept waste from portable toilets, as well as holding tanks, and must be available to the public during reasonable business hours.

IEPA's **Phase II MS4 stormwater program** requires permit holders to conduct public education and outreach on storm water impacts. This can include distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality. Permit holders are also required to provide opportunities for citizens to participate in program development and implementation, including effectively publicizing public hearings and/or encouraging citizen representatives on a stormwater management panel.

IEPA is responsible for carrying out the financial and technical assistance sections of the Clean Water Act. **Section 104(b)(3) of the CWA** provides financial assistance for training, surveys, studies, investigations, and demonstration projects to support water quality improvement, watershed planning and management, nonpoint source planning, wetlands protection, coastal and estuarine planning, treatment technologies, water efficiency, and environmental management systems. **Section 319(h) of the CWA** provides grant funds for projects that prevent, eliminate, or reduce water quality impairments caused by NPS pollution. Projects can be implementation of an approved watershed-based plan;

development of a watershed based plan or total maximum daily load (TMDL) implementation plan; best management practice (BMP) implementation; information and outreach; monitoring development and implementation TMDLs and watershed implementation plans; technical assistance demonstration of new technology and education and outreach.

On pages 62-68 of the **Illinois Clean Marina Program Guidebook**, in the Sewage Handling chapter, there are BMPs for pump-out facilities including testing the efficiency of the pump weekly and keeping extra nozzles in stock to replace broken ones.

Enforcement Mechanisms

The Water Quality Certification is part of regulatory approvals under the Joint Permit process, and is issued by the IEPA Bureau of Water. Additionally, IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302). State water quality standards also apply to sites smaller than one acre regardless of whether or not they are required to have an NPDES permit.

IEPA can assess civil penalties for illicit discharges of sewage to surface waters and violations of NPDES requirements. IEPA has the authority to issue citations or initiate enforcement actions for documented violations of the state water quality standards (under 35 IAC 302).

The Illinois Department of Public Health ensures marinas are following the Recreational Area Code, including the section on sewage management (77 IAC 800.1300) at boating facilities, through regular inspections.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.3.15 Boat Operation Management Measure

This management measure deals with ecological problems resulting from boating operations outside marinas. In shallow areas, intense boating activities may contribute to shoreline and lake bottom erosion. The management measure is designed to decrease turbidity and physical destruction of shallow-water habitat resulting from boating activities.

No wake zones, motorized craft restrictions, signage and buoys are practices used for protecting shallow-water habitats. Important aquatic vegetation should be protected from damage due to boat and personal watercraft propellers because of its ecological importance and value in preventing shoreline erosion. This management measure presents effective, easily implemented practices for protecting aquatic vegetation as well as shorelines. Motorized boat traffic (including personal watercraft) through shallow-water areas and in nearshore areas at wake-producing speeds can resuspend bottom sediment, uproot submerged aquatic vegetation, erode shorelines and increase turbidity. Turbid waters do not support submerged aquatic vegetation to the same depths as clear waters due to decreased sunlight penetration. Fish that locate prey primarily by sight are impaired at finding prey in turbid waters. Plant

leaves can become coated with fine sediment, and bottom-dwelling organisms are continually covered by resettling sediment. Uprooted aquatic vegetation can no longer provide habitat for fish and shellfish or food for waterfowl nor reduce wave energy at shorelines.

This management measure applies only to boating on non-marina surface waters where evidence indicates that boating activities are adversely affecting shallow-water habitats.

Applicability

The Illinois CNPCP addresses this management measure. This management measure applies to non-marina surface waters where evidence indicates that boating activities are impacting shallow-water habitats. It is intended to aid in the reduction of shallow-water habitat disturbances.

Existing Programs or Practices

Following is a list of programs and activities that are being implemented for this management measure. Details on each program which will be used to implement this measure are summarized in Table 5-2.

Regulatory

The **Boat Registration and Safety Act (625 ILCS 45, Article V)** requires boaters to obey posted restrictions, such as no wake zone or no entry. These restrictions allow for shallow-water habitats to not be subjected to increased turbidity or physical destruction from boat operations. It is also illegal under this Act to discharge sewage into state waterways. Required measures for preventing illegal discharge are outlined in the Federal Clean Water Act. Any vessel with an installed toilet must be equipped with a USCG-certified Type I, Type II, or Type III marine sanitation device (MSD). Vessels 65 feet and under may have any of the three types of MSDs. Vessels over 65 feet must have a Type II or III system. Additionally, Type I and Type II systems must display a certification label affixed by the manufacturer. This label is not required on Type III systems.

Education, Public Outreach, and Technical and Financial Assistance

The **IDNR Boating Education and Safety Program** provides a Boating Education Certificate of Competency to boaters that complete the course, either in person or online. This course is aimed at boaters under the age of 18, to prevent reckless driving of a motorized boat. Various course components relate to reducing nonpoint pollution, including fueling a boat and proper disposal of waste, oil, and trash.

(<http://www.dnr.illinois.gov/safety/pages/boatingsafety.aspx>)

Illinois Clean Marina Program Guidebook Clean Boater Tip Sheets provide marina operators with educational materials on best management practices for recreational boaters. The Illinois Clean Marina Program also provides a “Clean Boating Tip of the Week” on most Wednesdays via the program’s Facebook page.

Enforcement Mechanisms

Boating operation laws, including the Boater Registration and Safety Act, are enforced by marine police (IDNR, City of Chicago, other local law enforcement authorities). Violating this Act will result in monetary fines and the potential for suspension of watercraft operation privileges.

All programs used to implement this measure are listed in Table 5-2. This table summarizes the programs; authorizing legislation; program authority; lead agency enforcement mechanisms; and evaluation methods.

5.4 Coordination for Marina and Recreational Boating Source Pollution Prevention

Illinois' Clean Marina Program was formalized in 2013 by the IDNR. A guidebook has been published that includes proper nonpoint source pollution controls (IDNR 2013). The program encompasses all management measures necessary to implement effective nonpoint source pollution controls in marinas in the coastal zone, and it is essentially equivalent to management measures described in USEPA (2001). The guidebook contains the following sections:

- Siting and Design Considerations for New and Expanding Marinas
- Marina Maintenance and Operation
- Stormwater Management
- Vessel Maintenance and Repair
- Petroleum
- Sewage Handling
- Waste Containment and Disposal
- Safety and Emergency Preparedness
- Marina Management
- Laws and Regulations

The guidebook also contains informative Tip Sheets and appendices.

The Clean Marina Program is voluntary and incentive-based; the program encourages marina operators and recreational boaters to protect coastal water quality by engaging in environmentally sound operating and maintenance procedures. The Illinois Clean Marina Program offers information, guidance, and technical assistance to marina operators, local governments, and recreational boaters on Best Management Practices (BMPs) that can be used to prevent or reduce pollution. Marinas that participate in the Clean Marina Program are recognized for their environmental stewardship.

The lead agency for the Illinois Clean Marina Program is the Illinois Department of Natural Resources. This new program protects water quality, and the fish, plant, and wildlife that depend upon it. The Illinois Clean Marina Program provides marinas with a best practices guidebook, expands outreach and education and implements a formal certification and training process.

Under the Clean Marina Program, marinas voluntarily adopt sufficient best management practices and are certified by the State of Illinois to meet the environmental standards laid out by the Program. During the first year, one marina has been certified and five additional marinas have pledged to keep Illinois' waterways free of harmful chemicals, excess nutrients and debris and commit to actively pursue certification. Marinas are recertified after their first three years, and then every fifth year after that. Each year, the marina managers have to commit in writing that they are still following the program between recertification.

Other regulatory programs share responsibility among agencies. In Illinois, waterways, floodplains and wetlands construction projects often require both State and Federal authorization. The state has a joint permit application process designed to simplify the approval process for the applicant seeking project authorizations from the USACE, IDNR, the Office of Water Resources and IEPA. The joint permit review process allows these agencies to evaluate the suitability of a proposed marina site and/or expansion. Consideration of marina flushing in the siting and design of new and expanded marinas in the coastal zone is part of the joint agency review process.

Many ancillary federal, state and local agencies apply to marina development and provide the requisite assurance that management measures will be implemented.

- Federal Agencies: USACE, NOAA, USFWS, USCG
- State Agencies: IDNR, IEPA
- Local: MWRD, Cook and Lake Counties, municipalities

The Rivers and Harbors Appropriation Act of 1899, the oldest federal environmental law, prohibits the discharge of any material into navigable waters, or the excavation, filling, or altering of the course, condition, or capacity of any harbor or navigable channel without a permit. This Act is administered by the USACE through Illinois' joint permit program. Although many activities covered by the Rivers and Harbors Act are also regulated under the Water Pollution Control Act, the 1899 Act is independent.

The Clean Vessel Act Grant Program (CVA) provides grant funds to the states for the construction, renovation, operation, and maintenance of pumpout stations and waste reception facilities for recreational boaters, and, for educational programs that inform boaters of the importance of proper disposal of their sewage.

The Water Pollution Control Act, also known as the Clean Water Act, further regulates the discharge of dredge or fill materials into navigable waters, including wetlands. Nearly all marina development and expansion projects, including dredging or breakwater construction or repair, will require authorization under the Clean Water Act. USACE is the lead agency and administers permit decisions. USEPA enforces the Act, and further, has authorized the state to issue certifications under Section 401 for consistency with State water quality standards. This is also done through the joint permit program, as marina plans are reviewed by IEPA and as appropriate, Illinois' Section 401 Water Quality Certification can be issued to authorize marina projects.

IDNR also reviews projects under the joint permit program to see that the planned marina would not impair the navigability of the waterway, cause significant harm to the environment or cultural resources, or pose a hazard to life or property. The proposed marina's impact on other facilities is also evaluated.

The joint permit process also includes compliance with the Fish and Wildlife Coordination Act. This Act requires a U.S. Fish and Wildlife Service (USFWS) review of potential effects on fish and wildlife, including federally listed threatened and endangered species, from marina development projects. The act requires that adverse effects on fish and wildlife resources be identified and receive appropriate mitigation.

As part of the Phase II stormwater permitting program, IEPA coordinates with ICMP and other partners to provide training opportunities that may include planning principles, erosion control, and stormwater quality measures that can be utilized to address issues associated with the Watershed Protection Management Measure, Pollution Prevention Management Measure, and other management measures.

Public Act 96-26, the Green Infrastructure for Clean Water Act, directed the IEPA to assess and evaluate using green infrastructure to help manage stormwater in Illinois. The Illinois Green Infrastructure Grant Program for Stormwater Management (IGIG) was established in 2011 to assist local government and other organizations fund the implementation of green infrastructure BMPs for stormwater management that are designed to protect or improve water quality in CSO areas and MS4 areas in Illinois.

The IEPA conducts a wide variety of water quality monitoring programs which have sampled approximately 3,300 stream stations, many of which are in the coastal zone. At least 850 of these stations are sampled for biological, chemical and instream habitat data as well as stream flow. Water quality monitoring programs consist of a combination of fixed station networks and intensive or facility-related stream surveys in specific watersheds. The Agency's monitoring programs include:

- Ambient Water Quality Monitoring Network
- Pesticide Monitoring Subnetwork
- Facility-Related Stream Surveys
- Intensive River Basin Surveys
- Toxicity Testing Program
- Fish Contaminant Monitoring - Rivers and Streams
- Lake Michigan Sampling Program

The Voluntary Site Remediation Program provides persons or organizations seeking to perform investigative or remedial activities, on brownfield or other contaminated sites, the opportunity to receive review, technical assistance and no further remediation determinations from the IEPA. This program is designed to be flexible and responsive to the needs of the remediation applicants.

The IEPA Bureau of Water administers several grant programs through the authority of the federal Clean Water Act. One such grant program offers additional opportunities to coordinate with ICMP's NPS goals. Section 319 (h) provides funding for various projects that reduce nonpoint source water pollution. Funds

may be used to conduct assessments, develop and implement TMDLs and watershed management plans, provide technical assistance, demonstrate new technology and provide education and outreach.

The Technical Services Division of the Office of the State Fire Marshal serves to support other operating divisions within the agency as well as the fire service and regulated public with technical and engineering expertise on petroleum storage and other issues within their purview.

The Chicago Metropolitan Agency for Planning (CMAP) has a Local Technical Assistance (LTA) program that provides assistance to communities across the Chicago metropolitan region to undertake planning projects that advance the principles of GO TO 2040, the regional plan. CMAP has initiated 112 LTA projects with local governments, nonprofits, and intergovernmental organizations to address local issues at the intersection of transportation, land use, and housing, including the natural environment, economic growth, and community development.

Table 5-2 Management Measure Programs and Practices for Marina and Recreational Boating Sources

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
401 Water Quality Certification	Environmental Protection Act (415 ILCS 5/)	35 IAC 302.105 Section 401 of the CWA	IEPA	Issuance of Water Quality Certification. Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of 401 certifications	5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.9, 5.3.10

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Aboveground Fuel Storage and Dispensing Rules	Illinois Gasoline Storage Act (430 ILCS 15)	Rules for Aboveground Bulk Storage Tanks (41 IAC 160) Petroleum Dispensing and Fueling Rules (41 IAC 175.250) Rules for Aboveground Fuel Dispensing Storage Tanks (41 IAC 180)	OSFM	Issuance of and suspension of licenses, fines assessed for violations	Number of violations	5.3.6, 5.3.10, 5.3.11
Adopt-a-Beach			The Alliance for the Great Lakes	Voluntary	Amount of litter removed	5.3.8
Ambient Water Quality Monitoring	Federal Water Pollution Control Act	33 CFR 1251-1387	IEPA	Monitoring program	Section 305(b) and 303(d) water body assessment information	5.3.2

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Clean Boats Crew			IISG and NIIPP	Voluntary	Data on boaters understanding of laws collected by volunteers	5.3.13
Clean Water Act Public Education and Technical Assistance Programs	40 CFR 122 Sections 104(b)(3), 305(b), 319(h) of the CWA	415 ILCS 5/13, 13.3 and 27	IEPA	Voluntary		5.3.5, 5.3.6, 5.3.7, 5.3.8, 5.3.9, 5.3.10, 5.3.11, 5.3.12, 5.3.13, 5.3.14
Cost Assistance for Marina Sewage Improvement Program, and to Marina Owners for Pump-Out/Dump Stations and Educ. Programs	Clean Vessel Act		IDNR	Voluntary	Grant funds dispersed	5.3.7, 5.3.13, 5.3.14
General Solid Waste Management		35 IAC 807-810	Illinois Pollution Control Board	Issuance of cease and desist orders, orders requiring cleanup costs to be reimbursed and fines assessed	Number of violations	5.3.8

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Green Infrastructure Study	Public Act 96-26		IEPA	Resource	Number of green infrastructure projects completed in Coastal Zone	5.3.5
Hazardous Materials Management	Resource Conservation and Recovery Act (42 USC 6921-6939)	Hazardous Waste Management Rules 35 IAC 720-729	IEPA	Issuance of Permits. Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of permits issued	5.3.10
IDNR Boating Education and Safety Program			IDNR	Voluntary		5.3.13, 5.3.15
Illinois Clean Marinas Program			IDNR	Voluntary	Percentage of Illinois Coastal Zone marinas certified	5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.6, 5.3.7, 5.3.8, 5.3.9, 5.3.10, 5.3.11, 5.3.12, 5.3.13, 5.3.14, 5.3.15

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Illinois Water Quality Standards	Section 27 of the Environmental Protection Act [415 ILCS 5/13 and 27]	35 IAC 302	IEPA	Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of violations	5.3.1, 5.3.2, 5.3.3, 5.3.5, 5.3.7, 5.3.8, 5.3.9, 5.3.10, 5.3.11, 5.3.12, 5.3.13, 5.3.14
Illinois Vehicle Code	Boat Registration and Safety Act (625 ILCS 45/5)	17 IAC 2010	IDNR (or local marine police units)	Criminal penalties.		5.3.7, 5.3.15

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Joint Permit Program	Section 404 of the CWA Rivers and Harbors Act Federal Water Pollution Control Act Rivers, Lakes, and Streams Act (615 ILCS 5/) Interagency Wetland Policy Act Of 1989 (20 ILCS 830/) Fish and Wildlife Coordination Act (16 USC 661-664) Illinois Endangered Species Act (520 ILCS 10/)	33 CFR 322 33 CFR 1251-1387 17 IAC 3700 et al. 17 IAC 1010	Partnership of IDNR, IEPA, and USACE	Issuance of permits. Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of permits issued	5.3.1, 5.3.3, 5.3.4

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Lake Michigan and Chicago Lakefront Protection Ordinance		Chicago Municipal Code Chapter 16-4	City of Chicago, Chicago Plan Commission	Approval of projects, assessment of civil and/or criminal penalties	Number of projects approved	5.3.1, 5.3.4, 5.3.5, 5.3.6
Lake Michigan Monitoring Program	Federal Water Pollution Control Act	33 CFR 1251-1387	IEPA	Monitoring program	Section 305(b) and 303(d) water body assessment information	5.3.2
Marine Plastic Pollution	33 USC 1914-1915		IDNR and other law enforcement agencies	Violators will be ticketed	Number of violations	5.3.8
NPDES Stormwater Program	40 CFR 122.26	415 ILCS 5/13, 13.3 and 27	IEPA	Issuance of Permits. Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of permit violations	5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.6, 5.3.7, 5.3.8, 5.3.9, 5.3.10, 5.3.13, 5.3.14
Oil Spill Reporting and Response Rules	40 CFR 109.5	41 IAC 176.300-176.360	IEMA, U.S. Coast Guard	Failure to report any spill may result in substantial fines.	Annual amount spilled	5.3.11

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
OSFM Technical Assistance			OSFM	Voluntary		5.3.6, 5.3.11
Phase II MS4	33 CFR 1342 (p)(3)(B)	35 IAC 309	IEPA	Issuance of permits.	Number of public education events	5.3.7, 5.3.8, 5.3.9, 5.3.12, 5.3.14
Sewage Collection and Treatment Permits	Environmental Protection Act [415 ILCS 5/] Federal Water Pollution Control Act (33 USC 1251 et seq.)	35 IAC 300-399	IEPA	Issuance of Permits. Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of permits issued	5.3.11, 5.3.12
Sewage Management	Campground Licensing and Recreational Area Act (210 ILCS 95/)	Recreational Area Code (77 IAC 800.1300)	Illinois Department of Public Health	Suspend or revoke permits or licenses, order emergency closures.	Number of violations	5.3.7, 5.3.14
Spill Contingency Planning and Emergency Response	Illinois Environmental Protection Act, as amended (415 ILCS 5/)	35 IAC 750	IEPA	Issuance of cease and desist orders, orders requiring remediation, administrative penalties, criminal penalties, civil penalties.	Number of spills	5.3.7, 5.3.8

Program or Practice	Authorizing Legislation	Program Authority	Lead Implementing Agency	Enforcement Mechanism(s)	Evaluation Method(s)	Management Measures
Voluntary Site Remediation Program			IEPA	Voluntary		5.3.11