STATE OF ILLINOIS

COASTAL NONPOINT POLLUTION

CONTROL PROGRAM

DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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ABSTRACT

This draft programmatic environmental assessment is prepared pursuant to the National Environmental Policy Act, 42 United States Code (U.S.C.) 4321 *et seq.*, to analyze the environmental impacts that would be associated with a federal approval decision and implementation of the Coastal Nonpoint Pollution Control Program (coastal nonpoint program) submitted to the National Oceanic and Atmospheric Administration (NOAA) and U.S. Environmental Protection Agency (EPA) by the State of Illinois. Section 6217 of the Coastal Zone Act Reauthorization Amendments, 16 U.S.C. 1455b, requires states and territories with coastal zone management programs approved under the Coastal Zone Management Act to develop and implement coastal nonpoint programs.

In this draft programmatic environmental assessment (PEA), the proposed action is the review of the Illinois coastal nonpoint program to determine whether the program satisfies the statutory mandates of section 6217 and provides for implementation of management measures that are consistent with guidance established by EPA (in consultation with NOAA and other federal agencies) to protect coastal waters from nonpoint source pollution. Illinois' coastal nonpoint program includes management measures for urban, marinas and recreational boating, and hydromodification nonpoint source categories, and for wetlands, riparian areas, and vegetated treatment systems. The program would be implemented in the Illinois coastal nonpoint management area, which has the same boundaries as the Illinois coastal zone. NOAA and EPA jointly reviewed the proposed Illinois coastal nonpoint program and find the program meets many, but not all, of the requirements of section 6217 and related subsequent agency guidance. Therefore, NOAA and EPA's preferred alternative is to approve the program with conditions. This draft PEA describes the conditions Illinois would need to meet to receive full approval of its coastal nonpoint program.

In addition to the preferred alternative, NOAA and EPA considered three additional alternatives: full approval (approval with no conditions), disapproval (issuing a finding that Illinois failed to submit an approvable program), and no action (not making any decision and maintaining the status quo). A 1996 Programmatic Environmental Impact Statement for the Coastal Nonpoint Pollution Control Program concluded that approval of state and territorial coastal nonpoint source programs would have beneficial effects, but no significant environmental impacts. Here, NOAA and EPA find the conditional approval of the Illinois coastal nonpoint program will not result in any significant environmental impacts different from those analyzed in the 1996 document.

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ACRONYMS

BMP	Best Management Practice
CAWS	Chicago Area Waterway System
CFR	Code of Federal Regulations
CMAP	Chicago Metropolitan Agency for Planning
CSO	Combined Sewer Overflow
CWA	Clean Water Act
CZARA	Coastal Zone Act Reauthorization Amendments
CZMA	Coastal Zone Management Act
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FY	Fiscal Year
GDP	Gross Domestic Product
GLRI	Great Lakes Restoration Initiative
HUC12	12-digit Hydrologic Unit Code
IAC	Illinois Administrative Code
ICMP	Illinois Coastal Management Program
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
INSMP	Illinois Nonpoint Source Management Program
ISWS	Illinois State Water Survey
LAMP	Lakewide Action and Management Plan
MMPA	Marine Mammal Protection Act
MS4	Municipal Separate Storm Sewer System
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
NRHP	National Register of Historic Places
OSDS	Onsite Disposal Systems
PEA	Programmatic Environmental Assessment
PEIS	Programmatic Environmental Impact Statement
STICS	Spatial Trends in Coastal Socioeconomics
TARP	Tunnel and Reservoir Project
TMDL	Total Maximum Daily Load
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WDO	Watershed Development Ordinance
WMO	Watershed Management Ordinance

SUMMARY

This draft programmatic environmental assessment (PEA) analyzes the environmental impacts that would be associated with an approval decision by the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) and implementation of the proposed coastal nonpoint pollution control program (coastal nonpoint program) submitted by the State of Illinois. Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA), 16 United States Code §1455b, requires states and territories with coastal zone management programs approved under the Coastal Zone Management Act (CZMA) to develop and implement coastal nonpoint programs. Once approved, these programs are implemented through changes to the state nonpoint source program approved by EPA under section 319 of the Clean Water Act (CWA), changes to the coastal zone management program approved by NOAA under the CZMA, and other programs, carried out in Illinois by the Illinois Department of Natural Resources, Illinois Environmental Protection Agency, and other partners.

The State of Illinois proposes to implement a coastal nonpoint program throughout Illinois' coastal zone, within both the Lakeshore Boundary (encompassing approximately 85 square miles of land in the Lake Michigan watershed) and the Inland Waterway Corridors (approximately 11.5 square miles of land and water along selected segments of the Chicago Area Waterway System connected to Lake Michigan via locks). See Figure 1 for a map of the Illinois coastal zone. The proposed boundary of the coastal nonpoint management area is sufficient to control the land and water uses that have or are reasonably expected to have a significant impact on the waters along Illinois' Lake Michigan coast and is the same as the Illinois Coastal Management Program boundary. The coastal nonpoint program would include management measures for urban, marinas and recreational boating, and hydromodification nonpoint source categories and for wetlands, riparian areas, and vegetated treatment systems. However, the forestry and agriculture nonpoint source categories would be excluded from the program.

Based on a joint review of the proposed program, NOAA and EPA's preferred alternative is to approve the coastal nonpoint program submitted by the State of Illinois pursuant to section 6217 of CZARA, subject to certain conditions set forth in this document. In addition to the preferred alternative (i.e., conditional approval), NOAA and EPA considered three additional alternatives: full approval, disapproval, and no action (not making a decision at this time and maintaining the status quo). Proposed Findings provide the rationale for the agencies' decision to approve, with conditions, the Illinois coastal nonpoint program. The Proposed Findings, published separately, indicate that the Illinois coastal nonpoint program meets many, but not all, of the requirements of section 6217 (and related subsequent agency guidance) and identify the conditions Illinois would have to meet to receive full approval of its program. The proposed findings and conditions are also discussed in this document.

In this draft PEA, NOAA and EPA further find that the conditional approval of the Illinois coastal nonpoint program will not result in any significant environmental impacts different from those analyzed in the 1996 Programmatic Environmental Impact Statement for the Coastal Nonpoint Pollution Control Program. Conditional approval would have a beneficial effect on the environment by allowing Illinois to continue to receive, on an interim basis, its full share of available CZMA (section 306) and CWA (section 319) funds, which support a wide range of coastal management objectives and efforts to reduce nonpoint pollution. Program implementation would have minor beneficial effects on the physical and biological environment and minor socioeconomic costs and benefits. Most of these costs and benefits would be sustained regardless of the NOAA-EPA approval decision because the elements of the coastal nonpoint program are already operating in Illinois and will continue to do so, as resources permit.

1.0 OVERVIEW

1.1 Background

In 1990, Congress enacted the Coastal Zone Act Reauthorization Amendments (CZARA). Section 6217, titled "Protecting Coastal Waters," is designed to help address the problem of nonpoint source pollution (also called nonpoint pollution) and its effect on coastal waters. Nonpoint source pollution is differentiated from point source pollution, which is from a discrete conveyance. Nonpoint source pollution comes primarily from land use or land management activities that contribute to ground and surface water pollution as a result of runoff, precipitation, atmospheric deposition, drainage, seepage, percolation, or hydrologic modification (differentiated from hydromodification, which refers specifically to modifications of streamflow) (EPA 2012). The purpose of section 6217 is to strengthen the links between the federal government and state and territorial (hereafter, state) coastal zone management and water quality programs, in order to enhance state and local efforts to manage land use activities that degrade coastal water and habitats. The section requires states with federally-approved coastal management programs to develop coastal nonpoint pollution control programs (coastal nonpoint programs) and submit them to the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) for approval. Once approved, these programs will be implemented through changes to the state nonpoint pollution program approved by EPA under section 319 of the Clean Water Act (CWA) and the state coastal zone management program approved by NOAA under the Coastal Zone Management Act (CZMA), as well as other water quality-related state and local programs.

Section 6217 utilizes a two-tiered management approach for the control of nonpoint sources of pollution. The purpose of the first tier is to protect coastal waters. It requires that states implement, at a minimum, management measures in conformity with guidance (known as the §6217 (g) guidance, or management measure guidance) that was developed by EPA in 1993, in consultation with NOAA and other federal agencies. The management measures outlined by EPA address the nonpoint pollution source categories of urban runoff, agricultural runoff, forestry runoff, hydromodification, and marinas and recreational boating. Management measures must also be implemented for wetlands protection, riparian areas, and vegetated treatment systems. If the first tier of management measures is not sufficient to achieve water quality standards once implemented, states are required to have processes in place to identify and develop additional management measures, as necessary, to meet water quality standards and protect designated uses (EPA 1993).

Coastal nonpoint programs are fully approved after a joint NOAA-EPA review if they meet all of the requirements of section 6217 (as specified in the statute) and those specified in the guidance documents for the program. In the past, if the coastal nonpoint program a state initially submitted met many, but not all, of the requirements, NOAA and EPA exercised their discretion to approve the program with conditions. Most coastal nonpoint programs were subsequently fully approved, after the state demonstrated that all necessary program elements, including enforceable policies and mechanisms, were in place. However, the fact that NOAA and EPA have conditionally approved a coastal nonpoint program does not guarantee the

program will later be granted full approval. NOAA and EPA also have the discretion to find that a state has failed to submit an approvable program.

In March 1996, NOAA published a Programmatic Environmental Impact Statement (PEIS) that assessed the environmental impacts associated with the approval of state coastal nonpoint programs. In the PEIS, NOAA concluded that the approval and conditional approval of coastal nonpoint programs would have an overall beneficial effect on the environment. The PEIS noted that there might be some slight and localized positive and negative socioeconomic effects associated with management measure implementation and behavior changes to reduce nonpoint sources of water pollution, but adverse environmental impacts would not be significant (NOAA 1996).

After preparing a programmatic NEPA document, such as a PEIS, federal agencies may "tier" from the programmatic analysis to a narrower analysis of a specific project, policy, or program (pursuant to 40 C.F.R. §§ 1502.20 and 1508.28). Tiering subsequent narrower analyses from a programmatic NEPA analysis can eliminate repetitive discussions of the same issues, allowing a tiered document to focus on the characteristics and issues ripe for discussion at that stage of the environmental review process. This draft PEA is tiered off the 1996 PEIS for the Coastal Nonpoint Pollution Control Program and focuses on information specific to Illinois, following the model established in past years (state-specific assessments of the impacts of approving individual programs, tiered off the PEIS). Descriptions and analyses presented in the PEIS that apply to all coastal nonpoint programs are incorporated by reference into this draft PEA.

In December 2011, NOAA issued a final environmental impact statement (FEIS) on the Illinois Coastal Management Program (ICMP), which was submitted for approval under the CZMA. Much of the information in the Illinois FEIS is relevant to this analysis because the state's section 6217 coastal nonpoint program is to be implemented through ICMP (as well as its CWA section 319 program and other state and local water quality related programs). In addition, both programs share the same boundaries, as discussed below. Therefore, the Illinois FEIS is incorporated by reference into this draft PEA (NOAA and IDNR 2011). NOAA drafted this tiered PEA to assess the environmental impacts that would be associated with the approval and implementation of the coastal nonpoint program submitted to NOAA and EPA by the State of Illinois. The analysis in this draft PEA also serves to evaluate whether there are new significant impacts that would be associated with the approval decision for the Illinois program that differ from those analyzed in the 1996 PEIS for the Coastal Nonpoint Pollution Control Program and whether to require the preparation of an environmental impact statement.

1.2 Purpose and Need for Action

The purpose of action on the part of NOAA and EPA is to support development and implementation of an approvable coastal nonpoint program in Illinois, pursuant to section 6217 of CZARA, which adequately establishes management measures for nonpoint source pollution to restore and protect coastal waters of Illinois. NOAA and EPA recognize that Illinois has invested substantial time and effort to satisfy the statutory mandates of section 6217 of CZARA

and develop its proposed coastal nonpoint program, which it submitted to NOAA and EPA in 2014.

The need for action stems from the need to comply with section 6217 of CZARA and address water quality problems in the Illinois coastal nonpoint management area, working in close conjunction with Federal, State, and local authorities. Coastal water bodies in Illinois include Lake Michigan and its harbors; seven inland lakes, ponds, and lagoons within the coastal zone; and all rivers, creeks, channels, and canals that pass through the coastal zone. The 2014 "Illinois Integrated Water Quality Report," prepared pursuant to the Clean Water Act, reveals that almost all the water bodies in the coastal zone are considered impaired for at least some uses, according to section 8.1 of "Illinois Coastal Nonpoint Pollution Control Program" (IDNR and IEPA 2014). For example, the entire Lake Michigan shoreline is impaired for fish consumption and almost all the beaches are impaired for primary contact (impaired means at least one designated use is not fully supported). The primary contact impairments resulted from bacterial contamination due to combined sewer overflows (CSOs), storm sewers, urban runoff, and, in many cases, unknown sources.

Information about water quality impairment in Illinois may be found in multiple sources, including the 2013 reports in which EPA approved Total Maximum Daily Loads (TMDLs) and Implementation Plans for bacterial contamination along Illinois' Lake Michigan beaches (see http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/reports/index#lake-michigan-beaches) and the Illinois Integrated Water Quality Report and Section 303(d) List for 2016 (IEPA 2016a). The TMDL reports set numeric water quality targets and assessed the sources of bacterial contamination, revealing a strong link between elevated bacterial levels and precipitation, suggesting a link to stormwater. All the rivers, that are part of the Chicago Area Waterway System, have been impaired for aquatic life (and some for other uses, as well) from sources that include nonpoint source pollution. For more information, see section 8.1 of "Illinois Coastal Nonpoint Pollution Control Program" (IDNR and IEPA 2014) and the "Illinois Integrated Water Quality Reports" (IEPA 2014a, 2016a).

2.0 DESCRIPTION OF ALTERNATIVES

For the purposes of this draft programmatic environmental assessment, the proposed action is the review of the Illinois coastal nonpoint program to determine whether the program satisfies the statutory mandates of section 6217 and provides for implementation of management measures that are consistent with guidance established by EPA (in consultation with NOAA and other federal agencies) to protect coastal waters from nonpoint source pollution. NOAA and EPA have analyzed the four reasonable alternatives in their decision tool box. The alternatives range from not making any decision and maintaining the status quo (i.e., "No Action" Alternative) to full approval of the Illinois coastal nonpoint program (i.e., "Full Approval" Alternative). Since Illinois' program meets many, but not all, of the requirements of section 6217 and related subsequent agency guidance, the preferred alternative is to approve the program with conditions (i.e., "Conditional Approval" Alternative). Each alternative is described with greater detail in this section.

2.1 Full Approval of the Illinois Coastal Nonpoint Pollution Control Program

To assist a state in the development of a Coastal Nonpoint Pollution Control Program under Section 6217 of CZARA, NOAA and EPA jointly published a "Program Development and Approval Guidance" document (NOAA and EPA 1993). CZARA requires NOAA and EPA to fully approve a coastal nonpoint program submitted by a state if all of the requirements of section 6217 and related, published guidance documents are met. Specifically, the coastal nonpoint pollution control program must contain the following components:

- Coordination with existing state programs
- Determination of Illinois' 6217 management area
- Determination of critical coastal areas
- Implementation of management measures in conformity with §6217 (g) guidance
- Identification and implementation of additional management measures
- Technical assistance
- Public participation
- Administrative coordination
- Identification of enforceable policies and mechanisms

Full approval of the Illinois coastal nonpoint program would be expected to have, overall, minor, beneficial effects on the environment for a few reasons. First, fully approving the program would allow the funding provided by EPA under section 319 of the CWA and by NOAA under section 306 of the CZMA to continue at current levels. These funding sources both help support efforts to reduce sources of nonpoint pollutants, including sediment, nutrients, pesticides, and metals, and keep them from reaching the state's coastal waters. The funds that Illinois receives under section 319 of the CWA support nonpoint pollution management activities statewide, and CZMA section 306 funds support coastal zone management initiatives within Illinois' coastal zone. Congress has not appropriated any Coastal Nonpoint Program funding since Fiscal Year (FY) 2009 and is not expected to do so in the foreseeable future, so full approval would not be expected to increase the amount of federal funding available to Illinois for initiatives to address coastal nonpoint pollution.[1]

Any administrative costs related to implementation of the Illinois coastal nonpoint program would not be significant because NOAA and EPA would be fully approving a program consisting entirely of existing state and local mandates and initiatives, and the state and its partners are not expected to bear any new or increased costs for successful implementation. Continued implementation of the components of the proposed program that reduce the volume of nonpoint pollution reaching coastal waters will have minor benefits to the physical, biological, and socioeconomic environments. To the extent people might need to make minor modifications to their behavior to conform to management measures, these adjustments should already be

[1] From FY92-FY00, Congress appropriated funding for states to develop their Coastal Nonpoint Pollution Control Programs. Between FY01 and FY06 and in FY08 and FY09, Congress appropriated funds for program implementation. States with approved programs (with and without conditions) received these implementation funds to implement approved portions of their programs. States with fully approved programs received more funding than programs with only conditional approval. Since Congress has not appropriated funding for the program in seven years, future appropriations are unlikely.

underway because NOAA and EPA would be approving measures that have already been adopted, not new policies. Also, approval of the nonpoint program would make existing programs more effective by strengthening the link between federal and Illinois coastal zone management and water quality programs. More effective programs would generate additional minor benefits to the physical, biological and socioeconomic environments related to reduced nonpoint sources of pollution, improved water quality, and enhanced recreational opportunities. The environmental benefits associated with the possible approval decisions are discussed in detail in section 4.2.

In reviewing the Illinois program, NOAA and EPA found that the program meets many, but does not meet all, of the requirements of section 6217, as explained below. (See the Proposed Findings for the comments NOAA and EPA developed about some of Illinois' proposed management measures and how the state addresses the nine required program components.) Therefore, full approval of the Illinois coastal nonpoint program is not a feasible alternative at this time. The rationale for this decision is discussed in the next subsection, under the conditional approval alternative. As described below, conditional approval is expected to have many of the same environmental benefits as the full approval alternative, at least on an interim basis.

2.2 Conditional Approval of the Illinois Coastal Nonpoint Pollution Control Program (Preferred Alternative)

While NOAA and EPA expect that a state coastal nonpoint program submitted for approval will meet all of the requirements of section 6217, experience shows that changes may be required before full approval can be granted. In these situations, NOAA and EPA may, in accordance with the "Program Development and Approval Guidance" (NOAA and EPA 1993), grant conditional approval in order to provide the state or territory with additional time to:

(1) address identified gaps in the management measures, including obtaining new statutory or regulatory authority, if necessary;
(2) demonstrate that existing authorities are adequate for ensuring implementation of the management measures; and/or
(3) develop incomplete coastal nonpoint pollution control program components.

Under this alternative, NOAA and EPA may provide a specified amount of time from the date of conditional approval for a state to submit a fully approvable coastal nonpoint pollution control program. The length of the conditional approval depends upon which program components are subject to conditions and how long it will take to finalize those components. Factors that NOAA and EPA consider as part of deciding whether a proposed coastal nonpoint program is eligible for conditional approval are listed in the "Program Development and Approval Guidance" (NOAA and EPA 1993). During the conditional approval period, the funding available to states under section 319 of the Clean Water Act and section 306 of the Coastal Zone Management Act is not affected.

Conditional approval would have minor, beneficial effects on the physical, biological, and socioeconomic environments, similar to those outlined under the full approval alternative.

The programs, authorities and enforcement mechanisms that NOAA and EPA propose to conditionally approve are already in place in the coastal nonpoint management area. Conditional approval would allow Illinois to avoid, at least on an interim basis, the adverse impacts associated with disapproval (a 30% reduction in both CWA section 319 and CZMA section 306 funding). Because Congress has not appropriated any Coastal Nonpoint Pollution Control Program funding since FY2009 and is not expected to do so in the foreseeable future, conditional approval is unlikely to increase the amount of federal funding available to Illinois for implementation of its coastal nonpoint program.

There are also socioeconomic costs and physical, biological, and socioeconomic benefits of continued implementation of the individual policies and programs that together make up the coastal nonpoint program, but these costs and benefits would not be significant. While there are some economic costs to implementing programs that support management measures, state agencies, county governments, and other entities that bear these costs have already found cost-effective ways to do so. Local residents, recreational users, and businesses may need to make minor modifications to their behavior or short-term uses of the environment as part of management measure implementation, but any required modifications should already have been made to the extent they are related to management measures in place that NOAA and EPA consider fully satisfied. Continued implementation of the policies and programs that implement management measures will reduce nonpoint sources of pollution, enhance water quality, and benefit the physical and biological environment in coastal Illinois. These improvements to coastal waters will create socioeconomic benefits by enhancing the recreational value of coastal areas to a large number of residents and visitors who engage in water-related recreational activities. In addition, the water quality improvements will improve habitat conditions for diverse aquatic species, including some fish species sought out by anglers.

To the extent that new initiatives to meet conditions established by NOAA and EPA for full program approval are undertaken by Illinois, there would be beneficial impacts to the physical and biological environment and possible slight administrative costs, but these impacts are not projected to be significant, as explained in the Environmental Consequences section of the draft PEA. In short, efforts to meet the conditions would be expected to give Illinois improved control of sources of nonpoint pollution, resulting in reduced pollutant levels entering coastal waters, improved water quality, and enhanced coastal habitat. There might also be some slight and localized socioeconomic costs and benefits associated with strengthening Illinois' program in certain areas to meet all CZARA requirements and achieve full program approval, such as costs associated with implementing any new programs, policies or restrictions associated with new or strengthened programs and policies the state may adopt in the future. While there could be slight administrative cost increases or costs associated with curtailing certain behaviors arising from Illinois' efforts to meet the conditions established by NOAA and EPA, the short-term costs would bring about long-term benefits. Also, conditional approval would preserve funding at current levels (at least temporarily), and any changes to the program to enable it to be fully approved would likely bring about improvements to coastal water quality and enhancements to the aesthetic value of coastal areas, thereby benefiting tourism and coastal recreation (enhancing opportunities for boating, swimming, fishing, and other water-related activities).

Based on the joint review of the proposed program, the preferred alternative of NOAA and EPA is to approve the coastal nonpoint program submitted by the State of Illinois pursuant to section 6217 of CZARA, subject to certain conditions set forth below. Conditional approval of Illinois' coastal nonpoint program acknowledges that the State has a sufficient program in place to receive approval but still needs to strengthen some components to fully satisfy all CZARA management measure requirements. Because NOAA and EPA have not found that Illinois has failed to submit an approvable program, conditional approval does not adversely impact federal funds available to Illinois under section 319 of the CWA and under section 306 of the CZMA. The rationale for each condition is outlined below and discussed in greater detail in the Environmental Consequences section of this draft PEA. NOAA and EPA are separately publishing a stand-alone document summarizing their findings, the rationale for the findings, and conditions that Illinois will need to meet to receive full approval of its program. The timeframes associated with conditions will be effective on the date of the approval letter associated with the findings.

(1) *Urban Runoff – Operating Onsite Disposal Systems (OSDS)*

NOAA and EPA do not have sufficient information to accept Illinois' proposed exclusion from the operating OSDS management measure at this time. Illinois' coastal nonpoint management area is nearly completely sewered. However, information is still needed from the state on the number of existing OSDS in the coastal nonpoint management area and the operational integrity of these OSDS. Although records indicate the number may be approximately 400 OSDS, Illinois has not been able to explain its methodology to confirm this number or to determine the condition of these systems. Illinois has the option to demonstrate that there will be no significant impacts to its coastal waters from OSDS, or to describe its strategy (or Lake County's strategy) for ensuring that these systems will be inspected, operated, and maintained to prevent the discharge of pollutants. If NOAA and EPA determine that Illinois' existing OSDS do not qualify for an exclusion and the state must demonstrate conformity with the operating OSDS management measure, Illinois will not need to meet the third element of this measure (to consider replacing or upgrading OSDS to treat influent so that total nitrogen loadings in the effluent are reduced by 50 percent) because Lake Michigan is not nitrogen-limited. That is, nitrogen loadings contributed by Illinois' OSDS do not degrade water quality in Lake Michigan.

In order to receive full approval, the program must meet the following condition:

- Within three years, Illinois shall either demonstrate that it has programs in place to meet the operating OSDS management measure, as described below, or provide sufficient justification to support an exclusion of the operating OSDS management measure from its coastal nonpoint program. An exclusion justification shall include more definitive information on the number of systems within the coastal nonpoint management area, as well as information on the status of these systems, so that NOAA and EPA can determine whether the state would be eligible for an exclusion of the operating OSDS management measure. NOAA and EPA would require information sufficient to determine whether the state or the counties have identified the extent to which these systems are being operated and maintained to prevent water quality problems or public health risks. If Illinois does not pursue an exclusion request for the operating

OSDS measure, or if NOAA and the EPA deny this request, Illinois shall then need to demonstrate that State or local programs, enforceable policies, and mechanisms are in place in order to: (1) establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants; and (2) inspect OSDS at a frequency adequate to ascertain whether OSDS are failing.

(2) *Urban Runoff – Pollution Prevention*

Illinois has several education efforts underway to implement portions of this management measure. Also, some of the pollutant sources originally included under this measure (discharge of pollutants into storm drains and pollutants from commercial activities such as parking lots and gas stations) are regulated through National Pollutant Discharge Elimination System (NPDES) Phase I and II stormwater permitting requirements. Potential pollution from improper operation and maintenance of OSDS is addressed under the operating OSDS measure. Illinois has demonstrated that it has programs in place across its coastal nonpoint management area to reduce pollutants generated from household hazardous chemicals. IEPA coordinates ongoing comprehensive household hazardous waste collections in Lake and Cook Counties and statewide. However, Illinois has not yet demonstrated that it has programs in place across its coastal nonpoint management area to reduce pollutants generated from improper disposal of pet excrement; lawn and garden activities; and turf management on golf courses, parks, and recreational areas. The state has only identified a program in Chicago for the management of lawn and garden waste and should demonstrate, however, how state or county programs reduce pollutants generated from lawn and garden activities outside Chicago. Illinois has provided information on ordinances related to pet waste disposal in a few communities in the coastal nonpoint management area, but it has not yet described how compliance is encouraged in these jurisdictions or how pet waste is managed in the other localities in the coastal nonpoint management area.

In order to receive full approval, the program must meet the following conditions:

- Within three years, Illinois shall demonstrate that it has programs in place across the coastal nonpoint management area to reduce pollutants generated from improper disposal of pet excrement and turf management on golf courses, parks, and recreational areas. Within three years, Illinois shall demonstrate that it has programs in place across the coastal nonpoint management area, but outside the jurisdiction of Chicago, to reduce pollutants generated from lawn and garden activities.

(3) *Urban Runoff – Planning, Siting and Developing Roads and Highways and Siting, Designing and Maintaining Bridges*

The Cook County Watershed Management Ordinance (WMO) and Lake County Watershed Development Ordinance (WDO) provide programs, policies, and enforcement mechanisms to implement the planning, siting and developing roads and highways management measure for local roads, but not for state roads. Similarly, these ordinances implement the siting, designing and maintaining bridges management measure for local bridges, but not for state bridges.

In order to receive full approval, the program must meet the following conditions:

- Within three years, Illinois shall demonstrate that it has programs, enforceable policies, and mechanisms in place across the coastal nonpoint management area to implement: (1) the management measure for planning, siting, and developing roads and highways with regard to state roads; and (2) the management measure for siting, designing, and maintaining bridges management measure with regard to state-owned or operated bridges.

(4) *Marinas – Marina Siting and Design*

Illinois has the necessary authority to prevent nonpoint source pollution and require implementation of the following management measures: (1) marina flushing; (2) water quality assessment; (3) habitat assessment; (4) shoreline stabilization; and (5) stormwater runoff. Illinois has provided a description of the regulatory programs the state will use to require implementation of these measures. Illinois has provided a description of the regulatory programs the state will use to require implementation of these measures. Illinois has described programs that may be in conformity with the management measure for (6) fueling station design. However, Illinois has not yet demonstrated how it will require proper siting and design of fueling stations in the site planning phase. The state has not yet described programs in conformity with the management measure for (7) vessel sewage facility management, particularly the elements of the measure requiring ease of access and signage promoting the use of pumpout facilities, dump stations, and restrooms. In addition, the state has not yet described how it promotes the siting of sewage facilities as part of a marina development plan to ensure they are designed to adequately handle expected use and to provide ease of access to minimize the risk of releasing sewage to surface waters.

In order to receive full approval, the program must meet the following conditions:

- Within three years, Illinois shall (1) demonstrate how its proposed programs will provide for siting and design of fueling stations in ways to effectively contain potential spills. The state shall also (2) identify how it will address ease of access and signage for vessel sewage facility management. The state shall (3) demonstrate how it promotes proper siting of vessel sewage facilities as part of a marina development plan to ensure facilities are designed to adequately handle expected use and to provide ease of access to minimize the risk of releasing vessel sewage to surface waters.

(5) *Hydromodification*

Illinois' program includes management measures, enforceable policies, and mechanisms in conformity with the applicable §6217 (g) guidance for hydromodification measures, with two exceptions. Illinois has provided sufficient justification to support a categorical exclusion of the management measure for protection of surface water quality and instream and riparian habitat for dams. NOAA and the EPA do not require Illinois' program to meet management measures for erosion and sediment control for dams and chemical and pollutant control for dams since NPDES permits for discharges associated with construction activity apply to these sources of pollution.

Illinois' proposed program does not include management measures for: 1) improving surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels; and 2) developing a process to identify where shoreline erosion is a nonpoint source pollution problem and stabilize the streambanks or shorelines. Illinois has not adequately described the monitoring and tracking methods it will use as part of its voluntary approach to meet these two requirements.

In order to receive full approval, the program must meet the following conditions:

● Within three years, Illinois: (1) shall develop a process to improve surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels; and (2) shall develop a process to fully address the streambank and shoreline erosion management measure. The state shall show it has an operation and maintenance program with specific timetables for existing modified channels that includes identification of opportunities to restore instream and riparian habitat in those channels and shall demonstrate that it has programs or processes in place to stabilize eroding streambanks and shorelines.

(6) *Additional Management Measures*

Illinois has developed a process for selecting and implementing additional management measures. The state has already begun implementing many programs and regulations to manage nonpoint source pollution that reaches the state's portion of Lake Michigan. Numerous monitoring programs, which include both data collection and data analysis, are in place to determine water quality conditions in Illinois. As deficiencies are identified, the State of Illinois has robust mechanisms for determining additional steps which need to be taken to address shortcomings. However, these monitoring efforts do not appear to measure effectiveness of the coastal nonpoint program's management measures. Since more than 40 percent of the impairments to coastal waters are a result of unidentified sources, Illinois' process for selecting and implementing additional management measures lacks sufficient data to adequately assess the need for additional management measures. In short, Illinois has not yet described how it will use monitoring and assessment information to determine which additional management measures will be considered and, if required, developed and implemented.

In order to receive full approval, the program must meet the following conditions:

● Within three years, Illinois shall demonstrate it has a monitoring framework in place to measure effectiveness of the coastal nonpoint program's management measures, as well as to document and assess sources of impairment that are currently unidentified. At that time, the state shall also identify any additional management measures which would be needed to attain and maintain water quality standards and, if required, a strategy to meet these additional measures.

(7) *Monitoring*

Illinois' monitoring approach does not demonstrate the ability to assess over time the success of the management measures in reducing pollutant loads and improving water quality.

While Illinois has produced a comprehensive list and description of monitoring activities and trackable measures for most categories of nonpoint source pollution in EPA's §6217 (g) guidance, Illinois has not yet described how it is monitoring improvements in water quality and how the specific monitoring activities will be linked to implementation of management measures and changes in water quality over time.

In order to receive full approval, the program must meet the following conditions:

- Within three years, Illinois shall develop an approach that enables the state to assess over time the extent to which implementation of management measures is reducing pollution loads and improving water quality. Illinois shall have a framework in place that will track the implementation of required management measures in relationship to the scheduled monitoring activities.

Further, NOAA and EPA recommend that Illinois provide a description of how data from monitoring/assessment activities will be integrated and analyzed to assess changes over time in (1) pollution loads and (2) water quality. Illinois' most recent Water Monitoring Strategy (which fulfills monitoring strategy requirements under the Clean Water Act and associated regulations) should be modified to provide the necessary foundation to evaluate the performance and effectiveness of the §6217(g) management measures and to determine if additional management measures are needed. NOAA and the EPA encourage the state to proceed with developing a monitoring and tracking strategy to meet the CZARA program monitoring requirement.

2.3 Disapproval of the Illinois Coastal Nonpoint Pollution Control Program

Although section 6217 requires states to develop and implement coastal nonpoint programs, full approval of the programs is not assured until NOAA and EPA find that all the requirements of section 6217 have been met. Section 6217 also provides for the possibility of NOAA and EPA finding that a state has failed to submit an approvable program, which is in effect disapproving the coastal nonpoint program. Issuing a finding that Illinois failed to submit an approvable program would necessitate reliance on existing nonpoint pollution control efforts and the imposition of financial penalties on both the state's coastal zone management program under Section 306 of the CZMA and the state's nonpoint source pollution program under section 319 of the CWA. Penalties are stipulated in section 6217(c) of the CZARA and now require 30% from each of the CZMA section 306 and CWA section 319 allocations to be withheld. Also, if Congress were to appropriate any new funding for coastal nonpoint programs, Illinois would be ineligible for the funding.

Program disapproval and the imposition of financial penalties would have adverse environmental effects. While it cannot be known exactly which efforts would be cut as a result, the reduced funding could impair Illinois' ability to implement any elements of its coastal nonpoint program (e.g., outreach related to the Clean Marina Initiative) that are funded from Section 306 of the CZMA or Section 319 of the CWA. Further, the penalties would reduce the environmental benefits that ICMP, the Illinois Nonpoint Source Management Program, and projects funded under grants from these programs bring to the environment in Illinois. In short, reducing by 30% Illinois' CZMA Section 306 and CWA Section 319 funding would reduce the state's ability to fully implement its coastal management program and water quality program.

These programs currently provide environmental benefits to the state's coastal area, water quality, and user groups. Program disapproval would not itself change any of the enforceable policies and mechanisms that help reduce coastal nonpoint pollution that already exist under state or local law.

NOAA and EPA have reviewed the Illinois coastal nonpoint program and propose a finding that the program meets many of the requirements of section 6217. Under the policies described in NOAA and EPA's 1993 "Program Development and Approval Guidance," NOAA and EPA have the discretion to conditionally approve state coastal nonpoint programs in certain situations. NOAA and EPA consider conditional approval to be the most appropriate alternative at this time. If Illinois fails to meet the proposed conditions, NOAA and EPA will reconsider the possibility of disapproving the program.

2.4 No Action Alternative

In developing this draft PEA, NOAA and EPA also considered the "no action" alternative in which the Federal agencies would not make any decision as to whether to approve or disapprove the Illinois coastal nonpoint pollution control program. However, section 6217 of the CZMA requires NOAA and EPA to jointly review and decide whether to approve a program after its submittal by the State. Under the statutory framework, taking no action on coastal nonpoint program approval could expose both Federal agencies to potential legal challenges because such actions may constitute a violation of a legislative command. At most, only a short-term delay in NOAA and EPA's decision-making would be permissible under the existing statutory framework. Nonetheless, analyzing the no action alternative provides a baseline against which other alternatives can be compared.

Under this alternative, Illinois would continue to receive its full share of funding under Section 306 of the CZMA and Section 319 of the CWA (because 16 United States Code (U.S.C.) §1455b(c) requires a finding that a coastal state has failed to submit an approvable program in order for funding to be withheld). While Illinois would, technically, not be eligible for new Coastal Nonpoint Program funding if it were appropriated by Congress, no coastal nonpoint program funding has been appropriated since FY2009, and there is no immediate prospect for new appropriations. In addition, Illinois' programs and enforceable policies that are already in place to reduce nonpoint pollution would continue to exist, as would be the case under the other alternatives. Under the no action scenario, Illinois would not benefit from any feedback developed as part of NOAA and EPA's joint review, and there would be no new initiatives to improve coastal water quality or enhance the aesthetic value of Illinois' coastal zone in response to conditions (for full program approval) proposed by the Federal agencies. Thus, there would be few consequences to the physical and biological environments associated with the no action alternative because there would be no changes to the status quo. Since, in practice, neither operating programs nor funding levels would change under this alternative, the only impact to the socioeconomic environment of the NOAA-EPA decision would be administrative costs that would be incurred by NOAA, EPA, and Illinois if there were a legal challenge resulting from the federal agencies taking no action.

3.0 AFFECTED ENVIRONMENT

As required by section 6217(a) of the CZARA, the geographic scope of each coastal nonpoint program must be sufficient to ensure implementation of management measures to "restore and protect coastal waters." Illinois' proposed 6217 management area consists of its coastal zone. Because the actual geographic scope of each coastal nonpoint program was unknown during the preparation of the 1996 PEIS, that document uses coastal watersheds for purposes of generally describing the environment to be affected. The description of the environment in the PEIS was of a general nature because of the widely diverse areas encountered across all of the states and territories that were expected to submit coastal nonpoint programs.

The following is a more specific description of the environment in Illinois' proposed 6217 management area, based in part on the FEIS prepared by NOAA in 2011 as part of its review of Illinois' Coastal Management Program (summarized in a 2011 publication titled, "Illinois Coastal Management Program," hereafter referenced as the Program Document) and the 2014 document prepared by the Illinois Department of Natural Resources (IDNR) and Illinois Environmental Protection Agency (IEPA) titled, "Illinois Coastal Nonpoint Pollution Control Program" (hereafter, the Illinois Submittal) (IDNR 2011; IDNR and IEPA 2014).

3.1 Physical Environment

3.1.1 Illinois' 6217 Management Area

The boundary of the Illinois 6217 management area, also known as its coastal nonpoint management area, aligns with the ICMP boundary (hereafter, the Illinois coastal zone). See Figure 1 in Appendix A. Included are two distinct areas: an 85-square mile area of land along lakeshore and 11.5 square miles within the "Inland Waterway Corridors." The former area, within the Lakeshore Boundary, is generally parallel to the Lake Michigan shoreline. The Lakeshore Boundary includes areas that have been part of the Lake Michigan watershed since the early 1900s. It excludes areas that were originally part of the Lake Michigan watershed, but are no longer, due to changes in the flow direction of the Chicago, Little Calumet, and Grand Calumet River systems, as well as urbanization and associated engineering (e.g., directing stormwater conveyances away from Lake Michigan). The open water portion of the Lakeshore Boundary extends as far as the boundaries within Lake Michigan of the adjacent states, Wisconsin, Michigan, and Indiana. The part of Lake Michigan falling under Illinois' jurisdiction covers approximately 1,564 square miles (IDNR and IEPA 2014; IDNR 2011). For detailed figures depicting the areas within and adjacent to the ICMP boundary, see Appendix A of the Program Document.

The Inland Waterway Corridors extend along both sides of "near-lake" segments of the river systems that historically flowed to Lake Michigan, but have been engineered to flow away from Lake Michigan in the last 200 years. Specifically, the Inland Waterway Corridors extend along certain "near-lake" segments of the Chicago River system (North Branch, South Branch, Main Branch, and North Shore Channel) and some segments of the Little Calumet and Grand Calumet Rivers. These waterways have a visual link to Lake Michigan, and there is navigational access between them and Lake Michigan. The Inland Waterway Corridors includes both

waterway segments and narrow corridors of land on both sides of the waterways. The area within the Inland Waterway Corridors is included in the coastal nonpoint management area principally because there have been episodes associated with heavy precipitation and runoff when the lock or sluice gates separating the inland waterways from Lake Michigan and its tributaries have been opened. Opening these gates has allowed the flow direction of water in waterways engineered to discharge towards the Des Plaines River (and ultimately the Mississippi River) to be reversed, temporarily routing discharge to Lake Michigan. This does not occur during most occasions when there are combined sewer overflows; it occurs only during the most extreme flood conditions, at times contributing to "major water quality impacts along parts of the lakeshore" (IDNR 2011). These discharges are not applicable to the coastal nonpoint program because they are permitted under the Clean Water Act (IDNR and IEPA 2014).

The descriptions in Chapter 3 of the Program Document and maps in Appendix A of the Program Document showing the lands and waters within the boundaries identified by the Illinois Coastal Management Program are incorporated by reference (NOAA and IDNR 2011; IDNR 2011). These sections detail the precise outlines of the Lakeshore Boundary and Inland Waterway Corridors. The Illinois coastal zone falls entirely within Cook and Lake Counties. In general, the regional transportation system (primarily road centerlines, but sometimes railroad rights-of-way or features such as bridges) was used to define boundaries that would be easy to map and recognize, although sometimes property lines (between parkland and privately-owned land) or municipal boundaries were used in establishing the boundary of the Illinois coastal zone. Lands that are federally-owned or leased are not included in either component of the Illinois Coastal Management Program boundary. The largest such area is the approximately 1,600-acre area known as Naval Training Center Great Lakes, now used by multiple U.S. government agencies, primarily for training. It contains more than 1,100 buildings, a harbor used by Navy personnel, and 50 miles of roads (IDNR and IEPA 2014; IDNR 2011; ICMP 2015a).

3.1.2 Coastal Environment

The next subsections describe the physical features of the Illinois coastal zone, including its hydrology, geology, soils, shoreline, and beaches.

3.1.2.1 Hydrology

The land area within the Illinois coastal zone extends across approximately 62,000 acres. Surface water drains to four major watersheds, the Lake Michigan watershed (which includes the Calumet River watershed), Des Plaines River watershed, Chicago River watershed, and Little Calumet River watershed. Important characteristics of these watersheds are described on pages 21-24 of the Illinois Program Document, incorporated by reference. The Des Plaines River, Chicago River, and Little Calumet River watersheds drain away from Lake Michigan (NOAA and IDNR 2011). Ultimately, these water bodies drain to the Mississippi River. Small parts of the Des Plaines River watershed are included in the coastal zone partly because the boundary was drawn along the center of roads and railroad rights-of-way, not along watershed boundaries; several larger water bodies in the coastal zone also drain to the Des Plaines River (IDNR and IEPA 2014). Figure 2 is a map of the major watersheds that are found in the Illinois coastal zone. It also shows county and state boundaries.

The Illinois coastal zone contains portions of 16 different subwatersheds, known by their 12-digit Hydrologic Unit Codes (HUC12 subwatersheds), as designated by the U.S. Geological Survey. For more information, see the Illinois Submittal, pages 15-16 and 249-255, incorporated by reference. Figure 1-2 on pages 249-255 of the Illinois Submittal shows the HUC 12 subwatersheds and streams in Illinois' coastal zone. Table 1-2 on page 16 lists the acreage of each HUC12 subwatershed and the number and percent of acres within each that are inside the coastal zone. It shows that, in some cases, only a very small percent of the HUC12 subwatershed falls within the Illinois coastal zone, e.g., because some watersheds cross state lines. In ten cases, 5% or less of the HUC12 subwatershed falls within the coastal zone. The other six HUC12 subwatersheds have 7% or more of their acreage in the coastal zone.[2] Seven HUC12 subwatersheds have at least 2,500 acres in the management area[3] (IDNR and IEPA 2014, pp. 15-16 and 249-255).

Major rivers and channels in the Chicago area are shown in Figure 3. The Chicago and Little Calumet Rivers typically flow away from Lake Michigan as a result of multiple engineering projects. In 1848, the Illinois and Michigan Canal was completed, connecting Lake Michigan to the Illinois River and hence to the Mississippi River. Then, the Chicago River was diverted because it served as Chicago's main sewer. When it flowed into Lake Michigan, it was contaminating the city's main source of drinking water, the lake. In 1900, the U.S. Army Corps of Engineers constructed the Chicago Sanitary and Ship Canal to link the South Branch Chicago River with the Des Plaines River. This allowed gravity-driven reverse flow from the South Branch Chicago River and Main Branch away from Lake Michigan. The Chicago Sanitary and Ship Canal, which also allows for commercial navigation, largely replaced the Illinois and Michigan Canal, portions of which have now been filled in (NOAA and IDNR 2011).

In 1910, the Sanitary District of Chicago built the North Shore Channel to control the dynamics of the North Branch Chicago River and combined sewer discharge from Evanston and Wilmette. Also part of that engineering project was construction of the Wilmette Lock and Sluice Gate. Then, in 1938, the Sanitary District of Chicago built the Chicago Lock, now operated by the U.S. Army Corps of Engineers, to ensure the Main Branch of the Chicago River did not drain to the lake, while still providing for navigation. The gates of the locks are sometimes opened to allow flow to the lake at times of heavy precipitation and runoff. The volume of Lake Michigan water that Illinois can divert through the waterways that flow away from Lake Michigan is governed by a Supreme Court decision, *Wisconsin v. Illinois* (NOAA and IDNR 2011). For more information about these channels and segments of the Chicago River, see the ICMP Issue Paper titled, "Chicago River and North Shore Channel Corridors" (ICMP 2011a). Collectively, the North Shore Channel, North Branch Chicago River, Main Branch

[2] These watersheds (and the approximate percentage of each within the coastal zone) are: Lake Michigan (7%), Oakwoods Cemetery-Frontal Lake Michigan (27%), Grand Calumet River-Little Calumet River (34%), Calumet River-Frontal Lake Michigan (31%), Diversey Harbor-Frontal Lake Michigan (53%), and Waukegan River-Frontal Lake Michigan (94%).

[3] These subwatersheds are the South Branch Chicago River-Chicago Sanitary and Ship Canal (2,500 acres), Oakwoods Cemetery-Frontal Lake Michigan (2,500 acres), Grand Calumet River-Little Calumet River (5,900 acres), Diversey Harbor-Frontal Lake Michigan (8,000 acres), Calumet River-Frontal Lake Michigan (9,500 acres), Waukegan River-Frontal Lake Michigan (29,000 acres), and the HUC12 subwatershed known as Lake Michigan (over 1 million acres) (IDNR and IEPA 2014).

Chicago River, South Branch Chicago River, Little Calumet River, and the Grand Calumet River are known as the Chicago Area Waterway System (CAWS). According to one ICMP publication, the "coastal area is still significantly influenced by stormwater along the shoreline and by interactions with the North Shore Channel, the Chicago River's North Branch and the lowest portion of its South Branch" (ICMP 2013a). Urban flooding occurs in Cook County most years, due in part to the rate and volume of stormwater runoff and drainage issues. Flood damage is increasing in the watershed of the North Branch of the Chicago River (ICMP 2015a).

In the Calumet region (in the southeastern part of the Illinois coastal zone), most of the waterways, particularly rivers, have been modified by humans, e.g., dredged, straightened, armored, leveed, or engineered to reverse flow. Some of these waterways are shown in Figure 3. The Calumet-Saganashkee Channel (Cal-Sag Channel) was built by the Sanitary District of Chicago in 1922 to link the Little Calumet River to the Chicago Sanitary and Ship Canal. The Cal-Sag Channel reversed the flow of the Little Calumet River so that it flows away from Lake Michigan, largely to keep the lake from being polluted by contamination in the river. In 1960, O'Brien Lock and Dam was built on the Calumet River, where its name changes to the Little Calumet River, to control the water level in the Little Calumet River and Cal-Sag Channel. It facilitates navigation and can direct flow in either direction, occasionally (under high flow conditions) allowing river water and water in the Cal-Sag Channel to again flow northward to Lake Michigan. Under normal flow conditions, when the gates of the dam are closed and the Little Calumet River flows to the west, the O'Brien Lock and Dam creates a boundary between the Lake Michigan watershed and the Des Plaines River watershed (because the Little Calumet flows to the Cal-Sag Channel, then the Chicago Sanitary and Ship Canal, and then the Des Plaines River) (NOAA and IDNR 2011; Sparks 2000).

The Calumet River is primarily a commercial waterway between Lake Michigan and Lake Calumet. The Calumet River watershed, part of the Lake Michigan watershed, is nestled between the Little Calumet River watershed and the Chicago River watershed. Part of the Calumet River watershed is within the State of Indiana. The Calumet River also allows boats to navigate between Lake Michigan and the Little Calumet River. Most of the Lake Calumet shoreline is part of Senator Dan Dougherty Harbor complex, operated by the Illinois International Port District, and there is also a golf course along Lake Calumet. There has been extensive filling along the perimeter of Lake Calumet and Wolf Lake (NOAA and IDNR 2011).

One difference between some of the parts of the Illinois coastal zone is the extent to which they contain tributaries that flow to Lake Michigan. Immediately northeast of the mouth of the Calumet River, there are no streams that flow to Lake Michigan other than Skokie Ditch, originally constructed as part of an attempt to drain Skokie Marsh in the early 20th Century. (Now, the ditch only infrequently directs localized surface water drainage to Lake Michigan.) Further north, beginning at the southernmost ravines in Winnetka, up to the northernmost portion of the Illinois coastal zone, there are numerous naturally-occurring streams that flow to Lake Michigan, including Kellogg Creek, the Dead River, and the Waukegan River (NOAA and IDNR 2011).

The projects related to the CAWS have not been the only major projects in the Illinois coastal zone. For example, a state-owned and operated 1,500 slip marina, called North Point

Marina, was built in the late 1980s along Lake Michigan in the northern portion of the coastal zone, a little south of the Wisconsin line (NOAA and IDNR 2011). Waukegan Harbor has also been modified for various purposes, including to construct a marina. There have been numerous shoreline stabilization projects, particularly in the Chicago area, including jetties and bulkheads. In addition, the City of Chicago carried out extensive projects to fill and create more land along the lakeshore, beginning in the late 1800s (collectively totaling more than 5.5 square miles of land along the Chicago lakefront). Some of the filled area was used for maritime commerce and rail traffic, whereas other projects built new land for an extensive system of parks, harbors, beaches and other areas for public use and enjoyment along the lakeshore. Many of these projects required armoring the shoreline to reduce erosion. For more information about shoreline change in Illinois, see pages 25-29 of the Program Document, which provide more in-depth information and are incorporated by reference (NOAA and IDNR 2011).

In short, the hydrology and landscape of the Illinois coastal zone have been greatly modified by engineering projects constructed for a variety of purposes, mainly associated with navigation, industrialization, and urbanization. There are streams draining to Lake Michigan in the northern part of Illinois' coastal zone, and Skokie Ditch could infrequently carry surface water drainage to the lake. As noted above, flow from waterbodies in the central part of the coastal zone, including the Chicago River system, is diverted away from Lake Michigan. The combined sewer system in the Chicago River watershed also drains stormwater and sanitary waste away from Lake Michigan. By contrast, the Calumet River watershed, which includes Lake Calumet, Wolf Lake, and associated wetlands, empties into Lake Michigan. South of the O'Brien Lock and Dam, water typically flows away from Lake Michigan, but can be reversed (NOAA and IDNR 2011). Hydromodifications are discussed further in the 2011 Program Document and section 3.3.5.4 of this draft PEA.

The coastal waters in Illinois include Lake Michigan and its harbors; seven inland lakes, ponds, and lagoons (Wolf Lake, Lake Calumet, Powderhorn Lake, Flatfoot Lake, Salt Pond, Jackson Park – South Lagoon, and Lincoln Park – North Pond); and all rivers, creeks, channels, and canals that pass through the coastal zone, including Bull Creek, Dead Dog Creek, Pettibone Creek, Waukegan River, Little Calumet River, Calumet River, Grand Calumet River, Cal-Sag Channel, North Shore Channel, the North and South Branches of the Chicago River, and the Chicago Sanitary and Ship Canal (IDNR and IEPA 2014).

3.1.2.2 Geology, Geomorphology, and Soils

Information on the geology, geomorphology and soils of the Illinois coastal zone can be found in the Illinois Program Document, pp. 16-18, incorporated by reference. In short, the coastal geomorphology section describes the three major types of landforms, shaped by glacial processes, in Illinois' coastal zone. From the Wisconsin border to North Chicago, the geomorphic setting is called the Zion beach-ridge plain, a low-lying plain (up to 15 feet above mean lake level). Within this region is the approximately 6.5-square-mile Illinois Beach State Park, which preserves natural beaches, sand ridges, and swales. The park was created in 1948, and it was designated a National Landmark in 1980. The southern portion of the plain includes Waukegan Harbor; near the harbor, much of the plain has been altered for industrial uses and the port. From North Chicago to Winnetka, the coast is characterized by bluffs, where Lake

Michigan meets steep glacial moraines dissected by ravines. The bluffs form the highest (up to 90 feet high) and steepest (from nearly vertical to about 45 degrees) landforms in the coastal zone, and some have been graded to reduce erosion. Some ravines in this region contain intermittent streams discharging to Lake Michigan. The Chicago lake plain is found from Winnetka to the Illinois-Indiana state line. The Chicago lake plain, which includes most of the City of Chicago, was submerged during the recent geologic past, when ancestral Lake Michigan was at a higher level, up to 60 feet higher than what is currently considered mean lake level (NOAA and IDNR 2011, p. 16).

In its section on coastal geology, the Illinois Program Document states that soil in inland portions of the Illinois coastal zone is predominantly silty and clayey till, with some discontinuous layers of sand and gravelly sand. The till is exposed along the coastal bluffs and can be found beneath most of the soils in the nearshore area, including beaches. Beneath the till is bedrock. Beach sediments in the coastal zone are typically a mix of sand and gravel, created from the erosion of coastal bluffs. Sandy beaches along the Chicago lakeshore have been constructed from sand mined from the lake bottom near the Illinois-Indiana border. Beach nourishment using sand from inland sand pits in western Lake County also occurs (NOAA and IDNR 2011, pp. 16-18).

3.1.2.3 Physical Shoreline and Beaches

Most of Illinois' 63-mile coastline has been altered by coastal engineering and shore protection projects. Chicago's shoreline has been most heavily modified, with a total of more than 5.5 square miles of lakefront land constructed in the late 19th and the 20th centuries, largely for the purpose of providing for public use of the shoreline. Municipalities north of Chicago also created parks and beaches along the shoreline. South of Chicago, the shoreline was also modified when the Calumet area, Lake Calumet, and the Calumet River were heavily used for industry, commerce, and transportation (IDNR and IEPA 2014). Additional information about the physical shoreline in Illinois can be found in section 1.1.5 of the Illinois Submittal and section 5 of the Program Document, both incorporated by reference (IDNR and IEPA 2014; IDNR 2011).

The only places where there are natural beaches, without shore protection structures, are a 3-mile stretch of Illinois Beach State Park, adjoining areas to the south, and a few individual properties along bluffs (IDNR and IEPA 2014). Sediment along the shoreline of the northern portion of the Illinois coastal zone, along the beach-ridge plain, has a natural tendency to erode and be carried south along the coastline, due to the directions of prevailing winds and currents. Erosion along the shoreline in this area, including at Illinois Beach State Park, results in some sand accretion further to the south. For example, there is natural accretion in the vicinity of Waukegan Harbor (ICMP 2015a).

There are also many artificial beaches (e.g., segments of the shore made of concrete promenades atop revetments) in the Illinois coastal zone. ICMP defines a beach as:

> the area of unconsolidated material (sand, gravel, pebbles and possibly cobbles), either naturally occurring or artificially placed, that has an upper limit either along

> the line of permanent vegetation or along the lakeward edge of any coastal structure . . . and a lower limit below water where sand persists across the lake bottom, and calm-water depths, no greater than six feet. [IDNR 2011]

There are almost 60 municipally-operated public beaches along Lake Michigan that meet this definition, along with a few other beaches open to the public. There is also a federally-managed beach at the Great Lakes Naval Training Center open only to base personnel and a public beach area along Wolf Lake, in William Powers State Recreation Area. For a map of the beaches along Lake Michigan, see Figure 5-1 of the Illinois Program Document. There are also several parks along Illinois' coastal ravines in the northernmost portion of its coastal zone, e.g., in and around Zion and Waukegan. Some of the parks housing municipal beaches also contain ravines, e.g., in Highland Park and Lake Forest (IDNR 2011).

3.2 Biological Environment

3.2.1 Water Quality

Aquatic ecosystems have been affected by historic wastewater management practices, industrial activities, contaminated runoff, and other sources of contaminants in water and sediment. In addition, air pollutants have affected water quality due to atmospheric deposition of contaminants. Water quality in Illinois has been improving in recent decades because of the closure of many factories, improvements in industrial wastewater and sewage treatment practices (primarily after the passage of the Clean Water Act), reductions in pesticide use, protection and enhancement of wetlands and riparian buffers, initiatives that Illinois has in place to reduce and mitigate the impacts of nonpoint pollution, and other factors (Krohe 2004). Nonetheless, sources such as nonpoint source pollution (e.g., from urban runoff), CSOs, and polluted sediments still contribute to degraded water quality.

Extensive data about water quality in Illinois collected and reported pursuant to Illinois programs implementing the Clean Water Act are presented in the "Illinois Integrated Water Quality Report and Section 303(d) List," issued biannually. Under the Clean Water Act, the state-identified designated use (e.g., public and food processing water supply or general use) determines what water quality criteria apply. When water quality parameters are measured at levels outside target ranges that protect the designated uses, the waters are considered impaired for those uses, such as contact recreation or eating seafood, pursuant to section 303(d) of the Clean Water Act. Despite reductions in the volume and concentrations of pollutants being introduced into Illinois waters, all the rivers and streams in the coastal zone of Illinois were impaired for at least one use, as of 2014. The same is true for all inland lakes except Powderhorn Lake (in Cook County) and all of the sampled harbors. Impaired uses include aquatic life, fish consumption, aesthetic quality, and/or primary contact (IDNR and IEPA 2014; IEPA 2014a).

Section 8.1 of the Illinois Submittal, which is incorporated by reference, provides a detailed breakdown of the impairments; see also the "Illinois Integrated Water Quality Report and Section 303(d) List," which provides data in greater depth. Tables 8-1 through 8-4 of the Illinois Submittal summarize the causes of the impairments and suspected sources of the

impairments (to the extent they are known), as of 2014. The sources of impairment include, from most widespread to least widespread: unknown sources (43% of impaired segments in the coastal zone), atmospheric deposition (15%), contaminated sediments (14%), CSOs (8%), urban runoff/storm sewers (7%), industrial point source discharges(3%), channelization (2.5%), impacts from hydrostructure flow regulation/modification (2%), upstream impoundments (2%), resuspension of contaminated sediment (1%), runoff from forest/grassland/parkland (1%), waterfowl (1%), hazardous waste sites (0.5%), highway/road/bridge runoff not related to construction (0.2%), and streambank modifications/destabilization (0.2%). The causes of impairment include polychlorinated biphenyls, mercury, other metals, pesticides, total phosphorous, dissolved oxygen, sedimentation, total dissolved solids, and fecal coliform, among others. In addition, Illinois' entire Lake Michigan shoreline and all of its beaches were impaired for fish consumption and primary contact in 2014 (IDNR and IEPA 2014; IEPA 2014a). (One beach is no longer impaired for primary contact, according to the Illinois Integrated Water Quality Report for 2016 (IEPA 2016a)). Every stream in the Chicago region is impaired to some degree (Krohe 2004).

3.2.2 Fisheries

Fishing from both boats and shoreline locations is an important pastime in the Illinois coastal zone. IDNR carries out fish stocking initiatives in selected locations. Fish that have been stocked for recreational fishing in Chicago-area waterways include largemouth bass, brown trout, rainbow trout, bluegill, northern pike, walleye, crappie, bullhead catfish, and channel catfish (NOAA and IDNR 2011). Coho and chinook salmon were once stocked in Lake Michigan, as well (IDNR 2004). Major types of sport fish caught in Lake Michigan include salmon, trout (various species, some of which are stocked), bass, yellow perch, panfish, and smelt. Also present on the lakefront and in harbors are carp and freshwater drum (IDNR 2015a; IDNR and IEPA 2014). A number of inland lakes and lagoons are also popular fishing destinations. For more information about fisheries and fishing in different locations in Illinois, see www.ifishillinois.org.

Overall, 77 species of fish have been identified in the Chicago River drainage basin, along with 16 bivalve species and 12 species of large crustaceans (Krohe 2004). According to a 2000 report, approximately 50 species of fish are found in the Calumet area, including minnows, catfish, bass, sunfish, and crappies, as well as introduced species such as carp, goldfish, alewife, rainbow trout, and round goby. Powderhorn Lake is the only lake in the coastal zone that is not impaired, and it supports a population of banded killifish, considered threatened by the State of Illinois (Sparks 2000). Because of pollution, development and associated channelization, competition from introduced species, and other factors, many species of fish that originally inhabited the lakes and rivers in Illinois' coastal zone are no longer present. The Iowa darter is now found in only a few locations in Illinois. Some of the non-native fish species present in northeastern Illinois waters are considered nuisance species because of effects they have on habitats and native aquatic species, as well as commerce and recreation, in some cases. For example, nuisance species can destabilize populations of other types of fish. These invasive species include Asian carp, sea lamprey, alewife, white perch, and zebra mussels (IDNR and IEPA 2014; NOAA and IDNR 2011).

Because of historic contamination, primarily from polychlorinated biphenyls and mercury, the Illinois Department of Public Health has issued advisories recommending people either not eat or limit their intake of certain fish species caught in certain locations (in some cases depending on the size of the fish). As noted above, the entire shoreline of Lake Michigan within Illinois is impaired for fish consumption. All the harbors assessed are also impaired for fish consumption, as are some area streams (IEPA 2016a). For example, the public has been advised not to eat carp or channel catfish from Lake Michigan waters and to limit their intake to one meal per month or one meal per week of another eight fish species caught in Lake Michigan; see http://www.idph.state.il.us/envhealth/fishadvisory/fishadvisory_cook.htm for more information (Illinois Department of Public Health 2014).

3.2.3 Wetlands and Related Systems

3.2.3.1 Background and Definitions

The Illinois coastal nonpoint program includes management measures for wetlands, riparian areas, and vegetated treatment systems. Illinois' Interagency Wetlands Policy Act of 1989 defines wetlands in Illinois and establishes a goal of no overall net loss of existing wetland acres or their functional values due to state-supported activities. Wetlands are also protected under the Clean Water Act, and "isolated wetlands" in Lake County are afforded additional protections under Lake County's Watershed Development Ordinance (IDNR and IEPA 2014).

In the Great Lakes, there are four main types of wetlands. Marshes are usually found adjacent to ponds, lakes, and streams. Some of the plants typically found in marshes are rushes, reeds, cattails, and lily pads. Swamps are wooded wetlands, where the vegetation consists of conifers, hardwoods, and/or shrubs. Bogs are areas where water flow is minimal, and they contain highly acidic peaty soils and mosses, especially sphagnum. Vegetation commonly found in bogs includes black spruce, blueberries, cranberries, orchids, and insect-eating plants. Finally, fens are similar to bogs, but their soil is less acidic, due to increased ground and surface water flow. Prevalent plants include sedges and low shrubs, along with some orchids and insect-eating plants. These wetlands provide important habitat for fish, birds, and other wildlife (ICMP 2011b).

Illinois once contained more than eight million acres of wetlands; the state has less than 1 million acres of wetlands remaining because hundreds of thousands of acres of wetlands were once dredged, drained, or filled to support development and agriculture, and many additional acres were diked, impounded, or excavated (NOAA and IDNR 2011). ICMP used data from the National Land Cover Database from 2011 to estimate that there are at least 4,800 acres of wetlands in the Illinois coastal zone (including emergent herbaceous wetlands and woody wetlands, but not including open water) (ICMP 2015a). Also, IDNR and IEPA reported in 2014 that there are approximately 10,700 acres or 17 square miles of wetlands and open water in the coastal zone. Of these, almost 5,800 acres (9 square miles) of wetlands and open water are protected within IDNR properties, Forest Preserves, Park Districts, Port Districts, or the Openlands Lakeshore Preserve along Lake Michigan (IDNR and IEPA 2014). County-level data

on wetland types are available from a few different sources, including the FEIS (NOAA and IDNR 2011) and the ICMP "Section 309 Assessment and Strategy: 2016-2020" (ICMP 2015a).[4]

Riparian areas are vegetated ecosystems along a waterbody, subject to periodic flooding and characterized by a high water table. Riparian areas can be wetlands, uplands, or contain both. Energy, materials, and water pass though riparian areas. Wetlands and riparian areas filter pollutants, improving water quality, and perform a variety of other functions, such as harboring food sources for a variety of species, providing habitat for fish and wildlife, recharging groundwater, and storing floodwaters, which reduces flooding (IDNR and IEPA 2014). For more information about the functions of wetlands, see http://www.dnr.state.il.us/wetlands/ch2a.htm and http://water.epa.gov/type/wetlands/functions.cfm. For county-level data provided by NOAA on wetlands extent (as derived from satellite imagery) and economic value in Cook and Lake Counties, see *Wetland Benefits Snapshot: Cook County* at http://www.coast.noaa.gov/snapshots/#/process?action=wetlands&state=17&county=031&bounds=-87.86288194711802,41.06962777885865,-87.92404970207359,42.55428886634939 and *Wetland Benefits Snapshot: Lake County* at http://www.coast.noaa.gov/snapshots/#/process?action=wetlands&state=17&county=097&bounds=-87.7995899454228,41.752369871999015,-88.15933238090508,42.89602091060831.

Vegetated treatment systems include both constructed wetlands and vegetated filter strips. Vegetated filter strips are intended to remove sediment and pollutants from surface water runoff. This can occur via filtration, deposition, infiltration, adsorption, absorption, decomposition, and, for certain pollutants, volatilization. These filter strips maintain soil aeration, whereas wetlands have anaerobic soil conditions at times. Constructed wetlands treat wastewater and remove pollutants from runoff. Vegetated treatment systems can also help with floodwater control and perform some of the other functions of wetlands, such as providing habitat (IDNR and IEPA 2014).

3.2.3.2 Northern Coast Wetlands

Illinois' Lake Michigan shoreline formerly had a wetland system, but it was filled to facilitate development (ICMP 2011b). The largest wetland areas remaining along the northern coast are within Illinois Beach State Park. The park contains more than 1,100 acres of undegraded wetlands. The wetlands in the swale areas of the ridge and swale wetlands contain species such as Kalm's St. John's Wort, sundew, and a wide variety of orchids. In wetlands surrounding the park, the red-osier dogwood can be found (IDNR 2011; ICMP 2011a). The park also contains more than 60 acres of rare habitats called pannes, which are groundwater-fed wetlands found within depressions between dunes and sand ridges, which often support unique

[4] The FEIS reported the number of acres of six types of wetlands present in Lake County and Cook County, respectively, in Table 7 on page 55, based on data for 1999-2000 (NOAA and IDNR 2011). Different ways of defining wetlands and methodologies for measuring their extent yield different results; for example, wetland acreages at the county level reported by NOAA for 2001 from remote sensing data are not the same as from acreages reported in the FEIS from the Land Cover of Illinois Statistical Summary for 1999-2000 or the National Land Cover Database (NOAA and IDNR 2011; Illinois Department of Agriculture 2004; NOAA 2012; ICMP 2015a). The ICMP Technical Advisory Committee identified a need for more refined data identifying wetlands and their quality or degree of degradation (ICMP 2015a).

assemblages of plant species. The water bodies within the park provide habitat for yellow perch, northern pike, longnose sucker, blacknose shiner, and blackchin shiner. Shoreline areas within the park have been designated critical habitat for piping plover and other migratory bird species (Lake County Stormwater Management Commission 2008a). For a map showing the wetlands within the Lake Michigan watershed in Lake County, see http://www.lakecountyil.gov/Stormwater/LakeCountyWatersheds/PublishingImages/lakemichigan_shed%20_Esize.pdf.

Near Illinois Beach State Park and just south of the Wisconsin border is Spring Bluff Forest Preserve, which is comprised of 274 acres. It contains four types of prairie habitats, black oak savanna, and wetlands. Several small drainages and Dead Dog Creek pass through the preserve (Lake County Stormwater Management Commission 2008a). Wetlands comprise more than one-quarter of both the 8,100-acre Kellogg Creek watershed and the 10,300-acre Dead River watershed (ICMP 2011c).

Another area within the northern coast supporting a unique type of wetland is the seeps from the slopes of Bull Creek ravine, also called fens. These seeps support skunk cabbage and marsh marigold. The ravines also support beech, paper birch, white pine, arbor vitae, Canadian buffalo-berry, and star-flower (ICMP 2011b).

3.2.3.3 Calumet Area Wetlands

The Calumet area once held vast wetland complexes. Industrial development led to wetland fragmentation, which poses challenges for restoration. There are more than 170 separate forested wetlands in the Chicago River drainage basin, for example. While the largest is 80 acres, the average size of contiguous forested wetlands is approximately seven acres. There are also 380 separate parcels of marsh. Their average size is approximately seven acres, but the largest is 600 acres (Krohe 2004).

At the start of the 21st Century, the Calumet area contained almost 50 lakes (both natural and artificial) and more than 3,400 acres of wetlands. (That estimate could include some wetlands outside the coastal zone.) Prior to European settlement, there were five times as many acres of wetlands, but industrial use of the Calumet area led to dumping waste and sediment into wetlands to create more dry land to accommodate expanding operations and get rid of unwanted waste. Some of the natural lakes that previously existed were drained or filled. Others were altered or used as waste disposal sites, for sewage and industrial wastes. This is true of Lake Calumet, the largest lake in the area, and Wolf Lake, for example. Powderhorn Lake was created from a borrow pit that was used to supply fill for a construction project (Sparks 2000).

There is a large concentration of wetlands between Lake Calumet and Lake Michigan. These wetlands host black-crowned night herons, yellow-crowned night herons, American bitterns, little blue herons, northern harriers, king rails, yellow-headed blackbirds, least bitterns, pied-billed grebes, red-shouldered hawks, and common moorhens, along with other migratory birds. In the summer, there are swallows, wrens, purple martins, yellowthroats, and red-winged blackbirds. Wetlands also host numerous amphibians, such as frogs, toads, and salamanders, as

well as turtles and snakes. They are also home to mammals, such as raccoons, skunks, bats, squirrels, rabbits, opossums, and coyotes. (Sparks 2000).

Parts of Lake Calumet's shoreline have wetland systems dominated by canary reed grass and cattail. The area provides habitat for waterfowl, gulls, and other birds, including black-crowned night heron, little blue heron, and yellow-headed blackbird. Migratory birds also use the area as a stopover point. Near the lake, there are wooded areas and meadows adjacent to the wetlands and mudflats. Lake Calumet has little instream structure and limited emergent aquatic plants for fish habitat and foraging. Nonetheless, the lake harbors 20 species of fish. On the east side of the lake, there are three peninsulas that jut into the water, once intended as docking stations, some of which contain debris and riprap. One of them is called Gull Island because of the thousands of pairs of gulls that build nests there (ICMP 2011b; City of Chicago 2005a).

Hegewisch Marsh in Chicago is the largest wetland in Chicago. Approximately 130 acres in size, this site is owned by the Chicago Park District and has no history of development (except for a former railroad spur within the property). Before it was straightened, the Calumet River ran through the site. Just east of the Little Calumet River, the marsh is currently used for environmental education and nature observation. It includes woodlands with such tree species as cottonwoods and meadows, along with savannah, hemi-marsh, forested wetlands, etc. Rare species supported include the yellow-headed blackbird, common moorhen, little blue heron, and pied-billed grebe. The marsh is also home to other types of birds and to such species as muskrats, beavers, coyotes, frogs, and spotted salamanders. In 2008, the City of Chicago installed a water control structure at Hegewisch Marsh to facilitate wetland habitat management. A number of grants have also supported habitat restoration projects at the site (State of Illinois 2015; Bentley 2013; Calumet Stewardship Initiative 2012; Terry Guen Design Associates, Tetra Tech EM, and Land and Water Resources 2006).

Another preserve in the Calumet region is the Sand Ridge Natural Preserve, which is south of Williams Powers State Recreation Area and within Cook County Forest Preserve land. It has been named Sand Ridge because it contains remnants of dunes that were previously along the ancestor of Lake Michigan, called Lake Chicago. In the swales between the dunes are wetland communities, including wet prairies, sedge meadows, and marshes (Sparks 2000).

3.2.4 Terrestrial Ecosystems

3.2.4.1 Terrestrial Ecosystems of the Northern Coast

Illinois Beach State Park, which has 6.5 miles of Lake Michigan shoreline, contains the largest tract of undeveloped coastal habitat in Illinois. The park contains two nature preserves, Illinois Beach Nature Preserve and North Dunes Nature Preserve. The two preserves contain high-quality natural communities that provide habitat for federally-listed and state-listed endangered species. (Federally-listed species are discussed under section 3.2.5.) Habitat variety stems in part from the unusual coastal beach ridge and swale topography (ICMP 2011b, c). More than 500 plant species and 300 animal species have been sighted at the park, which draws birding enthusiasts, among others. The park sometimes serves as a stopping point for migrating waterfowl shorebirds, neotropicals, raptors, etc. (e.g., northern shrike, northern harrier, several

types of sparrows and warblers, yellow-breasted chat, grasshopper sparrow, Brewer's blackbird, snow bunting, red-headed woodpecker, common nighthawk, whippoorwill, gull, horned grebe, red-throated loon, scaup and other ducks, sandhill crane, solitary sandpiper, snowy owl, merlin, peregrine falcon, osprey, eagles, and several types of hawks) (Lake Cook Audubon n.d.a., n.d.b.). Information about plant species found in Illinois Beach State Park, fish species found along the shoreline, and examples of reptiles, amphibians, birds, and mammals found within the park are incorporated by reference from the November 2013 (draft) "Regional Sediment Management Plan and Environmental Assessment for Illinois Beach State Park" (see especially pages 22-24) (U.S. Army Corps of Engineers Chicago District 2013). Additional information about plants and other species found at the park has been summarized by the Illinois Dunesland Preservation Society (undated). Shoreline erosion presents a management challenge within the park, particularly in the northern portion. Some years, the beaches are nourished (ICMP 2011c).

North of Illinois Beach State Park is the 285-acre Spring Bluff Forest Preserve, in Winthrop Harbor. For a description of the preserve's topography, natural communities, and some of the notable species present, see http://www.dnr.illinois.gov/INPC/Pages/Area2LakeSpringBluff.aspx. There are also protected areas south of Illinois Beach State Park, including Bowen Park in Waukegan and Waukegan Beach. These protected areas offer habitat for a variety of birds, among other species (ICMP 2011b). The almost 400-acre manmade harbor at Waukegan has been designated an Area of Concern under the U.S.-Canada Great Lakes Water Quality Agreement because of its history of polychlorinated biphenyl contamination. Some of the impairments to the harbor have been addressed, and the EPA finished dredging contaminated sediments from the harbor in 2013 (ICMP 2013a).

The Lake Michigan bluff ravines, shown in dark green on Figure 1, also offer significant habitat along the northern coast and are a key feature in this region. Some of the plant species the ravines harbor are rarely found elsewhere in Illinois, including beech, paper birch, white cedar, white pine, arbor vitae, Canadian buffalo-berry, various orchids, and star-flower (IDNR 2011a; ICMP 2013a). Discharge from the northern ravine systems enters a system of swales created by dune accretion. Some ravines have been preserved as open space, e.g., the Openlands Lakeshore Preserve and Fort Sheridan Preserve. Others have been channeled into culverts. For more information, see the issue paper on ravine systems published by the Illinois Coastal Management Program (ICMP 2011d).

3.2.4.2 Terrestrial Ecosystems of Chicago and Vicinity

One important type of habitat found in Chicago and vicinity is the prairie. A prairie is an open grassland containing grasses, wildflowers, and shrubs, but not significant numbers of trees. Periodic fires keep shrubs and trees from taking over prairies. In the Calumet area, some of the prairies are sand prairies, which are well-drained and support plants and animals that have adapted for dry conditions. A number of Cook County's Forest Preserves contain prairies, including Burnham Prairie and Nature Reserve, Wentworth Prairie, Calumet City Prairie and Nature Reserve, Sand Ridge Prairie and Nature Reserve, and Dolton Avenue Prairie in the coastal zone (Forest Preserves of Cook County n.d.a.). Other prairies are owned by the City of Chicago and private owners. Savannas are found in the transition zones between prairies and

woodlands. Savannas often look like fields of grasses and wildflowers, with scattered trees or clusters of trees. In the coastal zone, most savannas are dominated by black oaks. For example, there are black oak savannas within Powderhorn Prairie and within Sand Ridge Prairie and Nature Reserve (Forest Preserves of Cook County n.d.b.). For more detailed information about habitats at individual sites within Chicago, see the "Chicago Habitat Directory" (City of Chicago 2005a).

Along with the lands within the Cook County Forest Preserve system, there are also numerous parks and other areas managed for recreational use in the Chicago area. In all, there are parks along 26 miles of the lakeshore in the City of Chicago, managed by the Chicago Park District for recreation (ICMP 2013a). These shoreline parks are used extensively for diverse recreational uses. Lincoln Park is a 1,200-acre park along Chicago's lakefront that was created in the 19th Century. Current facilities include several museums; a zoo; conservatory; fields and courts for team sports; public beaches, harbors with marinas and docking facilities; a theater; etc. Lincoln Park also contains two bird sanctuaries, ranging from 7 to 15 acres in size (Chicago Park District 2014; City of Chicago 2005a). There are also a number of other lakefront parks that are smaller than Lincoln Park, both north of Chicago and inside the city limits. Parks within Chicago include Grant Park, Burnham Park, Jackson Park, Rainbow Beach Park, and Calumet Park.

The shoreline of Lake Calumet bears the imprint of heavy industrial use and the use of many adjacent parcels as disposal sites (ICMP 2011b). In fact, the U.S. Environmental Protection Agency added an area called the Lake Calumet Cluster Site to the National Priorities ("Superfund") List in 2010. The Cluster Site includes illegal dumping areas, a permitted landfill, a former incinerator site, lagoons that once accepted chemical waste, and another site used as a dump for industrial, municipal, and hazardous waste, along with waste drums. It is thought that contamination from the site has been transported to adjacent habitat areas, and a groundwater investigation is planned (EPA 2014).

In 2000, the City of Chicago and its partners released the "Calumet Open Space Reserve Plan," which calls for acquiring undeveloped areas near existing protected open space in the vicinity of Lake Calumet so that a total of approximately 4,000 acres (more than 6 square miles) could be together managed as the Calumet Open Space Reserve. Numerous entities manage open space in the Calumet area, including IDNR (which owns William Powers Conservation Area adjacent to Wolf Lake), the Forest Preserve District of Cook County (which holds more than 940 acres across four forest preserves in the area), the Chicago Park District, and the Illinois International Port District (which owns more than 1,000 acres, used largely for industry and a 36-hole golf course)(City of Chicago 2005b). The Chicago Park District is developing a 278-acre park for bicycling and nature observation at Big Marsh, the largest individual wetland in the area (IDNR 2014).

In 2011, the Millennium Reserve initiative was launched, bringing together more than 60 partners (representing public and private entities) to "unify and accelerate conservation, economic development and community development efforts in a 220-square mile area of the Calumet region," along 15 miles of Lake Michigan coastline (ICMP 2013a). The northern portion of the Reserve falls within the coastal zone. The Millennium Reserve contains the entire

area within Chicago that had been proposed for inclusion in the Calumet Open Space Reserve, plus lands within more than 35 other municipalities in both Illinois and Indiana. In late 2013, the U.S. Fish and Wildlife Service announced it would fund acquisition of 66 acres of coastal wetlands between Wolf Lake and Powderhorn Lake in the Millennium Reserve by IDNR, in partnership with the Forest Preserve District of Cook County and Openlands (USFWS 2013). For more information about Millennium Reserve, see www.millenniumreserve.org.

3.2.5 Threatened and Endangered Species

At the time ICMP was approved, Illinois identified four species listed as threatened or endangered species under the federal Endangered Species Act (ESA) within the coastal zone boundary. Two other species identified in the coastal zone have been listed as threatened under the ESA within the past year. A brief description of each of these six species follows:

- **Eastern prairie fringed orchid.** This threatened species is found in selected wetland habitats and is listed by USFWS in Cook and Lake Counties. Specifically, it seeks out wet to moderately moist (mesic) prairie or wetland communities, including sedge meadow, fen, marsh, and marsh edges. It requires full sun (USFWS 2005). One location where it was found within Illinois' coastal zone is Illinois Beach State Park (Bowles 1999; USFWS 2004).

- **Karner blue butterfly.** This endangered species is found in pine barrens and oak savannas where there are a mixture of open and closed canopy conditions (as well as gaps in forest stands, e.g., where there are power line rights-of-way) that contain wild lupines, the only known food source for the Karner caterpillar. Wild lupines are found within the north unit of Illinois Beach State Park. A 2004 U.S. Fish and Wildlife Service letter indicated that the butterfly is believed to occur or to have once occurred at Illinois Beach State Park (USFWS 2004; Bowles, McBride, and Semel 1997).

- **Piping plover.** The Great Lakes population of piping plover is endangered and currently amounts to on the order of 70 nesting pairs. Piping plover are listed in Lake and Cook counties, and their critical habitat includes beaches in both counties. Piping plover prefer wide, open, sandy beaches that have very little vegetation. Nesting areas can include small creeks or wetlands. In 2009, one pair nested in the north unit of Illinois Beach State Park (USFWS 2015a).

- **Pitcher's thistle.** Listed in Lake County, this threatened species was originally lost from Illinois, then reintroduced at Illinois Beach State Park. It is found in beach areas, grassland dunes, and near-shore plant communities, primarily along Lake Michigan. This thistle colonizes open, windblown patches of dune vegetation and declines as the density of vegetation increases and in areas heavily used by people. It also serves as food for a variety of species (USFWS 2002, 2015b).

- ***Rufa* red knot.** This small shorebird migrates annually from the Arctic to southern South America. It migrates through Great Lakes areas between May 1 and September 30, stopping at coastal and estuarine habitats (and large wetland complexes) with sediments

exposed during part of the tidal cycle. The *rufa* red knot has been recorded in Illinois in late summer, fall, and spring along Lake Michigan at, e.g., Illinois Beach State Park, Waukegan, Wilmette Beach, Montrose Point, the Great Lakes Naval Training Base harbor, and the Chicago lakefront (USFWS 2014; USFWS 2015c; Williamson, Purcell, and Hughes n.d.).

- **Northern long-eared bat.** The range of this threatened bat includes Lake and Cook Counties, as well as other parts of Illinois. The species roosts in upland forests, woods, and cool places like caves and mines (and rarely in barns and sheds) in the summer. Pups cannot fly during the first few weeks of their lives, during late spring or early summer. In the autumn, it can be seen swarming in wooded areas, and it hibernates in the winter, typically in caves and mines (USFWS 2015d). According to NatureServe's "Explorer," an encyclopedic compendium of information on species found in North America, the only watershed in the coastal zone in which the bat has been recorded is the Little Calumet-Galien, which extends from the southeastern corner of Illinois through northern Indiana and into Michigan (NatureServe 2015).

The Illinois Endangered Species Protection Board maintains its own list of species that are threatened and endangered within Illinois. As of 2011, this list included 82 species that were found in the Illinois coastal zone, including the Karner blue butterfly, Pitcher's thistle, eastern prairie fringed orchid, and piping plover; for the other species, see pp. 80-82 of the Program Document (IDNR 2011). In 2014, as part of its five-year review of the list, the Illinois Endangered Species Board proposed changes to the Illinois list, which potentially would become effective in 2015. The proposed additions to the Illinois list included the northern long-eared bat, but not the *rufa* red knot (Illinois Endangered Species Protection Board 2014).

3.3 Socioeconomic Environment

3.3.1 History and Historic Resources

The FEIS for the Illinois Coastal Management Program describes some of the history of Cook and Lake Counties on pages 51-52. That discussion is incorporated by reference. It begins by summarizing available information about Native American populations that lived in what is now Lake County, near the Little Calumet and Grand Calumet Rivers. Pottery on the order of 3,000 years old, from the Woodland Period, has been found in that area, and there is also evidence that the Mississippian people lived in the area near the Little Calumet and Grand Calumet Rivers approximately 1,000 years ago. The Mississippian people harvested aquatic and terrestrial resources, cultivated crops, and are thought to have lived in villages (NOAA and IDNR 2011). Early artifacts in the Chicago area suggest that travelers passed through this area to hunt or on trading missions with the Mississippian people. By the mid-seventeenth century, individuals from the Miami tribe had established villages along the Chicago and Des Plaines Rivers, but the Miamis left the region during the 1650s, returning in the 1690s (at which time they built villages near the Illinois River). Other Miami villages were located along the Calumet River. The Potawatomi people established small settlements along the Calumet, Chicago, and Des Plaines Rivers by the 1690s, and over ensuing decades their settlements expanded into other areas (Edmunds 2005a, b). In the 1700s, the area that is now Illinois Beach State Park was part

of the "Three Fires" of the Algonquin Nation: the Potawatomi, Chippewa, and Ottawa (Lake County Stormwater Management Commission 2008b).

French explorers, missionaries, and fur traders also arrived in the area in the 17th and 18th centuries. In 1779, Jean Point du Sable (a black trader said to have been of Haitian origin) was the first to establish a permanent settlement in what is now the Illinois coastal zone, near the mouth of the Chicago River. He had a Potawatomi wife. In 1795, the U.S. government built Fort Dearborn on the Chicago River in Chicago, but it was destroyed by the Potawatomis during the War of 1812 (ICMP 2011e; City of Chicago 2015a). Beginning in 1816, the Potawatomis gave up more and more of their land in exchanges for annuities. In 1818, Illinois became a state. Land surveying intensified, and the population of European immigrants began to grow steadily. In 1832 and 1833, the Potawatomis gave up their last remaining lands. Members of the tribe moved west of the Mississippi or joined their kinsmen in Michigan and Wisconsin (NOAA and IDNR 2011; Edmunds 2005b.).

The Illinois Program Document picks up the narrative history of Chicago and vicinity in the mid-19th Century. That description, on p. 14, is incorporated by reference. It indicates, for example, that the completion of the Illinois and Michigan Canal helped make Chicago the trading center of the Midwest. Along with highlighting the importance of the canal system linking Chicago to New York, the Program Document also discusses the importance of the rail network that went through Chicago. In the late 19th Century, the leading industries in the Illinois coastal zone were agriculture, meatpacking, and steel-making (IDNR 2011). More information about the history of Chicago can also be found at http://www.cityofchicago.org/city/en/about/history.html.

The FEIS and the Illinois Program Document highlight state and federal laws that protect archaeological and historic properties (IDNR 2011; NOAA and IDNR 2011). Figure 4 depicts properties on the National Register of Historic Places (NRHP) within the coastal zone, based on a geospatial dataset reflecting NRHP listings as of May 2014 (Stutts 2014). In February 2015, the Pullman National Monument (which includes the Pullman State Historic Site) was declared, honoring the planned community of Pullman, which is known for its urban design, tailored to the needs of workers (National Park Service 2016).

3.3.2 Demographics

As noted above, there are approximately 96.5 square miles of land within the coastal zone. The northern part of the coastal zone is in Lake County, and the southern part is in Cook County. IDNR and IEPA estimated in 2014 that there were more than 310,000 residents in about 118,000 households the Illinois coastal zone (IDNR and IEPA 2014). This is consistent with a NOAA Office for Coastal Management population estimate, using U.S. Census Bureau data for 2009-2013 (which estimated that the population over that time period averaged on the order of 320,000 people) (NOAA 2016). The total population living throughout all of Lake and Cook counties combined in 2010 was close to 6 million people. The 2010 population of Cook County, approximately 5.2 million, was more than seven times the size of Lake County's population, just over 700,000, even though Cook County's total land area (945 square miles) is only a little more than double Lake County's (444 square miles) (U.S. Census Bureau 2011, 2012a). Thus, the

population density in Cook County is much higher. Figure 4-1 (pp. 262-267) of the Illinois Submittal shows the population density throughout the coastal zone and is incorporated by reference (IDNR and IEPA 2014).

Chicago is in Cook County, and within the city itself, there were approximately 2.7 million people in 2010 (U.S. Census Bureau 2011). The Census Bureau defines an urbanized area as a densely developed territory that contains 50,000 or more people, a delineation intended to separate urban from rural territory, population, and housing in the vicinity of cities. The population of the Chicago Urbanized Area as a whole, defined by the U.S. Census Bureau as extending into neighboring states, was approximately 8.6 million people in 2010. The Chicago Urbanized Area is the third most populous urban area in the United States (U.S. Census Bureau 2013) and the most densely populated coastal area in the Great Lakes Region (IDNR and IEPA 2014).

Table 1, which summarizes some of the available population data, demonstrates that, while the population of the Chicago Urbanized Area as a whole is growing, the size of the population in Cook County and within the limits of the City of Chicago is declining. Lake County is growing at one of the fastest rates of any county in Illinois, and Cook County is still the most populous county in the state (IDNR 2011).

Table 1. Population Trends in the Vicinity of the Illinois Coastal Zone

Geographic Area	2000 Population	2010 Population	Percent Change from 2000 to 2010
Lake County	664,356	703,462	+5.9%
Cook County	5,376,741	5,194,675	-3.4%
City of Chicago	2,896,016	2,695,598	-6.9%
Chicago Urbanized Area	8,307,904	8,608,208	+3.6%

(Sources: U.S. Census Bureau 2001, 2011; NOAA 2013)

Census data show that the Illinois coastal zone is very diverse. More than one-third of the people who live in the coastal zone come from racial minorities. Table 2 presents information on the racial and ethnic backgrounds of people residing in the coastal zone, Lake County, Cook County, and the City of Chicago. A slight majority of the residents of Chicago represent minorities. In Lake County, Cook County, and the coastal zone, the majority of the population is White. The second largest ethnicity represented in all the geographies examined is African American. Asians represent just over 5% of the population in all the different geographies. The table shows that those who are Native American, Native Alaskan, Native Hawaiian, and other Pacific Islanders make up less than 1 percent of the population in the coastal zone study area and smaller percentages in the larger geographic areas (U.S. Census Bureau 2014; NOAA 2016). There are no federally-recognized tribes in Illinois.

Table 2. Racial & Ethnic Characteristics in the Vicinity of the Illinois Coastal Zone

Geographic Area	White	African Amer-ican	Asian	Native Alaskan or Native American	Native Hawaiian or Pacific Islander	Some Other Race	Two or More Races	His-panic or Latino
Coastal Zone	60%	21%	6.0%	0.3%	0.02%	10%	2.6%	31%
Lake County	79%	6.8%	6.4%	0.2%	0.04%	5.2%	2.6%	20%
Cook County	57%	24%	6.4%	0.2%	0.02%	10%	2.0%	24%
City of Chicago	48%	32%	5.7%	0.3%	0.03%	11.8%	2.1%	29%

(Sources: U.S. Census Bureau 2014; NOAA 2016)

Data averaged across five years (2009-2013) from the Census Bureau's American Community Survey indicate that more than one-fifth of the population in the City of Chicago lived below the poverty level. Approximately one in six people living in the coastal zone and in Cook County as a whole had incomes that placed them below the poverty level. Lake County had a lower poverty rate, as shown in Table 3. Table 3 also presents employment data and shows that Lake County has a lower unemployment rate than Cook County. Unemployment is less prevalent throughout both counties than it is in Chicago, where the unemployment rate (averaged from 2009-2013) was 14% in 2011. The unemployment rate on a national scale for the same time period was 9.7% (U.S. Census Bureau 2014; NOAA 2016).

Table 3. Income Characteristics in the Vicinity of the Illinois Coastal Zone

Geographic Area	Individuals with Income Below the Poverty Level (estimate for 2009-13)	Unemployment Rate (estimate for 2009-13)
Coastal Zone Study Area	18%	Not available
Lake County	9.0%	9.6%
Cook County	17%	12%
City of Chicago	23%	14%

(Source: U.S. Census Bureau 2014b; NOAA 2016)

3.3.3 Economic Trends

The NOAA Spatial Trends in Coastal Socioeconomics (STICS) project spatially aggregated 5-year average statistics about the coastal economy in Illinois from the U.S. Census Bureau. For Illinois, the STICS project aggregated data for an approximation of the coastal zone boundary that is a total of 120 square miles.[5] This 120-square-mile area (hereafter, the coastal zone study area) is the closest spatially aggregated dataset NOAA has produced to represent coastal zone data. The most recent time period for which the STICS project calculated data for coastal zone study area in Illinois was 2007-2011 (NOAA 2013).

[5] The boundary used by the STICS project for Illinois includes not only land within the Lakeshore coastal zone boundary and the land within the Inland Waterway Corridors, but also the land between these two areas. (For example, the Richard J. Daley Center, originally known as the Chicago Civic Center, is between the Inland Waterway Corridors and the Lakeshore Boundary and not technically within the coastal zone, but the block it is on and other areas between the Inland Waterway Corridors and Lakeshore Boundary are included in the area studied as part of the STICS project.)

Table 4 presents information about industries in the coastal zone study area, as estimated by the STICS project. The largest groups of people work in education (23% of those employed); trade transportation, and utilities (20%); professional and business services (17%); leisure and hospitality (10%); manufacturing (9%); and financial activities (7%). The sectors in the coastal zone study area that contribute the highest sums to the economy (toward the gross domestic product) are financial activities (29%); trade transportation, and utilities (16%); manufacturing (12%); professional and business services (10%); education and health services (9%); and public administration (5%) (NOAA 2013). Selected data about the economies of Lake and Cook Counties as of 2007 are presented in the FEIS, under Commerce and Industry (pp. 46-47), and are incorporated by reference (NOAA and IDNR 2011).

Table 4. Economy in the Vicinity of the Illinois Coastal Zone (2011)

Industry	**Contribution to Gross Domestic Product, in millions**	**Percent of Gross Domestic Product in the Vicinity of the Coastal Zone**	**Establishments**	**Employees**	**Percent of Employees in the Vicinity of the Coastal Zone**
Construction	$1,319	2%	2,200	11,000	3%
Education and Health Services	$4,587	9%	2,600	89,000	23%
Financial Activities	$15,357	29%	2,600	29,000	7%
Information	$2,057	4%	400	9,000	2%
Leisure and Hospitality	$2,135	4%	2,200	41,000	10%
Manufacturing	$6,165	12%	1,100	37,000	9%
Natural Resources and Mining	$86	0.2%	30	300	0.1%
Other Services	$1,451	3%	2,700	15,000	4%
Professional and Business Services	$5,323	10%	5,400	68,000	17%
Public Administration	$4,555	9%	80	15,000	4%
Trade, Transportation, and Utilities	$8,721	16%	4,900	79,000	20%
Total (all industries)	$53,541	100%	24,800	394,000	100%

(Source: NOAA 2013)

The remainder of the discussion in this subsection summarizes additional STICS data on the economy of the coastal zone study area, adjusted for inflation. The sector that has posted the most growth in the coastal zone study area since 1990 has been the financial activities sector. It grew from 1990 to 2000, and, by 2011, it contributed more than twice as much to Gross Domestic Product (GDP) than it had in 1990. Public administration is another sector that has grown steadily, from 1990, to 2000, to 2011. In 2011, it contributed 51% more to GDP than it did in 1990. The information sector declined between 1990 and 2000, but it made up those losses, and its contribution to GDP increased 57% between 1990 and 2011. Similarly, the education and health services sector shrank between 1990 and 2000, but its value was 22% higher in 2011 than it was in 1990. The value that manufacturing contributed to the economy declined between 1990 and 2000, but its contribution increased 3% percent between 1990 and 2011 (NOAA 2013).

Most other sectors in the STICS coastal zone study area contributed less value to the economy in 2011 than they had in 1990. In fact, the total contribution for all sectors to GDP, which had grown slightly between 1990 and 2000, fell 35% between 1990 and 2011. One sector that has been declining substantially since 1990 is natural resources and mining. Between 1990 and 2000, it declined 30%; by 2011, it had declined another 8%, compared to its 1990 level. The contribution to GDP of the trade, transportation, and utilities sector declined only slightly from 1990 to 2000, but, in 2011, it was 41% lower than it had been in 1990. The professional and business services sector also has been declining. Between 1990 and 2000, it declined by 37%. It made up some of its losses by 2011, when its value was 30% less than it had been in 1990. The "other services" sector, while gaining more than 10% from 1990 to 2000, contributed 13% less to GDP in 2011 than it did in 1990. The contribution of the construction sector to the economy has also varied significantly. From 1990 to 2000, construction grew by 57%. Those gains had been lost a decade later, and the value to the GDP in 2011 was 24% lower than it had been in 1990. Another volatile sector was leisure and hospitality. Between 1990 and 2000, its value increased by 15%, but, by 2011, it had fallen 49% below its 1990 level (NOAA 2013).

3.3.4 Land Use

The Illinois Submittal summarizes land uses in the coastal zone in its section 1.1 and addresses the impacts of land use on water quality in its section 8.2. Both sections are incorporated by reference. The latter section suggests that land use change, industrialization, and urbanization have been major contributors to water quality degradation. Information in the former section reveals that development, particularly urban development, dominates the landscape of Illinois' coastal zone. ICMP data indicates that two-thirds of the coastal zone is comprised of urban areas, including land for residential (34%), commercial (5%), industrial (7%), infrastructure (8%), and civic (6%) uses, with small amounts of vacant developed areas (5%) and areas under construction (1%). In addition, approximately 6% of the coastal zone is open space, 4% is forest, 9% is wetlands, and another 9% is water bodies other than Lake Michigan. The other 2% is used for agriculture. These data reflect land use as of 2005. For more details, see Table 1-1 in the Illinois Submittal (IDNR and IEPA 2014).

The political geography of the Illinois coast is described in the second section of the Program Document, also incorporated by reference. It notes that Chicago is the largest

municipality in the coastal zone and has 22 miles of shoreline. The nine affluent lakeshore municipalities immediately to the north of Chicago are known as the North Shore. The United States Navy's Great Lakes Naval Training Center is at the northern edge of the North Shore area, and further to its north are five municipalities that together are known as the Far-North Coast (IDNR 2011). The Great Lakes Naval Training Center and other federally-controlled lands are not part of the coastal zone because the Coastal Zone Management Act specifies that: "Excluded from the coastal zone are lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agents" (16 U.S.C. §1453, Section 1). Chicago extends along Lake Michigan to the southern limit of the Illinois coastal zone, but navigable waterways within the coastal zone connect other municipalities, such as Burnham, Calumet City, Riverdale, Calumet Park, Blue Island, and Dolton, to the lake. The southern portion of the coastal zone, including portions of these municipalities, is referred to as the Calumet area.

Some of the significant features within the Illinois coastal zone have been described in preceding sections, including Illinois Beach State Park, North Point Marina, coastal engineering projects, and parks created along the lakeshore. Along with the parks and beaches described in section 3.1.2.3, there are a few parks and other areas open to the public along the inland waterways. For example, there is a nearly-continuous 9-mile corridor of publicly-owned parcels along the North Shore Channel and the northernmost segment of the North Branch Chicago River, from Wilmette to California Park in northern Chicago. Parks have been created or are being developed along the Chicago River, both the Main Stem (the Chicago River Walk) and South Branch (Ping Tom Memorial Park and Canal Origins Park). Along the Little and Grand Calumet Rivers, there is publicly-accessible land owned by the Cook County Forest Preserve District, the Village of Burnham, and the Chicago Park District. Wolf Lake is in the southeast corner of the coastal zone and extends across the border with Indiana. Historically, Wolf Lake was modified to allow construction of a number of railroad and industrial facilities. It was also partly drained to facilitate dredging for fill for the construction of the Chicago Skyway in the 1950s. Currently, the 580-acre William Powers State Recreation Area (of which 161 acres are on land) and Eggers Woods Forest Preserve surround most of the part of Wolf Lake within Illinois. For diagrams of the parks in the Calumet area and along the inland waterways, see Figures 5-2 and 5-3 in the Program Document (IDNR 2011). Recently, an extension of the Thorn Creek Trail, a new western segment of the Sal-Sag Trail, and Pennsy Greenway were created in the Calumet area (S. Burns, IDNR, personal communication, March 15, 2016). ICMP is coordinating development of work plans for habitat enhancement projects at Illinois Beach State Park and Powers Recreation Area.

3.3.4.1 Urban

For the purposes of the National Pollutant Discharge Elimination System permitting program, essentially all of the coastal zone is considered an urbanized area (see Figure 4-2 in the Illinois Submittal). Within the Illinois coastal zone, some of the types of urban land uses are commercial (4.6 square miles), industrial (7.0 square miles), infrastructure (7.9 square miles), and civic (5.6 square miles). There are also vacant developed areas (4.7 square miles) and small areas under construction (0.8 square miles). Residential areas cover 33.1 square miles. There are also undeveloped areas (that together account for about one-third of the area within the

coastal zone) comprised of wetlands, open space, forest, and water bodies other than Lake Michigan (IDNR and IEPA 2014).

Metropolitan Chicago is a large industrial center. Its industries originally developed around transportation corridors, airports, and the shores of Lake Michigan. The coastal zone contains similar amounts of land used for infrastructure and industry. The Chicago area is a major center for freight and manufacturing. Accordingly, it contains a large number of warehouses, manufacturing facilities, food processing sites, distribution sites, and other types of industrial facilities. Waukegan is an industrial center, and the Calumet region was historically a major manufacturing and steel production area (IDNR and IEPA 2014; Chicago Metropolitan Agency for Planning 2015). For information about the legacy of leaking underground storage tanks in Cook and Lake Counties, brownfields sites, and National Priorities List sites, see section 1.1.7 (p. 20) of the Illinois Submittal (IDNR and IEPA 2014).

3.3.4.2 Agriculture

Illinois is the second largest exporter of agricultural commodities, among U.S. states. Agriculture contributes billions of dollars to the state's economy. However, there is very little agriculture in the Illinois coastal zone. Available data sources suggest that agricultural land represents on the order of 1% or 2% of the coastal zone. Primarily, this land is used to grow soybeans, for hay/pasture, and to grow corn, with cropland accounting for more land than pasture. There are no commercial livestock rearing operations in the coastal zone. Neither agriculture nor livestock is considered a source of water quality impairment of any lake or stream in the coastal zone. Land once used for agricultural in the coastal zone has tended to be converted to other uses (IDNR and IEPA 2014).

3.3.4.3 Forestry

Approximately 3.7 square miles (2,400 acres) of the coastal zone is forested, but there is no commercial forestry within the coastal zone. Of the forested land, 54% is publicly owned, leaving only 1.7 square miles (1,100 acres) of forest owned by a number of different private land-holders. Remaining forests are small and fragmented, except for protected parks and forest preserves. Privately owned forested areas, for the most part, are not being logged, and forest fragmentation would make timber harvests on private lands inefficient. The publicly-owned forests are not used for commercial forestry. There are no commercial sawmills in the coastal zone. Illinois has urban forestry management programs. Continued urban growth may result in the conversion of some acres that are now forested to other land uses. Forestry has not been identified as a source of water quality impairments of any stream or lake in the coastal zone (IDNR and IEPA 2014).

3.3.5 Water Use

3.3.5.1 Water Supply and Demand

In the coastal zone, water has many uses, including agriculture, drinking and domestic uses, industrial purposes, commercial operations, power generation, navigation, recreation, fish

and wildlife habitat, maintaining water quality, and sustaining the biological integrity of surface water bodies. The Illinois State Water Survey (ISWS) collects data on water quantity and quality in the state. Overall, its projections estimated that the six counties in northeastern Illinois would use approximately 1.5 billion gallons of water per day for public water supply, industry, and rural uses (including irrigation, livestock, and domestic water), but not including water needed for power generation (ISWS n.d.a). The FEIS summarizes water usage in the Illinois coastal zone on pages 47-49, which are incorporated by reference. In short, it discusses two sources of water in Illinois, groundwater and surface water. Information from that subsection is summarized below, along with information drawn from supplemental sources.

The sources of water in northeastern Illinois are water from Lake Michigan (69% of water used), water from rivers (14%), and groundwater (17%) (Chicago Metropolitan Agency for Planning 2010). The amount of water that can be diverted by Illinois from Lake Michigan is governed by a U.S. Supreme Court consent decree, as a result of the 1930 *Wisconsin vs. Illinois* case. The consent decree was amended multiple times, including in 1967, at which time the amount of water Illinois could divert from Lake Michigan to the Illinois waterway was set at an average of 3,200 cubic feet per second (about 2.1 billion gallons per day) (Wisconsin vs. Illinois, 388 U.S. 426 (1967)). A set of 1980 amendments allowed the average of 3,200 cubic feet per second to be calculated over a 40-year period and set higher limits for individual years, including years with extreme hydrologic conditions (up to 3,840 cubic feet per second). The 1980 amendments indicated that allocation of Lake Michigan water to new users should give priority to domestic users with a goal of reducing use of the limited groundwater supply from the Cambrian-Ordovician aquifer (*Wisconsin vs. Illinois*, 449 U.S. 48 (1980); NOAA and IDNR 2011).

A 2010 plan developed by the Chicago Metropolitan Agency for Planning (CMAP) is intended to help ensure that sufficient clean water is available for household, commercial, and other users through 2050. It also discusses water use (both supply and demand) in northeastern Illinois extensively. Among other facts, it notes that, as of 2005, almost 60% of Illinois' water allocation from Lake Michigan was used for drinking and other domestic purposes, generally through public water supplies (CMAP 2010; ISWS n.d.b.). As of 2005, about one-quarter of Illinois' allocation is stormwater runoff that would have originally recharged Lake Michigan, but which falls instead into watersheds that have been diverted so that they eventually drain to the Mississippi River. Almost 10% of the allocation is used for discretionary diversion to maintain the Chicago Sanitary and Ship Canal, although the amount diverted to this canal is planned to decline. Another almost 2 percent of Illinois' Lake Michigan allocation flowed through the lock system in waterways connected to Lake Michigan, less than 1 percent was used for navigational make-up water, and less than 1 percent was allocated to leakage (CMAP 2010). Communities in Lake, Cook, DuPage, and Will Counties, as well as a small part of Kane County, use water from Lake Michigan for drinking water and other domestic purposes (ISWS n.d.c.).

Groundwater from a few area aquifers is also used for drinking water and other purposes. Aquifers commonly used include the very deep St. Peter and Ironton-Galesville sandstone formations, which are subsets of Ordovician and Cambrian formations, respectively. The typical stratigraphy encountered in northeastern Illinois is illustrated in Figure 2 of a 2002 report (incorporated by reference) prepared for ISWS, which describes groundwater use in the eight

counties closest to Chicago. Over time, water levels in some aquifers declined due to high usage, and the cost of pumping water from them increased. Nonetheless, groundwater remains an important water source for many suburbs of Chicago. In 1979, deep bedrock withdrawals (primarily from within the Ordovician-Cambrian system) totaled more than 180 million gallons per day. In 2000, that had dropped to approximately 70 million gallons per day. Water usage data are approximate because reporting is voluntary, and not all users report the volume of water they use (Burch 2002; ISWS 2013; NOAA and IDNR 2011).

3.3.5.2 The Tunnel and Reservoir Project

The Tunnel and Reservoir Project (TARP) is the Metropolitan Water Reclamation District of Greater Chicago's plan to protect Lake Michigan and other water bodies from contamination with raw sewage, improve water quality in area surface water bodies, and store flood water after storms. Raw sewage reaching area waterways has been a problem during storms in areas where there are combined sewers (sewers that carry sanitary water and stormwater). In particular, during some rain events, when treatment plants that the sewer systems drain to could not accommodate all the flow, sewage would overflow to the local waterways, previously more than 100 times per year, from over 600 outfalls. There are CSOs on the North Shore Channel, North Branch Chicago River, Chicago River, South Branch Chicago River, South Fork South Branch Chicago River, and Calumet River that discharge during extreme storm events. Sometimes, particularly large storms would overwhelm the water system and engineers would be forced to reverse the flow of some of the waterways engineered to drain to the Des Plaines River, releasing raw sewage into Lake Michigan, to prevent flooding. (The reversal of flow occurs when the lock or sluice gates at Wilmette Pumping Station, the Chicago River Controlling Works, or O'Brien Lock and Dam are opened.) Opening the lock or sluice gates when needed for flood protection is allowed by the U.S. Army Corps of Engineers and is regulated under the Clean Water Act (NOAA and IDNR 2011; IDNR and IEPA 2014; Metropolitan Water Reclamation District of Greater Chicago n.d.).

The water quality impacts resulting from these types of circumstances led to the development of the TARP, initiated in 1972. The first phase of the TARP, completed in 2006, includes a tunnel system for water storage to reduce CSOs; water stored in the tunnels is pumped to sewage treatment plants when they can handle the load. If the tunnel becomes full, then combined sewers still overflow into the CAWS. The Metropolitan Water Reclamation District is under a 2011 consent decree to reduce untreated sewer discharges, including by completing the TARP and implementing a program to reduce stormwater runoff. The second phase of the TARP consists of three reservoirs for flood control, which will also help control pollution. Plans for the TARP project call for its completion by 2029. So far, the Gloria Alitto Majewki Reservoir has been constructed, reducing flood damage to three communities. The Thornton Reservoir was recently completed, and it was expected to provide an estimated $40 million worth of water quality benefits to (and reduce flooding in) 15 communities, including the south side of Chicago and several suburbs of Chicago in Cook County. It captures stormwater that previously would have entered the Cal-Sag Channel and Little Calumet River, among other water bodies. The TARP is discussed in brief in the 2011 FEIS and the Illinois Submittal and in depth at https://www.mwrd.org/irj/portal/anonymous/tarp. According to the Metropolitan Water Reclamation District, the TARP was named by EPA as "one of the nation's top Clean Water Act

success stories and is serving as a model urban water management tool worldwide" (Ellis 2016; NOAA and IDNR 2011; IDNR and IEPA 2014; Metropolitan Water Reclamation District of Greater Chicago n.d.).

3.3.5.3 Recreational Use of Water Resources

Each year, there are more than 20 million visitors to the Lake Michigan shoreline, including more than 2 million visitors to Illinois Beach State Park (IDNR and IEPA 2014). As the FEIS explains:

> No recreational resource is used more than the public venues within the Illinois coastal zone. This includes the open-water area of Lake Michigan, the network of lakeshore parks and open space that extend along the Illinois coast, the museums and public gathering areas that are a prominent part of the Chicago lakefront, the tour boats and pleasure craft that use the Inland Waterways, and the boaters and fishing enthusiasts that frequent the many small-boat harbors and marinas. [NOAA and IDNR 2011]

There is more lakeshore parkland than there are lakeshore public beaches in Illinois, and both are popular with visitors (NOAA and IDNR 2011). The above subsection devoted to Physical Shoreline and Beaches summarized information from the Program Document about the approximately 60 beaches along the Lake Michigan shoreline. There is one underwater SCUBA park off of Chicago, the Rachel Carson Scuba Park, along with other recreational dive sites off the Chicago lakeshore (NOAA and IDNR 2011).

The Illinois Submittal indicates that there are a total of 32 marinas in the Illinois coastal zone, providing a total of approximately 9,300 slips. Of these, 23 marinas are in Chicago. The others are in Blue Island, Lake Forest, Dolton, Winthrop Harbor, Highland Park, Riverdale, Waukegan, Wilmette, and at the Great Lakes Base. The largest marina, North Point Marina, is in Winthrop Harbor and has more than 1,500 slips. Figure 5-1 of the Illinois Submittal depicts the marinas (IDNR and IEPA 2014). More detailed information about boating access and marinas along the Lake Michigan shore and the inland waterways included in the Program Document on pp. 63-65 is incorporated by reference. That subsection outlines the locations of twelve recreational harbors and marinas along Lake Michigan and the operators of each. It also notes an absence of public marinas and launch facilities on some of the inland waterways, including the Chicago River and the North Shore Channel, except for a canoe and kayak launch in Skokie. There are no boat launches along the Grand Calumet River and two public boat launches on the Inland Waterway segment of the Little Calumet River. However, there are commercial boatyards along the North and South Branches of the Chicago River and along the Little Calumet River that provide boat launching and storage services. The Program Document further explains that some of the Chicago harbors have ramps that allow boats to be launched from trailers, but large boats may require the services of a commercial boatyard on the inland waterways (IDNR 2011).

3.3.5.4 Hydromodification Activities

Any physical alteration of a stream that alters flow is "hydromodification." Some of the major hydromodification projects undertaken in the coastal zone and vicinity were described above, in the subsection devoted to hydrology. In short, over time, there have been numerous large-scale projects that have dramatically altered hydrology and hydraulics. These projects have been designed to facilitate navigation, manage wastewater, protect water quality and urban infrastructure, and reduce flooding. In addition, much of the shoreline and many riparian areas have been hardened, culvertized, and otherwise modified. Revetments along the Lake Michigan shoreline were originally built in the early 20th Century. In the 1990s, the U.S. Army Corps of Engineers started to replace the original revetments and stabilize beaches along long reaches of the lakefront, as part of the Chicago Shoreline Reconstruction Project. The Illinois Submittal cites documents that contain more information about hydromodification efforts, including publications by the Metropolitan Water Reclamation District of Greater Chicago (IDNR and IEPA 2014).

3.3.6 Illinois Coastal Management Program

In January 2012, NOAA approved the Illinois Coastal Management Program, which has the same boundaries as the coastal nonpoint program. The description of the ICMP from the Illinois Program Document (IDNR 2011) is incorporated by reference. See also ICMP's homepage at www.dnr.illinois.gov/cmp/Pages/default.aspx. IDNR, which is responsible for implementing the ICMP, coordinates with IEPA and other agencies. Both IDNR and IEPA have statutory authorities and enforceable policies that address regulating land and water uses, controlling development, and resolving conflicts among competing uses. ICMP has a Technical Advisory Committee, designed to provide a forum for state agency input, consistency review, and coordination among state or local agencies on projects or issues that could affect land and water resources within the coastal zone. This committee is the central mechanism for ensuring that all State agencies exercising their authorities within the coastal zone adhere to the ICMP policies and management techniques. The ICMP has a Coastal Advisory Group to extend coordination efforts beyond state agencies. This group includes representatives of the Chicago Metropolitan Agency for Planning, Metropolitan Water Reclamation District of Greater Chicago, Alliance for the Great Lakes, Lake County Stormwater Management Commission, Lake County Forest Preserve District, Forest Preserve District of Cook County, Chicago Wilderness, Lake Michigan Ecosystem Partnership, Lake Calumet Ecosystem Partnership, Friends of the Chicago River, Illinois International Port District, coastal municipalities, and the Office of the Lieutenant Governor. The roles of the Coastal Advisory Group are to: assist in identifying areas or emerging issues meriting special program attention; provide recommendations on priorities for studies/projects to be included in the annual grant application cycle; provide recommendations on policy direction, comprehensive coastal resource management issues, and long term development goals in administering the ICMP; and assist with conflict resolution (IDNR 2011).

For more information about ICMP and about NOAA's approval decision, see the associated FEIS (NOAA and IDNR 2011). The FEIS related to NOAA's approval decision, published in December 2011, resulted in a Finding of No Significant Impact. NOAA's approval of ICMP also activated federal consistency procedures in Illinois, which ensure that federal activities, federally-licensed and permitted activities, and federal assistance to state and local governments are consistent with the enforceable policies of the ICMP. ICMP provides for

procedures for considering regional and national interests in planning and siting facilities of greater than local importance, including decisions relating to ports, highways, rail networks and air transportation; national defense; energy and government facility siting; threatened and endangered species (pursuant to the ESA); recreational uses and areas; controlling the spread of invasive species; and others.

In December 2013, Illinois released its Lake Michigan Implementation Plan to help guide ICMP's direction, including by setting programmatic and funding priorities for coastal grants for the following three to five years (see https://www.dnr.illinois.gov/cmp/Pages/ILMIP.aspx). Among other initiatives ICMP highlighted in the plan were efforts to support habitat management, public access and recreation, coastal resilience, and the Millennium Reserve in the Calumet Region (ICMP 2013a). Illinois uses its CZMA section 306 funding, which has totaled approximately $2 million per year since FY2012, and matching funds for the following types of projects, among others:

- ICMP program management;
- shoreline management planning, including harbor planning and convening stakeholders to discuss issues related to shoreline erosion and accretion;
- management, interpretive and other support at coastal public access sites, including at Illinois Beach State Park and William Powers Recreation Area;
- staff support for beach health assessments and planning related to public access sites;
- enhancements and educational opportunities at public access sites;
- technical assistance related to reducing coastal nonpoint pollution;
- coastal water quality protection, including promoting the Clean Marina Initiative, planning related to "green infrastructure" (i.e., installing stormwater management projects designed to preserve, restore, or mimic natural hydrology), and supporting outreach about stormwater management and other coastal water quality issues;
- coastal habitat management, planning, and restoration;
- planning, outreach, and other projects related to coastal hazards, including climate change;
- community planning and other planning efforts related to development, redevelopment, and restoration in coastal ecosystems;
- technical assistance to local units of governments;
- coordinating government and public involvement in coastal decision-making;
- coastal resource research and monitoring; and
- support for educating students, residents, and visitors about coastal resources.

Some ICMP funding is made available to state and local agencies, non-governmental organizations, academia, and other entities through "pass-through grants." For information about the projects ICMP funded via pass-through grants to sub-recipients over the past three years, many of which are still underway, see http://www.dnr.illinois.gov/cmp/Pages/grants.aspx. This funding has supported master planning in coastal areas, habitat restoration planning, environmental education opportunities for kids, other outreach and educational activities, enhancement of natural areas and public access sites, comprehensive planning, and other needs.

3.3.7 Illinois Nonpoint Source Management Program

In January of 1990, EPA initially approved the Illinois Nonpoint Source (NPS) Management Program. The program was approved for enhanced benefit status in October of 2000. The program is spearheaded by IEPA. Its mission is to:

- establish and implement effective, integrated, and holistic actions for the abatement and prevention of known and presumed water quality impairments ensuing from NPS pollution;
- foster multi-agency cooperation and local stakeholder input on the development, maintenance, implementation, and evaluation of the statewide NPS action plan;
- safeguard water quality from NPS pollution, consistent with the social and economic needs of the state, to protect health, welfare, property, and the quality of life; and
- satisfy the informational and procedural requirements of a state NPS management program as stipulated under section 319 of the CWA and associated federal guidance.

EPA's approval of the Illinois NPS Management Program made Illinois eligible for grant money under section 319 of the CWA to support both base IEPA costs and individual projects proposed by other entities. On average, over the past 10 years, Illinois EPA has used approximately 35% of its Section 319 funds[6] for the state Nonpoint Source Management Program, i.e., for its operating costs. However, the remainder of the Section 319 funding allocated to Illinois is made available by IEPA through a financial assistance program to other entities. That funding can support several types of projects: development or implementation of a watershed based plan, TMDL, or NPS load reduction strategy; BMP implementation to reduce NPS pollution, outreach activities, and monitoring or research (IEPA 2015a).

Projects that implement components of an approved watershed-based plan receive priority for Section 319 funding. Also, there is a five-year rotation system for specific watersheds to receive priority for section 319 funding in Illinois. Every year, one-fifth of the watersheds are a priority for planning to address nonpoint source pollution. Two years later, those same watersheds are a priority for watershed plan implementation. Almost all of the coastal zone falls in the areas that were a focus of IEPA grants for nonpoint source implementation in FY2015 and will be a focus for further nonpoint source planning funds in FY2018 (as well as additional implementation funds in FY2020) (IEPA 2014c). While much of the coastal zone is not subject to any watershed-based plan (which makes those areas less likely to receive section 319 funding), there is a TMDL for Lake Michigan beaches. Also, an Upper North Branch Chicago River Watershed TMDL is under development (IEPA 2016b). Nonpoint source management grants funded by EPA in Illinois have addressed nonpoint sources of pollution through numerous local projects and have improved coordination on the development and implementation of watershed plans, TMDLs, and load reduction strategies. The grant program has also funded technical assistance, tools, monitoring efforts, and guidance documents, such as the "Illinois Urban Manual." Additional information about the projects that Section 319

[6] Between FY2000 and FY2004, IEPA received approximately $8.1-$9.5 million per year under section 319; between FY2005 and FY2010, IEPA received $6.0-$7.5 million per year; between FY2011 and FY2015, IEPA received $5.6-$6.3 million per year.

has funded in Illinois is incorporated by reference from “Section 319 Biannual Reports” (IEPA 2015a, 2015b, 2016b).

The March 2016 “Section 319 Biannual Report” for Illinois includes tables showing the percent of the portions of streams and lakes assessed that were impaired for at least one use over time. These tables provide some information about changes in water quality over time, but it should also be noted that the designated uses for some individual water bodies have changed over time, and hence the applicable water quality standards have changed (these changes must be approved by EPA). There are more than 900 streams and almost 90,000 lakes (more than 3,000 of which are more than 6 acres) in Illinois (IEPA n.d.). In 1992, 33% of stream miles assessed were impaired due to nonpoint pollution and 22% were impaired due to point and nonpoint sources. That was around the effective date of the NPDES Phase I stormwater permit requirements, which applied to medium and large municipalities, as well as certain types of industrial activities. After more than 10 years of section 319 investments, in 2002, 21% of streams assessed were still impaired due to nonpoint pollution and 11% were impaired due to point and nonpoint source pollution. By then, NPDES Phase II stormwater permit requirements, which apply to smaller municipalities in urbanized areas and a larger number of construction sites (those at least an acre in size), had taken effect. Despite implementation of these additional requirements and diverse efforts to reduce nonpoint pollution, the percentage of streams impaired due to nonpoint pollution has increased steadily each time it was assessed since 2002. In 2014, 52% of streams were impaired solely due to nonpoint sources. The percentage of streams impaired due to both nonpoint and point sources has fallen very gradually since 2002; it was 8% in 2014. Thus, the estimated percentage of streams where additional actions addressing nonpoint pollution are still needed to meet water quality standards for designated uses in 2014 was approximately 60%. This dataset also reveals that the state has had some success at reducing point sources of pollution. In 1992, 41% of lakes were impaired for at least one use due to nonpoint pollution, and another 50% were impaired due to nonpoint and point source pollution. By 2002, the percentage of lakes impaired due only to nonpoint pollution jumped to 64%, whereas the percentage of lakes impaired due to both nonpoint and point sources that year had fallen to 30%. Each assessment since 2006 has shown that approximately 97-99% of lakes assessed in Illinois are impaired due to either point and nonpoint sources or due solely to nonpoint pollution (IEPA 2016b).[7]

4.0 ENVIRONMENTAL CONSEQUENCES

Section 6217 requires the geographic scope of each coastal nonpoint program to be sufficient to ensure implementation of management measures to "restore and protect coastal waters." NOAA and EPA will not approve a state coastal nonpoint program if its geographic scope does not encompass the land and water uses having a "significant" impact on a state's coastal waters because a program that does not control the significant land and water uses cannot be expected to "restore and protect coastal waters." As noted in Section 3.1.1, the 96.5 square miles within the proposed Illinois coastal nonpoint management area includes lands within two distinct areas: the Lakeshore Boundary and the Inland Waterway Corridors. Illinois’ coastal

[7] It should be noted that, without knowing how many waterbodies have had their designated use modified over time, it is uncertain to what extent the data from the summary table conveys absolute changes to water quality over time.

nonpoint management area boundary aligns with the state's coastal zone boundary, Wisconsin's approved coastal nonpoint management area to the north, and Indiana's approved coastal nonpoint management area to the east. NOAA and EPA propose find that Illinois' proposed boundary is sufficient to control the land and water uses that have or are reasonably expected to have a significant impact on the waters along Illinois' Lake Michigan coast. Therefore, NOAA and EPA propose to approve Illinois' proposed 6217 management area boundary. The below discussions include information about the environmental consequences of management measure implementation and the federal approval decision on Illinois' coastal nonpoint management area.

For its coastal nonpoint program to be approved, a state must also identify and map critical coastal areas that need additional measures to protect against current and anticipated nonpoint pollution problems. Illinois identified a critical coastal area based on applying a buffer strip along the shoreline adjacent to impaired coastal waters. Illinois considers the entire 63-mile length of the Lake Michigan coast to be a critical coastal area and includes a buffer length of 0.25 miles from the shoreline, which in many places will include the full width of the coastal nonpoint program management area. This is because, largely as a result of intensive urban land use over time, nearly all of the waters within or adjacent to the state's coastal nonpoint management area are impaired in some manner (although most are not due to nonpoint sources). NOAA and EPA propose to find that Illinois' program identifies and includes a process for the continuing identification of critical coastal areas adjacent to impaired and threatened coastal waters.

4.1 Consequences of Management Measure Implementation

Management measures are defined in section 6217 as economically achievable measures to control the addition of pollution to coastal waters, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives. As required by CZARA, EPA developed guidance (EPA 1993) specifying management measures for agriculture, forestry, urban development, marinas and recreational boating, and hydromodification nonpoint source categories, and for wetlands, riparian areas, and vegetated treatment systems. Coastal nonpoint programs must provide for the implementation of management measures that are in conformity with this guidance. The guidance also lists and describes example best management practices that EPA has found to be representative of the types of practices that can be applied successfully to achieve the management measure requirements. States must have processes in place that provide for the implementation of the measures. State programs are not required to implement specific practices but have the flexibility to choose practices consistent with the management measures that will work best for the state.

NOAA's PEIS discussed the 56 management measures and their function in preventing environmental degradation caused by the pollutants associated with each nonpoint source category (NOAA 1996). Each coastal nonpoint program must address each of the management measures by either: (1) providing for the implementation of that measure or an alternative that is as effective; or (2) justifying why the management measure is not included in the program.

4.1.1 Impacts to the Physical and Biological Environment of Management Measure Implementation

The proposed Illinois coastal nonpoint program would provide for the implementation of management measures for the marinas and recreational boating nonpoint source categories, for some of the elements of the urban development and hydromodification nonpoint source categories, and for the protection of wetlands, riparian areas, and vegetated treatment systems. In some cases, NOAA and EPA are proposing conditions for full approval of management measures to ensure that the state's program will conform to applicable guidance documents. Illinois' proposed Coastal Nonpoint Pollution Control Program includes a total of 26 management measures, listed in Table 9-1 of the Illinois Submittal (IDNR and IEPA 2014).

Illinois requested a number of exclusions. Exclusions may be approved either when a nonpoint source category or subcategory is not present or reasonably anticipated in the management area or when a source of nonpoint pollution does not, and is not reasonably expected to, individually or cumulatively, present significant adverse effects to coastal waters (NOAA and EPA 1993). Illinois requested state-specific exclusions for the agriculture and forestry source categories (and associated management measures), as well as several urban management measures (including new onsite disposal systems; operating onsite disposal systems; construction site erosion and sediment control; and construction site waste and chemical control) and one hydromodification management measure (protection of surface water quality and instream and riparian habitat for dams). Also, Illinois requested exclusions from a number of management measures because they are regulated by the NPDES permit program. In particular, Illinois requested exclusions from the urban management measures pertaining to new development; existing development; road, highway, and bridge operation and maintenance; and road, highway, and bridge runoff systems, all of which NOAA and EPA determined are no longer subject to requirements of the CZARA Section 6217 Coastal Nonpoint Pollution Control Program due to their coverage by the NPDES stormwater permit program throughout Illinois' coastal zone. Also, four urban management measures (construction site erosion and sediment control; construction site chemical control; road, highway, and bridge construction; and road, highway, and bridge construction site waste and chemical control) and two hydromodification management measures (erosion and sediment control for dams and chemical and pollutant control for dams) are no longer applicable nationwide because NPDES stormwater regulations for industrial activities on construction sites apply nationwide, including in Illinois' coastal nonpoint management area. Table 5 lists the requested exclusions that NOAA and EPA propose to grant and the reasons for each. NOAA and EPA propose to grant all requested exclusions except for the operating onsite disposal systems management measure, discussed below. The full text of all management measures and a statement of their applicability can be found in Appendix B.

Table 5. Management Measure Exclusions NOAA and EPA Propose To Grant

Nonpoint Source Category	Management Measure(s)	Reason
Agriculture	All management measures	*De minimus* impact – <0.7% of the coastal zone is cropland and <0.5% is pasture

Nonpoint Source Category	Management Measure(s)	Reason
Forestry	All management measures	*De minimus* impact – there is little to no commercial forestry in the coastal zone and only 4% of land in the coastal zone is forested (half of which is publicly-owned)
Urban Runoff	New development	Covered under NPDES Phase I and II stormwater permit programs in the coastal zone
Urban Runoff	Existing development	Covered under NPDES Phase I and II stormwater permit programs in the coastal zone
Urban Runoff	New onsite disposal systems (OSDS)	*De minimus* impact – new development would be hooked up to new sewer systems, not OSDS
Urban Runoff	Construction site erosion and sediment control	Covered under NPDES Phase I and II stormwater permit programs in the coastal zone
Urban Runoff	Construction site waste and chemical control	Covered under NPDES Phase I and II stormwater permit programs in the coastal zone
Urban Runoff	Road, highway, and bridge construction	Management measure no longer applicable nationwide due to NPDES regulations
Urban Runoff	Road, highway, and bridge construction site waste and chemical control	Management measure no longer applicable nationwide due to NPDES regulations
Urban Runoff	Road, highway, and bridge operation and maintenance	Covered under NPDES Phase I and II stormwater permit programs in the coastal zone
Urban Runoff	Road, highway, and bridge runoff systems	Covered under NPDES Phase I and II stormwater permit programs in the coastal zone
Hydromodification	Effects of dams and flow alterations	Management measure applies to dams that meet criteria related to their height and capacity; the dams in the coastal zone do not meet the criteria
Hydromodification	Erosion and sediment control for dams	Management measure no longer applicable nationwide due to NPDES regulations
Hydromodification	Chemical and pollutant control for dams	Management measure no longer applicable nationwide due to NPDES regulations
Hydromodification	Protection of surface water quality and instream and riparian habitat for dams	Management measure applies to dams that meet criteria related to their size and capacity; there are no dams that meet these criteria in the coastal zone, and no new dams meeting the criteria are likely to be built in the future

(Source: IDNR and IEPA 2014)

4.1.1.1 Agricultural Nonpoint Pollution Source Category

There is very little agriculture in the coastal zone. Section 3.3.4.2 summarizes data from Table 3-1 of the Illinois Submittal related to the amount of land in the Illinois coastal nonpoint management area used to grow different crops (approximately 425 acres total) and used for pasture (299 acres). Together, these land uses are found within only 1% of the coastal zone. Figure 3-1 in the Illinois Submittal shows the land areas within the coastal zone used for agriculture. Table 3-1 and Figure 3-1 are incorporated by reference. Table 3-1 indicates that, in the coastal nonpoint management area, the most prevalent crops are soybeans (308 acres), pasture/hay (299 acres), and corn (103 acres). Several other crops are farmed in very small portions of the coastal zone, equal to 6 acres or less per crop. Figure 3-1 shows that most of the agricultural land is in the northern portion of the coastal zone, except for a few small parcels west of Wolf Lake. There are a number of small areas used for agriculture in Waukegan, and most of the remaining cropland parcels of sizes large enough to be visible in Figure 3-1 are north of Waukegan. Lands used for pasture and hay are more scattered. (There are a few small pasture/hay parcels in the southernmost portion of the coastal zone, a number of others in Lake Forest, and a few in Lake Bluff and North Chicago. Most of the rest are in Waukegan and areas to its north, especially in the northwestern corner of the coastal zone.)

Continuing urbanization in the Chicago metropolitan area is contributing to pressure to convert land to residential or recreational uses, and agriculture is therefore unlikely to grow within the Illinois coastal zone. As agricultural areas become fragmented, it might become less economically viable for commercial agricultural operations to continue running. Further, there is no commercial rearing of livestock in the state's coastal nonpoint management area. Illinois' nonpoint source assessments, including its 2014 "Integrated Water Quality Report," indicate that neither cropland nor livestock rearing is a source of water quality impairment affecting any lake or stream in the Illinois coastal nonpoint management area. This suggests that the agricultural practices that occur in the coastal nonpoint management area have *de minimus* impacts on coastal waters (IDNR and IEPA 2014).

Illinois has not identified any agricultural management measures because it requested an exclusion for the agriculture source category on the basis that it does not and is not reasonably expected, individually or cumulatively, to present significant adverse effects to coastal waters. There are only insignificant amounts of cropland and pastureland in agricultural production within Illinois' coastal nonpoint management area, and the prospects for agricultural production in this area in the foreseeable future are diminishing (IDNR and IEPA 2014).

Proposed Finding

NOAA and EPA propose to find that Illinois has provided sufficient justification to support a categorical exclusion of agriculture from its coastal nonpoint program and therefore propose to approve Illinois' exclusion request for the agricultural management measures.

4.1.1.2 Urban Nonpoint Pollution Source Category

Chapter 4 of EPA's 1993 report on "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters" addresses Urban Areas and is incorporated by reference. Section I.F of that chapter provides background information about urbanization and its impacts (including impacts to hydrology, e.g., from conversion of land to uses that increase the amount of impervious surface, which increases runoff volumes and pollutant loadings). In addition, the section includes information about nonpoint source pollutants in urban runoff and their impacts (EPA 1993).

Most land in the Illinois coastal zone is urban. A land cover analysis conducted by the Chicago Metropolitan Agency for Planning (CMAP) indicated that there are more than 66 square miles of urban lands, comprising approximately two-thirds of the coastal zone (not including areas where there are forests, open space, wetlands, or water bodies within areas that are otherwise urban) (IDNR and IEPA 2014). For more information about the types of urban land uses currently found in the coastal zone, see section 3.3.4.1 of this draft PEA and Table 1-1 in the Illinois Submittal. The methodology used by CMAP to determine the land use category for lands in northeastern Illinois changed prior to its release of its land use inventory for 2010, making it difficult to assess land use trends over time from these data (CMAP 2014). However, overall, population growth and the influx of additional residents are expected to continue. Within the next 15 years, the population of Cook and Lake Counties is projected to grow from approximately 6 million people to 6.8 million people. Some of the non-urban land that is not set aside and protected from future development is likely to be converted to urban land uses (IDNR and IEPA 2014).

Across all impaired waters in the coastal zone, urban runoff and storm sewers were a source of impairment affecting 7.5% of impaired segments, according to Table 8-4 of the Illinois Submittal (IDNR and IEPA 2014). As noted above, urban runoff/storm sewers were a source of impairment along 0.06 square miles of Lake Michigan harbors and 0.8 square miles of Lake Michigan shoreline, as of 2014. Data for streams that are tributaries to Lake Michigan were not summarized separately from data for streams in other watersheds in the "Illinois Integrated Water Quality Report" (IEPA 2014a, 2016a). However, the causes of impairment, probable source of impairment, and other data about streams in the coastal zone are summarized in Table 8-2 of the Illinois Submittal; urban runoff/storm sewers are a probable source of impairment to the portion of the CAWS within the coastal zone — including the North Shore Channel, the North Branch of the Chicago River, the South Branch of the Chicago River, the Little Calumet River South, the Grand Calumet River, the Little Calumet River North, the Cal-Sag Channel, and the Chicago Sanitary and Ship Canal. There are also numerous other probable sources of impairment affecting different components of the CAWS, including contaminated sediments, atmospheric deposition, upstream impoundments, municipal point source discharges, CSOs, hydromodification, and highway/road/bridge runoff (unrelated to construction) (IDNR and IEPA 2014).

All the management measures for urban sources, their applicability, example management practices, estimated effectiveness, and other information are described in section II of Chapter 4 in the "Guidance Specifying Management Measures for Sources of Nonpoint

Pollution in Coastal Waters," incorporated by reference (EPA 1993). For additional information about the individual management measures, please see that document, also known as the §6217 (g) guidance.

The following types of nonpoint pollution can affect urban areas and are discussed in the Illinois Submittal:

- Runoff from developed and developing areas
- Runoff from construction sites
- Runoff from existing development
- Onsite disposal systems (OSDS)
- General sources (households, commercial, and landscaping)
- Roads, highways, and bridges

The Environmental Consequences section of the 1996 PEIS for the Coastal Nonpoint Pollution Control Program, incorporated by reference, contains a description of the primary pollutants in urban runoff and an analysis of water quality impacts (NOAA 1996). The management measures proposed by Illinois are designed to prevent the environmental degradation caused by these pollutants. Implementation of management measures for urban runoff using the state and local programs and authorities discussed below will result in more consistent and widespread implementation of techniques to control nonpoint source, with environmental benefits. The measures will minimize the transport of sediment, suspended solids, and other pollutants (pesticides, fertilizers, petrochemicals, road salt, etc.) to receiving waters. For example, the measures will require that roads, highways, and bridges be sited, constructed, operated, and maintained in order to protect sensitive ecosystems and require source reduction and erosion control practices to reduce transport of sediment, road salt, and other pollutants. The implementation of management measures for urban runoff will promote watershed protection, reduce the generation of nonpoint source pollutants, and control runoff and pollution associated with site development, ultimately providing environmental benefits.

Illinois requested exclusions from ten of the urban source management measures (see below and Table 5). For the reasons explained below, NOAA and EPA propose to grant all the requested exclusions except one: the agencies propose a condition related to excluding the existing onsite disposal systems management measure. The five management measures for urban sources that Illinois proposes to include in its coastal nonpoint program are:

- Watershed protection
- Runoff from site development
- Pollution prevention
- Planning, siting, and developing roads and highways
- Bridges

NOAA and EPA propose that Illinois must meet the conditions outlined below to fully satisfy the urban management measure requirements. Meeting the proposed conditions will be environmentally beneficial by reducing nonpoint pollution that could reach coastal waters from

failing OSDS; pet excrement; lawn and garden activities; turf management; planning, siting and development of state roads and highways; and siting, designing, and maintaining state bridges.

Management Measures for Urban Areas

1. ***New Development and Existing Development Management Measures***

These management measures are discussed together because both relate to development and both are excluded for the same reason. The new development management measure is intended to address changes in hydrology caused by new development and redevelopment (including new and relocated roads, highways, and bridges), particularly potential increases in suspended sediments, pollutants, and runoff volumes and velocities. This management measure is intended to protect watersheds and their hydrological conditions and reduce erosion, flooding, and the transport of pollutants (particularly suspended solids) associated with development planned without nonpoint pollution reduction strategies in mind. For more information, see pages 4-12 through 4-35 of the §6217 (g) guidance and page 41 of the PEIS (NOAA 1996).

The existing development management measure is intended to be applied to all urban areas and existing development. The management measure aims to reduce surface water runoff pollutant loadings from existing development through watershed management programs that limit surface water runoff volumes and therefore sediment eroded from streambanks; limit destruction of natural conveyance systems; identify priority local pollutant reduction opportunities; and promote buffers along waterbodies that provide water quality benefits. Application of this measure also protects or improves surface water quality through the development and implementation of watershed management programs. More information about this management measure is presented on pages 4-88 through 4-96 of the (g) guidance and pages 43-44 of the PEIS (EPA 1993; NOAA 1996).

NOAA and EPA do not require communities and municipalities with Municipal Separate Stormwater Sewer Systems (MS4s) regulated under NPDES permits to implement the new development or existing development management measures. NOAA and EPA rely on the NPDES program to manage urban runoff from new development and existing development in these jurisdictions. Because the entire Illinois coastal nonpoint management area falls within the geographic scope of NPDES permits for MS4s, NOAA and EPA do not require the state to separately demonstrate conformity with the new development or existing development management measures for any portion of its coastal nonpoint management area. (See the December 20, 2002, joint NOAA/EPA memorandum, “Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Stormwater Regulations.”)

Proposed Finding

NOAA and EPA propose to find that Illinois is exempt from the new development and existing development management measures.

2. ***Watershed Protection Management Measure***

The intent of the watershed protection management measure is to provide comprehensive watershed protection by, among other things, planning for the placement of new development or redevelopment that generates nonpoint pollution and the construction of new and relocated roads, highways, and bridges in a fashion that mitigates the effects of pollution. The management measure establishes general goals for states and local governments to use, as part of developing comprehensive programs to guide development and land use in ways that prevent and mitigate the impacts of nonpoint pollution. In general, the management measure is intended to discourage the development of areas highly susceptible to erosion and sediment loss, preserve areas that offer important water quality benefits or habitat for riparian and aquatic biota, and develop sites in such a way as to protect the natural integrity of waterbodies and natural drainage systems. According to the PEIS, application of this management measure will reduce the generation of nonpoint source pollutants and mitigate the impacts of urban runoff.

More information about this management measure can be found on pages 4-36 to 4-52 of the §6217(g) guidance, incorporated by reference, which includes information about management measure effectiveness, examples of practices supporting the management measure, and examples of watershed management plans and their components. The discussion also notes the flexibility that watershed management planning can afford and that the costs of some recommended approaches, e.g., setting aside streamside buffers, can be less than the cost of structural controls, especially considering operation and maintenance costs of structural approaches. Both the subsection of the §6217 (g) guidance and page 42 of the PEIS, incorporated by reference, describe some of the environmental consequences of approaches to implementing this management measure (EPA 1993; NOAA 1996).

In Illinois, much of the 96.5 square mile coastal nonpoint management area is already fully developed. Most undeveloped areas are set aside as protected open space, so there is very little land that is left to be developed, particularly in Cook County (IDNR and IEPA 2014). Illinois intends to rely on the following programs, tools, and authorities for implementation of the watershed protection management measure:

- In Cook County, the principal tool to control new development and redevelopment is the county's Watershed Management Ordinance, which mandates protections for floodplains, wetlands, wetland buffers, and riparian areas. The WMO requires all developers to incorporate erosion and sediment control practices into initial site plans, with a primary emphasis on erosion control preventative measures; the sediment control measures are the way to control any of the sediment that is eroded. The WMO also includes provisions designed to protect floodplains, wetlands, wetland buffers, and riparian areas. Development may not increase flood elevations or flood velocity, nor should it impair hydrologic function or degrade water quality. Also, developers must assess wetlands on site. Impacts to wetlands are discouraged, protection of riparian features is encouraged, and mitigation practices are identified. The Metropolitan Water Reclamation District has the authority and responsibility for administering the WMO and ensuring compliance (IDNR and IEPA 2014).

- In Lake County, the local Watershed Development Ordinance was established to conserve the beneficial functions of the county's flood-prone areas and wetlands. The WDO generally requires a Watershed Development Permit for developments in floodplains, wetlands,

or depressional storage areas (non-riverine depressions where stormwater collects) with a storage volume of 0.75 acre-feet or more. The WDO requires protection of stream channels, overland flows of stormwater, and water quality treatment areas. The ordinance also regulates activities in floodplains by restricting modification and disturbance of natural riverine floodplains to protect existing hydrologic and environmental functions. The WDO further requires that land disturbances be minimized and negative impacts mitigated. No developments are permitted that alone or cumulatively would create a damaging or potentially damaging increase in flood levels. The Lake County Stormwater Management Commission has also issued a companion "Technical Reference Manual," which includes design guidance for WDO provisions. The Commission has the authority and the responsibility for administering the WDO, but responsibility for enforcement has been taken on by some communities in Lake County (IDNR and IEPA 2014).

EPA requires that any watershed plans for threatened or impaired watersheds developed or implemented with Clean Water Act Section 319 funds contain at least nine elements, discussed in the "Handbook for Developing Watershed Plans to Restore and Protect Our Waters" (see http://water.epa.gov/polwaste/nps/handbook_index.cfm). NOAA and EPA note that although watershed plans have been developed for other areas of Illinois, there are no approved watershed plans for any portion of the coastal nonpoint management area that address EPA's nine recommended elements. CMAP has served as a regional watershed coordinator for various communities in Cook and Lake Counties. The agency also has developed several nine-element watershed-based plans in northeastern Illinois, outside the coastal zone. Through its Local Technical Assistance program, CMAP provides assistance to communities across the Chicago metropolitan region to undertake planning projects that advance the principles of "GO TO 2040," the comprehensive regional plan for greater Chicago. NOAA and EPA recommend that Illinois' coastal localities work through CMAP to develop nine-element watershed-based plans across the coastal nonpoint management area.

Proposed Finding

Based on the referenced authorities, NOAA and EPA propose to find that Illinois' program includes management measures in conformity with the §6217(g) guidance and enforceable policies and mechanisms to implement the watershed protection management measure.

3. ***Site Development***

The site development management measure is intended to encourage planning, design, and development of sites (including roads, highways, and bridges) in ways that protect areas important to water quality and to control impacts of future development on water quality. For example, planning, design, and development of sites could protect areas that provide important water quality benefits, limit land disturbance in areas particularly susceptible to sediment loss, limit increases in impervious surface, and limit disturbance of natural drainage features and vegetation. Application of this management measure will reduce the generation of nonpoint pollution and mitigate the impacts of urban runoff through proper design and development of individual sites. This management measure differs from the new development management measure in that the site development management measure is intended to provide controls and

policies to be applied during the site planning and review process. The goals of the site development management measure and the goals of the watershed protection management measure are complementary.

More information about this management measure and its environmental impacts can be found on pages 4-53 to 4-62 of the §6217 (g) guidance and page 42 of the PEIS, incorporated by reference. The §6217 (g) guidance outlines examples of practices that support the management measure (particularly practices that control erosion during site development and site planning) and respects in which site planning and evaluation can reduce costs. For example, EPA's guidance calls for: site plan review to assure the integrity of areas necessary to maintain surface water quality; development permits to be issued only after erosion and sediment control plans are approved; nonpoint source programs to provide guidance on pollution prevention practices applicable to site development and use; and other goals to be addressed in designing the site development process (EPA 1993; NOAA 1996).

Much of Illinois' 96.5 square mile coastal nonpoint management area is already fully developed, and most undeveloped land is already protected open space. As noted previously, there is therefore very little land left to be developed, particularly in Cook County. Illinois proposes to implement this management measure by relying on the following tools, authorities, and programs:

- In Cook County, the principal tool is the county's WMO, which mandates protections for floodplains, wetlands, wetland buffers and riparian areas, and provides for erosion and sediment control. The WMO mandates new developments meet erosion and sediment control requirements, with the primary emphasis on erosion control preventative measures; the sediment control measures are the way to manage any eroding sediment that is picked up. The ordinance also requires mitigation practices (IDNR and IEPA 2014).

- In Lake County, the local WDO was established to conserve the beneficial functions of the county's wetlands and flood-prone areas. As noted previously, the ordinance requires a Watershed Development Permit for developments in floodplains, wetlands, or depressional storage areas of a certain size. In addition, the WDO protects stream channels, overland flows of stormwater, and water quality treatment areas. The ordinance regulates activities in floodplains by restricting modification and disturbance of natural riverine floodplains to protect existing hydrologic and environmental functions. The WDO's requirements to minimize land disturbances and mitigate negative impacts, prohibition of developments that alone or cumulatively create a damaging or potentially damaging increase in flood levels, and required performance standards related to soil erosion and sediment control (for any development that disturbs 5,000 square feet or more) are also applicable to the site development management measures. The Lake County Stormwater Management Commission's "Technical Reference Manual" helps guide developers on the design of soil erosion and sediment controls, among other topics (IDNR and IEPA 2014).

- Statewide, the Green Infrastructure for Clean Water Act (415 Ill. Comp. Stat. §56), requires IEPA to assess and evaluate the use of green infrastructure to help manage stormwater across the state. The Act defines green infrastructure as "any stormwater management technique

or practice employed with the primary goal of preserving, restoring, or mimicking natural hydrology." Illinois has established financial and technical programs to support green infrastructure programs that mitigate pollution from stormwater. For example, Public Act 98-0782 makes the State Revolving Loan program available for stormwater projects, including green infrastructure, and other projects to control nonpoint pollution (e.g., projects eligible for nonpoint source funding under section 319 of the Clean Water Act, 33 U.S.C. §1329) (IDNR and IEPA 2014).

• IEPA is responsible for the review of Joint Permit applications and issuance of Clean Water Act Section 401 Water Quality Certifications (33 U.S.C. §1341). If IEPA determines that a discharge subject to a 401 Water Quality Certification will affect the quality of its waters in a fashion that would violate any water quality standards in Illinois, the agency has the authority to impose conditions or refuse to issue a license or permit (IDNR and IEPA 2014).

Proposed Finding

NOAA and EPA propose to find that Illinois' program includes the site development management measure in conformity with the §6217 (g) guidance and enforceable policies and mechanisms that allow the state to implement this management measure.

4. ***Construction Site Erosion and Sediment Control and Construction Site Chemical Control***

These management measures are discussed together because they are both excluded for the same reason. The construction site erosion and sediment control management measure is intended to be applied to all construction activities on sites less than five acres in areas that do not have an NPDES permit, and the measure aims to keep erosion and sediment loss from construction sites from affecting surface waters. This management measure minimizes sediment being transported outside the perimeter of a construction site by reducing erosion and retaining sediment on site. The construction site chemical control management measure is intended to prevent the generation of nonpoint pollution at construction sites due to the improper handling and use of nutrients and toxic substances. This management measure reduces the generation of pollutants at construction sites and prevents their movement from the construction site. Both of these management measures are discussed in more detail in section III within Chapter 4 of the §6217 (g) guidance (pages 4-63 through 4-87) and pages 42 through 43 of the PEIS, which are incorporated by reference (EPA 1993; NOAA 1996).

NOAA and EPA no longer require that state coastal nonpoint control programs include either the construction site erosion and sediment control management measure or the construction site chemical control management measure because the NPDES permit application regulations for stormwater associated with industrial activities, including construction activity, apply nationwide (including the coastal nonpoint management areas of the various coastal states and territories). (See the December 20, 2002, joint NOAA/EPA memorandum.)

Proposed Finding

NOAA and EPA propose to find that the Illinois program is exempt from management measures for: (1) construction site erosion and sediment control; and (2) construction site chemical control.

5. ***New Onsite Disposal Systems Management Measure and Operating Onsite Disposal Systems Management Measure***

These management measures are discussed together because they both pertain to OSDS (e.g., septic systems). ICMP reports that the coastal zone is almost entirely sewered. The U.S. Census Bureau stopped collecting data on the number of septic systems after the 1990 Census. However, the data from 1990 show that 99% of households in Cook County had access to public sewers. Throughout Cook County, only 19,560 households used septic systems (or cesspools), and 3,781 households used some means of sewage disposal other than a public sewer, septic system, or cesspool. In Lake County, as of 1990, 84% of households had access to a public sewer. At that time, there were 26,136 households throughout the county using septic systems or cesspools and 411 households using some means of sewage disposal other than a public sewer, septic system, or cesspool (U.S. Census Bureau 1993). The number of households that have been hooked up to public sewers in Lake and Cook Counties since then has not been well-documented, and there is currently no definitive data on the number of households in the coastal zone that use OSDS. However, IDNR and IEPA estimate that there are fewer than 400 households that rely on an OSDS, as discussed below (IDNR and IEPA 2014).

The Metropolitan Water Reclamation District collects and treats sewage in Cook County. The sewer system in Lake County is operated by the North Shore Sanitary District, which does not serve the communities of Winthrop Harbor, Zion, or Beach Park. These 3 communities own and maintain their own sewage collection systems, and the sewage is delivered to the North Shore Sanitary District for treatment. The southern portion of Illinois Beach State Park is served by a sewer system, but the northern portion is not. A permanent building and two trailers used as offices in the northern unit are served by an OSDS rebuilt in 1996. IDNR and IEPA could not ascertain whether there are sewer hookups available to approximately 400 households in the unincorporated portion of Lake County; that is therefore the maximum number of OSDS that the state thinks might exist in the coastal zone. However, according to IDNR and IEPA, the housing density in the unincorporated areas where the availability of a sewer system could not be verified suggests they might be sewered (because typically buildings that use septic systems must be on larger lots). For more details, see section 4.2.4 of the Illinois Submittal (IDNR and IEPA 2014).

The OSDS management measures are intended to protect coastal nonpoint management areas from OSDS pollutant discharge. Illinois requested exclusions from both the new OSDS and operating OSDS management measures. The new OSDS management measure is intended to be applied to each new OSDS (including package plants and small-scale or regional treatment facilities not covered by NPDES regulations) in order to manage the siting, design, installation, and operation and maintenance of all such OSDS. Application of the new OSDS measure prevents conventional OSDS installation in areas where soil absorption systems will not provide adequate treatment of effluents prior to their entry into surface or ground waters.

The operating OSDS management measure is intended to be applied to all operating OSDS. This measure minimizes pollutant loadings from all operating OSDS by requiring that they be operated, modified, repaired, and maintained to prevent discharges of pollutants to the ground surface and to reduce nutrient and pathogen loadings into ground water hydrologically connected to surface water. It also requires OSDS inspections at a frequency to ascertain whether systems are failing and recommends, where necessary, additional measures be considered, such as encouraging the use of low-volume plumbing fixtures. The operating OSDS management measure does not apply to conventional sites that meet all of the following criteria: the wastewater treated comes from a single home; OSDS density is less than or equal to one OSDS per 20 acres; and there is at least 1,250 feet between the OSDS and any surface waters. For more information about these management measures and their potential environmental effects, see section V within chapter 4 of the (g) guidance (pages 4-97 through 4-118) and pages 44 through 45 of the PEIS, both of which are incorporated by reference (NOAA 1996; EPA 1993).

Illinois has provided sufficient justification to support an exclusion of the new OSDS management measure. Illinois' coastal nonpoint management area is nearly completely sewered. Any new development in this area would be connected to existing or new sewer systems. However, NOAA and EPA do not have sufficient information to accept Illinois' proposed exclusion from the operating OSDS management measure at this time. Information is still needed from the state on the number of existing OSDS in the coastal nonpoint management area and the operational integrity of these OSDS. Although records indicate the number may be approximately 400 OSDS, Illinois has not been able to explain its methodology to confirm this number or to determine the condition of these systems. Illinois has the option to demonstrate that there will be no significant impacts to its coastal waters from OSDS or to describe its strategy (or Lake County's strategy) for ensuring that these systems will be inspected, operated, and maintained to prevent the discharge of pollutants.

If NOAA and the EPA determine that Illinois' existing OSDS do not qualify for an exclusion and the state must demonstrate conformity with the operating OSDS management measure, Illinois will not need to meet the third element of this measure—to consider replacing or upgrading OSDS to treat influent so that total nitrogen loadings in the effluent are reduced by 50 percent—because Lake Michigan is not nitrogen-limited. That is, nitrogen loadings contributed by Illinois' OSDS do not degrade water quality in Lake Michigan.

Proposed Finding

NOAA and EPA propose (1) to grant Illinois' request for an exclusion from the new OSDS management measure because the state has provided sufficient justification to support the requested exclusion. Any new development in the coastal nonpoint management area would be connected to existing or new sewer systems, according to IDNR and IEPA. However, (2) Illinois has not yet provided sufficient justification to support an exclusion of the operating OSDS management measure from its coastal nonpoint program, although it may do so in the future. Thus, NOAA and EPA propose the state must address the below conditions to meet the operating OSDS management measure.

Conditions

• Within three years, Illinois shall either demonstrate that it has programs in place to meet the operating OSDS management measure, as described below, or provide sufficient justification to support an exclusion of the operating OSDS management measure from its coastal nonpoint program. An exclusion justification shall include more definitive information on the number of systems within the coastal nonpoint management area, as well as information on the status of these systems, so that NOAA and EPA can determine whether the state would be eligible for an exclusion of the operating OSDS management measure. NOAA and EPA would require information sufficient to determine whether the state or counties have identified the extent to which these systems are being operated and maintained to prevent water quality problems or public health risks. If Illinois does not pursue an exclusion request for the operating OSDS measure, or if NOAA and EPA deny this request, Illinois shall then need to demonstrate that state or local programs, enforceable policies, and mechanisms are in place to: (1) establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants; and (2) inspect OSDS at a frequency adequate to ascertain whether OSDS are failing.

6. ***Pollution Prevention Management Measure***

This management measure is intended to be applied to reduce the generation of nonpoint pollution throughout the coastal nonpoint management area by preventing and reducing pollutant loadings generated from a variety of activities within urban areas not addressed by other management measures in the urban source category. It is meant to ensure that communities implement solutions that result in behavioral changes that reduce the generation of pollutants (sometimes called source reduction), thereby reducing water quality impacts from these sources. Major sources of pollution that is it intended to reduce include: household hazardous waste, lawn and garden waste, pet and urban wildlife waste, waste from the operation and maintenance of motor vehicles, waste from the improper operation and maintenance of OSDS, litter and floatables discharged into storm drains, nonpoint source pollutants from commercial activities not under the NPDES purview, and pollution from turf management at golf courses, parks, and recreational areas.

Additional information about this management measure can be found on pages 4-119 to 4-135 of the §6217 (g) guidance and pages 45 through 46 of the PEIS, which are incorporated by reference. The former reference summarizes analyses of the different source categories falling under the measure and their environmental impacts; it also provides examples of practices that support the management measure (EPA 1993; NOAA 1996).

Illinois does not need to demonstrate that it has programs in place across its coastal nonpoint management area to reduce pollutants generated from the discharge of pollutants into storm drains or commercial activities such as parking lots and gas stations, as these activities are regulated by the NPDES Phase I and II stormwater permit program. Also, the requirement under this management measure to reduce pollutants generated from improper operation and maintenance of onsite disposal systems is duplicative with the operating OSDS management measure, addressed above. The source categories that must be addressed under this measure,

therefore, are: household hazardous waste, lawn and garden waste, pet waste, and pollution from turf management.

Illinois intends to rely primarily on the following authorities and programs to implement portions of the pollution prevention management measure:

• Chicago has special requirements for the disposal of lawn and garden wastes, which are collected biweekly by the Department of Streets and Sanitation from April 1 to November 30. The city also encourages back yard composting (City of Chicago 2015b).

• IEPA coordinates ongoing comprehensive household hazardous waste collections on selected dates in Lake and Cook counties and statewide. IEPA also supports pollution prevention through a variety of education initiatives.

• Local ordinances in at least three jurisdictions (Chicago, Winnetka, and Waukegan) require removal of pet excrement. Pet owners found to violate these ordinances may be fined for each offense by local authorities (IDNR and IEPA 2014).

However. NOAA and EPA note that:

• While Illinois identified City of Chicago programs for disposal of lawn and garden wastes, including a curbside pick-up program, the state should demonstrate how state or county programs are reducing pollutants generated from lawn and garden activities in the parts of the coastal nonpoint management area outside of Chicago.

• Although Illinois has provided information on pet waste ordinances for three municipalities in the coastal nonpoint management area, it has not yet described how compliance is encouraged in these jurisdictions or how pet waste is managed in the other localities in the coastal nonpoint management area, as required by Section 6217.

• Illinois has not yet described how it is reducing pollutants generated from turf management on golf courses, parks, and recreational areas.

Proposed Finding

NOAA and EPA propose to find that Illinois has demonstrated it has programs in place across its coastal nonpoint management area to reduce pollutants generated from household hazardous chemicals. Illinois has not yet demonstrated that it has programs in place across its coastal nonpoint management area to reduce pollutants generated from improper disposal of pet excrement; lawn and garden activities; and turf management on golf courses, parks, and recreational areas. Therefore, NOAA and EPA propose to place the following conditions on their approval of Illinois' pollution prevention management measure.

Conditions

• Within three years, Illinois shall demonstrate that it has programs in place across the coastal nonpoint management area to reduce pollutants generated from improper disposal of pet excrement and turf management on golf courses, parks, and recreational areas. Within three years, Illinois shall demonstrate that it has programs in place across the coastal nonpoint management area, but outside the jurisdiction of Chicago, to reduce pollutants generated from lawn and garden activities.

7. ***Planning, Siting, and Developing Roads and Highways and Siting, Designing, and Maintaining Bridges Management Measures***

These two management measures pertaining to roads, highways, and bridges are discussed together because the state intends to implement them using the same authorities. The management measure for planning, siting, and developing roads and highways is intended to be applied to site development and land disturbing activities for new, relocated, and reconstructed roads and highways to reduce the generation of nonpoint source pollutants and mitigate the impacts of urban runoff and pollution from such activities. The measure emphasizes the planning phase of transportation projects. For example, transportation corridors can be sited in ways that reduce impacts to sensitive ecosystems (particularly those that provide water quality benefits and those particularly susceptible to erosion), roads and highways can be developed in ways that minimize land disturbance and changes to impervious areas, and projects can be designed to maintain natural vegetation and drainage features. Additional information about this management measure, example management practices, and associated environmental consequences is incorporated by reference from pages 4-136 to 4-139 of the §6217 (g) guidance and page 46 of the PEIS.

The management measure for siting, designing, and maintaining bridges is intended to be applied to new, relocated, and rehabilitated bridge structures in order to control erosion, streambed scouring, and surface runoff from such activities by requiring, for example, stormwater runoff from bridges be assessed and managed. This management measure is intended to protect sensitive habitats and areas with important water quality functions, including wetlands, from pollutants running off of bridge decks. Additional information about this management measure, ways to implement it, and the effects of its implementation is incorporated by reference from pages 4-140 through 4-141 of the §6217 (g) guidance and pages 46 through 47 of the PEIS (NOAA 1996; EPA 1993).

Illinois has programs in place to implement the planning, siting and developing management measure for local roads and highways and the siting, designing and maintaining bridges management measure for local bridges, as follows:

• Under the Cook County WMO (designed to address adverse impacts of stormwater runoff), local developments, including local roads and bridges, cannot increase flood velocity, impair hydrologic function, or degrade water quality. Article 5 of the Cook County WMO mandates that all developments incorporate erosion and sediment control practices into their initial site plans and places primary emphasis on erosion control practices as preventative source controls, with sediment control practices secondary. Article 6 of the WMO mandates special protections for floodplains, wetlands, wetland buffers, and riparian areas. Development that

impacts wetlands is discouraged by the WMO, but mitigation is allowed in some cases. Development in the floodplain may not increase flood elevations or decrease conveyance capacity on other properties. The WMO encourages protection of existing riparian functions and requires streambank stabilization, native vegetation planting, and other mitigation practices.

• The Lake County WDO is designed to prevent flood damage to life and property; to assure that local development (including local roads and bridges) does not increase flood or drainage hazards or create unstable conditions susceptible to erosion; and to conserve the natural hydrologic, hydraulic, water quality, and other beneficial functions of flood-prone areas and wetlands in Lake County. Specifically, the WDO establishes a Watershed Development Permit system for developments in floodplains, wetlands, and depressional storage areas, and WDO soil erosion and sediment control standards must be met in areas of a certain size. The permit mandates protection of stream channels, overland flows of stormwater, and water quality treatment areas. If natural channels are proposed for modification, a mitigation plan is required that demonstrates conservation of the physical characteristics of the existing channel, including length, cross-section, slope, sinuosity, and carrying capacity. Revegetation is required using local native plants. The ordinance also regulates activities in floodplains by restricting modification and disturbance of natural riverine floodplains to protect existing hydrologic and environmental functions. It requires minimization of disturbances and mitigation of negative impacts. No developments are permitted that alone or cumulatively create damaging or potentially damaging increases in flood levels. Additionally, the WDO regulates activities in jurisdictional wetlands (those protected under the Clean Water Act) and non-jurisdictional wetlands (i.e., isolated wetlands of Lake County). It requires delineations, impact assessments, alternatives analyses, and mitigation plans. Further, mitigation is required to provide for replacement of lost wetlands at rates proportional to the quality of the impacted wetlands, with a 6-to-1 mitigation ratio required for impacting forested wetlands. Buffer areas for mitigation wetlands are required, and mitigation is not allowed within water detention facilities.

NOAA and EPA note that the Cook County and Lake County ordinances cited as supporting the management measure for planning, siting, and developing roads and highways and the management measure for siting, designing, and maintaining bridges do not apply to state roads, highways, and bridges. Further, Illinois has not provided information on how it is implementing the planning, siting, and developing roads and highways management measure for state roads and the siting, designing, and maintaining bridges management measure for state bridges.

Proposed Finding

NOAA and EPA propose to find that (1) Illinois has programs and enforceable policies and mechanisms in place to implement the planning, siting, and developing roads and highways management measure for local roads, but not for state roads. Similarly, NOAA and EPA propose to find that (2) Illinois has programs and enforceable policies and mechanisms in place to implement the siting, designing, and maintaining bridges management measure for local bridges, but not for state-owned or operated bridges. Therefore, NOAA and EPA propose the state must address the following conditions.

Conditions

• Within three years, Illinois shall demonstrate that it has programs and enforceable policies and mechanisms in place across the coastal nonpoint management area to implement the management measures for: (1) planning, siting, and developing roads and highways, for state roads; and (2) siting, designing, and maintaining bridges, for state-owned or operated bridges.

8. ***Road, Highway, and Bridge Construction Projects and Road, Highway, and Bridge Construction Site Chemical Control Management Measures***

These management measures are discussed together because they both relate to road, highway and bridge construction, and both are excluded for the same reason. The management measure for road, highway, and bridge construction projects is intended to be applied to new, replaced, restored, and rehabilitated road, highway, and bridge construction projects to control erosion and offsite movement of sediment. This measure emphasizes the importance of erosion and sediment control plans as effective methods to mitigate erosion problems at construction sites before any land-disturbing activity begins. The management measure for road, highway, and bridge construction site chemical control is intended to be applied to new, resurfaced, restored, and rehabilitated road, highway, and bridge construction projects to reduce toxic and nutrient loadings from such project sites. The objective of the measure is to safeguard surface and ground waters from toxic spills and hazardous loadings at construction sites from equipment and fuel storage sites, as well as from sites where fertilizers and pesticides are stored. Elements of this management measure include limiting the application, generation, and migration of toxic substances, ensuring they are properly stored and disposed of, and only applying nutrients at rates necessary to maintain vegetation, without creating significant nutrient runoff. For more information about these management measures, see pages 4-142 through 4-147 of the (g) guidance and page 47 of the PEIS (NOAA 1996; EPA 1993).

NOAA and EPA no longer require that state coastal nonpoint control programs include the road, highway, and bridge construction projects and construction site chemical control management measures because the NPDES permits for discharges associated with construction activity apply nationwide, including the coastal nonpoint management areas of states and territories (see the December 20, 2002, joint NOAA/EPA memorandum).

Proposed Finding

Illinois' program is exempt from the management measures for: (1) road, highway and bridge construction projects; and (2) construction site chemical control because pollution from these sources is regulated by NPDES permits for discharges associated with construction activity nationwide.

9. ***Road, Highway, and Bridge Operation and Maintenance and Road, Highway, and Bridge Runoff Systems Management Measures***

These management measures are discussed together because they both relate to roads, highways, and bridges, and both are eligible to be excluded for the same reason. The

management measure for road, highway, and bridge operation and maintenance — intended to be applied to existing, restored, and rehabilitated roads, highways, and bridges — minimizes pollutants generated during operation and maintenance of these thoroughfares. Approaches for pollution prevention include education, outreach, and source reduction programs, such as programs that cover standard operating procedures for nutrient and pesticide management, road salt minimization, guidelines for pollution prevention during maintenance, and maintenance of erosion and sediment control practices. The management measure for road, highway, and bridge runoff systems is intended to be applied to existing, resurfaced, restored, and rehabilitated roads, highways, and bridges that contribute to adverse impacts to surface waters. The measure includes, for example, identifying pollutant reduction opportunities, carrying out retrofit projects, and employing runoff management systems, such as vegetated filter strips, swales, detention basins, constructed wetlands and infiltration trenches. For more information about these management measures, see pages 4-148 through 4-157 of the (g) guidance and pages 47 through 48 of the PEIS (NOAA 1996; EPA 1993).

NOAA and EPA no longer require that state coastal nonpoint control programs include the management measures for road, highway, and bridge operation and maintenance and runoff systems in NPDES-regulated urbanized areas because those sources are regulated under NPDES permits for MS4s (as explained in a December 20, 2002, joint NOAA/EPA memorandum). Because nonpoint pollution from these sources across the entire Illinois coastal nonpoint management area, including all state roads, is subject to NPDES permits for MS4s, the state does not need to separately demonstrate conformity with the road, highway, and bridge operation and maintenance and runoff system management measures for state and local roads.

Proposed Finding

Illinois' program is exempt from the management measure for operation and maintenance of roads, highways, and bridges, as well as the management measure for road, highway, and bridge runoff systems because nonpoint pollution from these sources is regulated by the NPDES permits for MS4s.

4.1.1.3 Forestry Nonpoint Pollution Source Category

Illinois requested an exclusion of the forestry category from its coastal nonpoint program. Section 3.3.4.3 of this draft PEA discusses forestry in Illinois. There are currently no sawmills or commercial forestry operations in Illinois' coastal nonpoint management area. Approximately 2,400 acres of land are classified as forest throughout Illinois' coastal nonpoint management area. More than half of this acreage is public land, used as state and local parks and forest preserves. Approximately 1,100 acres of forest are undeveloped and are on small tracts of private land, divided among an increasing number of private owners. This fragmentation is attributed by IDNR and IEPA to ongoing urbanization and would diminish the efficiency of potential timber harvests. Most small tracts of forest land are owned by individuals who reside in low-density suburban areas, where there is no expectation that forested areas would be logged and where commercial forestry would be inefficient, although removal of individual trees might sometimes occur (IDNR and IEPA 2014).

Occasional small-scale tree removals would have *de minimus* impacts on coastal waters. In addition, given that the metropolitan Chicago area continues to undergo urbanization, IDNR and IEPA do not reasonably foresee future development of commercial forestry within the coastal nonpoint management area. Neither forestry management nor timber harvesting is identified as a source of impairment of any lake or stream within the coastal nonpoint management area in the state's 2014 "Integrated Water Quality Report." Given the absence of any impairments related to forest management (silviculture) and insignificant forestry activities, forestry does not, and is not reasonably anticipated to, present significant adverse impacts to coastal waters.

Proposed Finding

NOAA and EPA propose to find that Illinois has provided sufficient justification to support a categorical exclusion of forestry from its coastal nonpoint program and therefore propose to approve Illinois' exclusion request for the forestry management measures.

4.1.1.4 Marinas and Recreational Boating Nonpoint Pollution Source Category

Boating is an important means for the public to access the coast in Illinois. Section 3.3.5.3 of this draft PEA provides information on marinas in Illinois. As it indicates, there are a total of 32 marinas in the Illinois coastal zone, 23 of which are in Chicago. The largest marina, North Point Marina, is in Winthrop Harbor and has more than 1,500 slips. Given all the boating activity in the state, nonpoint pollution generated at marinas can contribute significantly to coastal water quality problems in some areas. These problems can be derived from poor marina siting and design (e.g., in basins where there is little flushing), maintenance dredging, routine marina operation, sewage handling practices, and boat operations and maintenance. Pollutants from the operation and maintenance of marinas can also combine with other upland sources, such as stormwater runoff, exacerbating water quality problems in localized areas. The types of pollutants that are produced at marinas and by recreational boating include heavy metals, toxins, hydrocarbons, bacteria, and nutrients. In addition, organics in sewage that require dissolved oxygen to decompose can lead to low dissolved oxygen in the water column. For more information about contributors to coastal water pollution at marinas, see section 5.2 of the Illinois Submittal and Chapter 5 of the §6217 (g) guidance (NOAA 1996; EPA 1993).

Pollution from boats can cause beach advisories or closures. As of 2012, Illinois collected water quality samples at three-quarters (53) of its public beaches. At more than 75% of those beaches, the level of indicator bacteria exceeded applicable water quality samples at least once during the summer of 2012. When beaches were closed as a result, in the majority of cases, the beach was reopened within one or two days. On average, the beaches were open approximately 94 percent of the time (EPA 2013). In Lake County, 38 public beaches were monitored; 29% of these beaches were closed at least once in 2013, 34% of them were closed at least once in 2014, and 32% of the beaches were closed at least once in 2015. In Cook County, 44 public beaches are monitored; of these, 70% of the beaches were closed at least once in 2013, and 84% of the beaches were closed at least once in both 2014 and 2015 (Illinois Department of Public Health n.d.a., n.d.b.).

To better manage pollutants and impairments associated with marina operations, the Illinois Coastal Management Program established a voluntary Clean Marina Initiative. The program provides information, guidance, and technical assistance to marina operators, boaters, and local governments on best management practices (BMPs) to prevent or reduce pollution. Marinas that participate in the Clean Marina Initiative can be certified if they meet certain requirements to showcase their commitment to environmental stewardship. The program has published an Illinois Clean Marina Guidebook, which describes numerous water-quality BMPs. Six of 32 marinas in the coastal nonpoint management area have been certified as clean marinas, and another five marinas have committed to becoming certified (IDNR and IEPA 2014). For more information, see http://www.dnr.illinois.gov/cmp/Pages/IllinoisCleanMarina.aspx.

Management measures have been developed for the following subcategories of sources of nonpoint pollution from marinas and recreational boating that affect Illinois' waters:

- Poorly flushed waterways where dissolved oxygen deficiencies exist;
- Pollutants discharged from boats;
- Pollutants transported in stormwater runoff from parking lots, roofs, and other impervious surfaces;
- Physical alternation or destruction of wetlands and of shellfish and other bottom dwelling communities during the construction of marinas, ramps, and related facilities; and
- Pollutants generated from boat maintenance activities on land and in the water.

The management measures apply to facilities that contain 10 or more slips or places for boats to tie up, any mooring field where 10 or more boats are moored, any facility where a boat for hire is docked, boat maintenance or repair facilities on or adjacent to the water, and public or commercial boat ramps. Fifteen management measures specified for this source category are grouped under two broad headings: (1) siting and design, and (2) operation and maintenance. Effective implementation of these measures will avoid impacts associated with marina siting and prevent the introduction of nonpoint source pollutants.

The six main impacts from the pollutants associated with marinas and boating activities that affect water quality include: toxicity in the water column; increased pollutant levels in aquatic organisms; increased pollutant levels in sediments; increased levels of pathogen indicators; disruption of sediment and habitat; and shoaling and shoreline erosion. These impacts are described in Chapter 5 of the §6217 (g) guidance (EPA 1993). In addition, the Environmental Consequences section of the PEIS contains an analysis of the impacts of these pollutants on water quality, which is incorporated by reference (NOAA 1996). The management measures are designed to prevent the environmental degradation caused by these pollutants.

The implementation of management measures for marinas and recreational boating will reduce the runoff of pollutants to marine waters and mitigate the impacts associated with the siting and design, as well as the operation and maintenance, of new and expanding marinas. Management measures for siting and design will control stormwater runoff from marina parking lots and hull maintenance areas, thereby reducing the amount of suspended solids, oil, and grease entering marina waters. The measures will protect wetlands, shellfish beds and submerged

aquatic vegetation during marina construction; provide for water quality assessments to determine whether the marina design will affect water quality; ensure proper circulation for flushing of the marina basin; and reduce turbidity and shoaling by protecting against shoreline erosion. The measures for operation and maintenance emphasize the proper disposal of antifreeze, solvents, and paints. Restrictions on boating activities in shallow non-marina waters will protect shallow-water habitats and prevent resuspension of sediments and damage to submerged aquatic vegetation.

The environmental benefits that result from the implementation of management measures based on the existing state programs and authorities are discussed below.

Management Measures for Marinas and Recreational Boating

Siting and Design

The siting and design management measures are designed to ensure that marinas and associated structures do not cause adverse water quality impacts or endanger fish, shellfish, and wildlife habitat during and after marina construction. These management measures are applicable to new marinas and, under certain circumstances, to marinas being expanded or altered. Activities that alter the design, capacity, purpose, or use of an existing marina are also subject to the siting and design management measures. The stormwater runoff management measure is the only siting and design measure that always applies to existing marinas. More information about the environmental consequences of the siting and design management measures, along with examples of management practices that support these measures, is incorporated by reference from Chapter 5 of the §6217 (g) guidance, particularly pages 5-11 through 5-45 (EPA 1993).

1. ***Marina Flushing Management Measure***

This management measure is intended to be applied to new and expanding marinas. Initial site selection is the most important factor influencing the long-term impact a marina will have on water quality within the immediate vicinity of the marina because the site determines amount of time required for flushing the area (i.e., for natural circulation to renew the water). This management measure calls for marinas to be sited and designed such that tides and currents will help flush the marina basin and renew its water regularly. Flushing (driven primarily by wind in the Great Lakes) helps keep down levels of pollutants by bringing in new water to mix with any contaminants that reach the water within a marina basin. The amount of flushing that may occur can vary with water depth, orientation of channels, the shape of the bottom, etc. Adequate flushing reduces stagnation of water in a marina and helps maintain biological productivity. The §6217 (g) guidance provides examples of measures to promote marina siting and design decisions that facilitate adequate flushing.

2. ***Water Quality Assessment Management Measure***

This management measure is intended to be applied to new and expanding marinas. It calls for an assessment of water quality impacts of proposed marinas while they are being sited and

designed. Elements of water quality assessments include modeling of flushing rates, measuring water quality characteristics, and monitoring, which may be used to determine whether a proposed marina design will adversely affect water quality. Historically, these types of assessments have focused on projected impacts to dissolved oxygen levels and pathogens. The §6217 (g) guidance divides most water quality assessments into modeling studies and monitoring studies, and it presents information about the reported costs of some example assessments.

3. ***Habitat Assessment Management Measure***

This management measure is intended to be applied to new and expanding marinas where site changes may impact wetlands, shellfish beds, submerged aquatic vegetation, or other important habitats. Habitat assessment use as part of proper siting and design can reduce short-term impacts (habitat destruction during construction) and long-term impacts (e.g., on water quality, sedimentation, and circulation) of marinas on the surrounding environment. Implementation of this measure can also help maintain water quality at levels that support the state-identified designated uses for different water bodies. Management practices cited in the §6217 (g) guidance for this measure range from characterizing sites and employing biologically-based assessments, to studying and comparing alternative sites for a marina, to making design choices that support habitat needs of fish and shellfish, to developing a marina siting policy. These practices can reduce impacts to and the destruction of environmentally-sensitive areas, protect coastal resources, and take into account the perspectives of diverse stakeholders with different interests and needs.

4. ***Shoreline Stabilization Management Measure***

This management measure is intended to be applied to new and expanding marinas where site changes may result in shoreline erosion. It calls for stabilizing shorelines, preferably with vegetative methods (unless structural methods are more cost-effective), where shoreline erosion is causing nonpoint pollution or creating a recurring need for maintenance dredging. The §6217 (g) guidance discusses some of the advantages and disadvantages of structural stabilization and vegetative stabilization techniques. For example, a vegetated shoreline can absorb wave energy, rather than reflecting it to other locations. The §6217 (g) guidance indicates that this management measure has been shown to be effective in mitigating shoreline erosion and the resulting turbidity and shoaling.

5. ***Stormwater Runoff Management Measure***

This management measure is intended to be applied to new and expanding marinas, as well as to existing marinas for at least the hull maintenance areas. The management measure calls for implementing effective runoff control strategies, including pollution prevention, and ensuring the proper design of hull maintenance areas. (If boat bottom scraping, sanding, or painting is done in areas outside those used for hull maintenance, then all the areas where these activities are conducted are subject to this management measure.) The implementation of the management measure in hull maintenance areas should reduce the average annual loadings of total suspended solids in runoff by 80 percent in these areas. This requirement does not apply to marinas that have a NPDES permit for their hull maintenance areas. Types of pollutants generated within hull

maintenance areas include paint chips, sanding dust, copper, and other heavy metals. Other solids and liquids used at marinas can also be spilled and introduce additional pollutants into stormwater. This measure calls for pollutant control through three available techniques: filtration/infiltration; retention/detention; and physical separation. The §6217 (g) guidance presents examples of these practices (grouped into 16 categories) and information about how they work, factors to consider when selecting among different practices, and other design features that can keep pollutants generated in areas used for boat maintenance at marinas from reaching surface water. It also includes a table that compares practices falling under this management measure, the types of pollutants each addresses, its removal efficiency, its estimated cost, etc.

6. ***Fueling Station Design Management Measure***

This management measure is intended to be applied to new and expanding marinas where fueling stations are to be added or moved. Fueling stations should be designed and operated in such a way as to reduce the likelihood of spills. The intent of the management measure is for pollutants released during any spills associated with fueling operations to be contained in a limited area, with minimal spreading through and out of marinas. Ways to implement this measure mentioned in the §6217 (g) guidance include storing spill containment equipment in fueling areas, developing a spill contingency plan, and designing fueling areas to allow booms to be deployed to surround any fuel spills.

7. ***Sewage Facility Management Measure***

This management measure is intended to be applied to new and expanding marinas in areas where adequate marine sewage collection facilities do not exist. It calls for installing easy-to-access pumpout facilities, dump stations, and restroom facilities to reduce the release of sewage to surface water, as well as posting signage to promote their use. Sewage from marine heads (toilets) contains concentrated levels of pollutants that can threaten public health and ecosystems. Pumpout facilities allow boaters to transfer sewage generated on boats to facilities on land that can process it. Marinas that do not have services for vessels with marine sanitation devices do not need to have pumpout facilities, but should have available restrooms and dump stations for portable toilets. The availability and use of these types of facilities will reduce discharges of sanitary wastes to coastal waters. The §6217 (g) guidance lists types of onshore collection systems, provides recommendations as to approximately how many boats can be served by each pumpout facility, and discusses the importance of boater education programs to encourage proper sewage management practices.

To implement the majority of the marina siting and design management measures (five of the seven), Illinois intends to rely on several programs and authorities, primarily permitting and certification requirements. NOAA and EPA propose to find that Illinois has the necessary authority to prevent nonpoint source pollution and require implementation of these five management measures for the siting and design of marinas: marina flushing, water quality assessment, habitat assessment, shoreline stabilization, and stormwater runoff. Illinois has provided a description of the regulatory programs the state will use to require implementation of these measures. The requirements Illinois relies upon include:

• Permits issued with the U.S. Army Corps of Engineers under the Joint Permit Program (which is founded on multiple state and federal authorities, including the Illinois Rivers, Lakes, and Streams Act and the Clean Water Act) that certify that proposed activities will not cause exceedances of water quality standards and that identify applicable requirements under section 404 of the CWA;

• Section 401 Water Quality Certifications under the Clean Water Act and Illinois Environmental Protection Act (415 Ill. Comp. Stat. §5), which require, among other things, that an anti-degradation report be provided for projects within the floodway of rivers, lakes, and streams that are not covered under a Clean Water Act Section 404 permit (to assess alternatives that would reduce pollutant loads, include a mitigation plan for unavoidable environmental degradation, characterize current water body conditions, and quantify projected impacts of the proposed project); and

• Permits issued by IEPA under the NPDES Stormwater Program (40 CFR §122.26), under the Clean Water Act. Most marinas are required to have a stormwater permit if discharges associated with industrial activity or construction activity could occur (e.g., they allow boat maintenance, mechanical repair, painting, cleaning, fueling, lubrication, or provide outdoor boat storage). The state also requires marinas to have stormwater permits before beginning projects that will disturb one acre or more of land. To obtain a stormwater permit, marinas are required to develop a stormwater pollution prevention plan and implement best management practices to prevent stormwater from harming water quality.

While these authorities adequately address the management measures for: (1) marina flushing, (2) water quality assessment, (3) habitat assessment, shoreline and bank stabilization, and stormwater runoff, Illinois has not yet demonstrated how these authorities ensure the implementation of management measures for vessel fueling station design and vessel sewage facility management.

With regard to vessel fueling station design, the state has proposed to meet the management measure through the Illinois Gasoline Storage Act (430 Ill. Comp. Stat. §15), the State Fire Marshal's authority to promulgate regulations for marine motor fuel dispensing facilities, and the state's promotion of BMPs to prevent and respond to fueling station spills. However, Illinois has not yet described how it will require proper siting and design of fueling stations in the site planning phase. The programs identified may prove to be sufficient to meet the fueling station design management measure once Illinois demonstrates how they are used to design fueling stations to allow for ease in cleanup of spills.

Regarding vessel sewage facility management, Illinois has not yet described programs in conformity with the management measure for vessel sewage facility management. The Illinois Sewage Management Rule (77 IAC 800.1300) requires that "facilities for disposal of sewage from the boat holding tanks shall be provided" and that restrooms be available within 500 feet of the marina. However, it is not clear if this rule includes ease of access and signage, as required in the corresponding CZARA management measure. In addition, although the Clean Marina Initiative (a voluntary, incentive-based state program that encourages marina operators and

recreational boaters to protect coastal water quality) promotes adequate BMPs that apply to vessel sewage facility management at existing marinas, the state has not described how it promotes the siting of these facilities as part of a marina development plan to ensure they are designed to adequately handle expected use and to provide ease of access to minimize the risk of releases of sewage to surface waters.

Proposed Finding

NOAA and EPA propose to find that Illinois has the necessary authority to prevent nonpoint source pollution and require implementation of the following management measures: (1) marina flushing; (2) water quality assessment; (3) habitat assessment; (4) shoreline stabilization; and (5) stormwater runoff management. Illinois has provided a description of the regulatory programs the state will use to require implementation of these measures. In addition, Illinois has described programs that may be in conformity with the management measure for (6) vessel fueling station design; however, Illinois has not yet described how it will require proper siting and design of fueling stations in the site planning phase. The State has not yet described programs in conformity with the management measure for (7) sewage facility management.

In order to fully satisfy the requirements for management measures related to marina siting and design, the state must address the conditions listed below.

Conditions

• Within three years, Illinois shall (1) demonstrate how its proposed programs will provide for siting and design of fueling stations in ways to effectively contain potential spills. The state shall also (2) identify how it will address ease of access and signage for vessel sewage facility management. The state shall (3) demonstrate it promotes proper siting of vessel sewage facilities as part of a marina development plan to ensure facilities are designed to adequately handle expected use and to provide ease of access, to minimize the risk of releasing sewage to surface waters.

Operation and Maintenance

The management measures in this category are designed to control transport of pollutants, such as paint chips, oil and grease, fuel, and detergents, into water bodies from marina activities such as boat maintenance, cleaning, and fueling. Educating boaters about pollution prevention, locating servicing equipment where there is a reduced risk of spills, performing maintenance at protected sites, and providing adequate and well-marked waste disposal facilities can help prevent contaminants from affecting aquatic biota and water quality. The next eight management measures address controlling pollution from marina operation and maintenance activities. Information about the environmental consequences of the marina operation and maintenance management measures, along with examples of management practices that support these measures, is incorporated by reference from Chapter 5 of the §6217 (g) guidance, particularly pages 5-46 through 5-63 (EPA 1993).

1. ***Solid Waste Management Measure***

This management measure is intended to be applied to new and expanding marinas. It calls for proper disposal of solid wastes produced by the operation, cleaning, maintenance, and repair of boats, to limit transport of solid waste to surface waters. Various solid wastes are generated at marinas and associated piers. If adequate disposal facilities are available, it is less likely that disposal of solid waste will occur in surface waters or on-shore areas where the material may wash into the waters. This management measure calls for hazardous waste not to be mixed with solid waste and for liquid waste to be stored separately from solid waste.

2. ***Fish Waste Management Measure***

This management measure is intended to be applied to marinas where fish waste is determined to be a source of water pollution. The measure calls for promoting sound fish waste management via public education, fish cleaning restrictions, and proper disposal of fish waste. Decomposing fish waste leftover from fish cleaning at marinas causes odor problems and can reduce dissolved oxygen levels in water, where there is not adequate flushing. Marina patrons and employees are more likely to properly dispose of fish waste if they are told of potential environmental effects and if they are provided adequate and convenient disposal facilities.

3. ***Liquid Material Management Measure***

This management measure is intended to be applied to marinas where liquids used in the maintenance, repair, or operation of boats are stored. The measure calls for providing and maintaining appropriate storage, transfer, containment, and disposal facilities for liquid materials and encouraging liquid waste recycling. This measure minimizes entry of potentially harmful liquid materials into marina and surface waters through proper storage and disposal practices.

4. ***Petroleum Control Management Measure***

This management measure is intended to be applied by states to boats that have inboard fuel tanks. The objective of the measure is to reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering water bodies (e.g., during fueling operations, bilge pumping, and spills). Small amounts of oil or gasoline spilled from multiple boats add up and can potentially damage docks and boats, as well as harm aquatic life. The amount of fuel and oil entering marina and surface waters can be reduced by using devices such as automatic shut-off nozzles, fuel/air separators in fuel tanks, and oil-absorbing bilge pads.

5. ***Boat Cleaning Management Measure***

This management measure is intended to be applied to marinas where boat topsides are cleaned and marinas where hull scrubbing in the water has caused water or sediment quality problems. It calls for cleaning boats in the water in a fashion that minimizes releases to surface waters of harmful cleaners, solvents, and paint (displaced during cleaning). This measure minimizes the use and release of potentially harmful chemical to marina and surface waters. Practices identified in the §6217 (g) guidance include prohibiting in-water hull scraping or any

other process that removes paint from the hull while a boat is under water and discouraging the use of detergents containing ammonia, sodium hypochlorite, chlorinated solvents, lye, etc.

6. ***Public Education Management Measure***

This management measure is intended to apply to all environmental control authorities in areas where marinas are located. One of the most cost-effective methods of preventing pollution from marinas and boating activities is to educate the public about the causes and effects of pollution and prevention methods. Thus, this measure calls for public education, outreach, and training programs to be instituted for boaters, marina owners, and marina operators about proper disposal of pollutants.

7. ***Maintenance of Sewage Facilities Management Measure***

This management measure is intended to be applied to marinas where marine sewage disposal facilities exist. It calls for maintaining sewage pumpout facilities in operational condition and encouraging their use. This measure is designed to effectively prevent failure of pumpouts and discourage improper disposal of sanitary wastes, thus reducing the release of untreated sewage into marina and surface waters.

8. ***Boat Operation Management Measure***

This management measure is intended to be applied in non-marina surface water where evidence indicates that boating activities are impacting shallow-water habitats. Boat operation in shallow water can resuspend bottom sediment (potentially reintroducing toxics into the water column), increase turbidity (which can decrease photosynthesis), and damage submerged aquatic vegetation. Submerged aquatic vegetation provides important habitat for a variety of species, reduces wave energy, and helps maintain water quality. This management measure calls for restricting boating activities where necessary to decrease turbidity and physical destruction of shallow-water habitat. Implementation of this measure can minimize damage to sensitive habitats by excluding boats from shallow-water areas not suitable for boat traffic or establishing no-wake zones to minimize the impacts of increased turbidity.

To implement the marina and recreational boat operation and maintenance management measures, Illinois intends to rely on the following programs and authorities:

• ICMP administers the Illinois Clean Marina Initiative, a voluntary, incentive-based program that encourages marina operators and recreational boaters to protect coastal water quality. The Illinois Clean Marina Initiative offers formal certification to marina operators and expanded education, outreach, and technical assistance. The Illinois Clean Marina Initiative has developed a comprehensive Clean Marina Guidebook that informs the certification process, as well as ongoing operations, and identifies best management practices for marina operators and boaters. After it was launched in June 2013, the Illinois Clean Marina Initiative certified six of 32 marinas in the coastal nonpoint management area in its first year; the initiative has also received pledges from five additional marinas, representing their commitment to certain practices and to proceed through the full certification process. To date, nearly 75% of slip capacity (6,904

slips of 9,306 in the coastal zone) has been either certified or pledged under the Illinois Clean Marina Initiative (IDNR 2015b; IDNR and IEPA 2014; Marine Services Corporation 2015). The certification requirements are in conformity with all eight of the management measures for marina and recreational boat operation and maintenance in the §6217 (g) guidance. Certification is conferred on a participating marina only when 100% of mandated practices have been met, 100% of BMPs required by the Illinois Clean Marina Initiative have been met, and at least 50% of recommended BMPs have been met. In order to maintain certification, marinas must annually communicate in writing that their facilities continue to meet the designation requirements described on the certification checklist. Additionally, every three years, a representative from the Illinois Clean Marina Initiative visits the marina to reaffirm its clean marina status. For more information, see section 5.4 of the Illinois Submittal (IDNR and IEPA 2014).

• The state has identified a back-up enforceable policy that can ensure implementation of the applicable management measures for marina and recreational boating operation and maintenance throughout the coastal nonpoint management area. Under Title III of the Illinois Environmental Protection Act, (415 Ill. Comp. Stat. 5/11 *et seq.*), section 12(a) makes it unlawful for any person to "cause or threaten or allow the discharge of any contaminants into the environment in any state so as to cause or tend to cause water pollution in Illinois…."

NOAA and EPA support the Illinois Coastal Management Program's stated intention in its submittal to emphasize implementation of, and improvements to, marinas and recreational boating management measures, including certification of additional marinas in the coastal nonpoint management area, improving compliance with existing authorities (e.g., fish waste regulations, vessel sewage discharge laws), and education and outreach efforts (IDNR and IEPA 2014).

Proposed Finding

NOAA and EPA propose to find that Illinois's program includes management measures in conformity with the §6217 (g) guidance for marina and recreational boat operation and maintenance.

4.1.1.5 Hydromodification Nonpoint Pollution Source Category

Types of hydromodification include channelization, damming, dredging, changing floodplain functions, increasing impervious surface in the watershed, removing riparian vegetation and modifying stream banks. Hydromodification can cause short and long term water quality degradation, accelerated erosion and sedimentation, destruction of aquatic habitat, and impairment or elimination of certain beneficial functions performed by natural water bodies.

Waterways in and near coastal Illinois have undergone intense hydromodification, as explained previously. Originally installed to manage wastewater, provide for navigation, and protect urban infrastructure (e.g., from erosion), these engineering structures have dramatically altered hydrology and hydraulics. Much of Lake Michigan, its tributaries, and the CAWS have been channelized or otherwise hardened, resulting in losses of riparian habitat. Section 6.2.1 of the 2014 Illinois Submittal, incorporated by reference, discusses both the nature of the

hydromodification projects in the Illinois coastal zone and some of the environmental effects of channelization. For example, channelization, the installation of dams, flow modification, streambank modification, and associated effects of hydromodification (including the loss of riparian wetlands) can be sources of water body impairment.

The main effects of the pollutants associated with hydromodification activities that affect water quality include: changed sediment supply, reduced availability of fresh water, accelerated delivery of pollutants, loss of surface water contact with overbank areas, loss or alteration of wetlands and instream and riparian habitats, blocked or impeded migration routes for fish, and increased sediment and nutrient levels. The Environmental Consequences section of the PEIS contains an analysis of the impacts of these pollutants on water quality (NOAA 1996). The management measures are designed to prevent the environmental degradation caused by these pollutants.

Management measures for hydromodification activities are intended to prevent degradation of the physical and chemical characteristics of surface waters and detrimental changes to instream and riparian habitat resulting from the transport of pollutants and from alterations in the supply of sediment and freshwater. The measures will minimize erosion, control sediment runoff, prevent downstream contamination from pesticides, petrochemicals, fertilizers, lime, cement, and construction chemicals, and protect the quality of water and aquatic habitat in reservoirs. The measures will also protect eroding streambanks and shorelines that constitute nonpoint pollution sources that increase turbidity and nutrient levels in coastal waters. The implementation of management measures for hydromodification activities using the programs and authorities discussed below will result in more consistent and widespread implementation of the existing programs.

There are four impoundments within the Illinois coastal zone, separating Lake Michigan from the Chicago River, which meet the definition of dams for the purposes of the coastal nonpoint pollution program (IDNR and IEPA 2014). However, for reasons explained below, Illinois did not develop any management measures for dams. The state developed management measures for nonpoint pollution caused by channelization and channel modification and by streambank and shoreline erosion.

Management Measures for Hydromodification

Channelization and Channel Modification

1. Management Measures for Physical and Chemical Characteristics of Surface Waters and Instream and Riparian Habitat Restoration

These management measures are intended to be implemented concurrently. An overview of the effects of channelization and channel modification is presented in the §6217 (g) guidance; they include altering sediment transport, water body temperature, the quality of habitat for fish and wildlife, concentrations of pollutants, and the direction, amount, and timing of flows. For more information about these management measures, see pages 6-3 through 6-23 of the §6217 (g) guidance (EPA 1993).

The management measure for physical and chemical characteristics of surface waters is intended to be applied to public and private channelization and channel modification activities in order to prevent the degradation of physical and chemical characteristics of surface waters from such activities. The management measure is intended to ensure that the planning process for new hydromodification projects considers changes to physical and chemical characteristics of surface waters that may occur as a result of the proposed work, including any undesirable effects of the projects. The measure also requires development of an operation and maintenance program for existing modified channels to improve the physical and chemical characteristics of surface waters.

The management measure for instream and riparian habitat restoration pertains to surface waters where channelization and channel modification have altered or have the potential to alter instream and riparian habitat such that historically present fish or wildlife are adversely affected. The purpose of this management measure is to correct or prevent detrimental changes to instream and riparian habitat from channelization and channel modification projects. Like the management measure for physical and chemical characteristics of surface waters, this measure calls for planning processes that evaluate the potential effects, including undesirable effects, of proposed channelization and channel modification projects, in this case on instream and riparian habitat. This measure also requires developing an operation and maintenance program that identifies opportunities to restore instream and riparian habitat in modified channels.

Streambank and Shoreline Erosion

1. Management Measure for Eroding Streambanks and Shorelines

This management measure is intended to be applied to eroding shorelines in coastal bays and to eroding streambanks in coastal rivers and creeks. This measure applies only to eroding shorelines and streambanks that constitute a nonpoint pollution problem in surface waters. The measure calls for the protection of streambank and shoreline features from erosion in these areas, including erosion due to use of shorelands or adjacent surface waters. It notes that vegetative stabilization methods (e.g., marsh creation) are strongly preferred, except where structural methods (including structures or beach nourishment) are more cost-effective. These techniques can also reduce the destruction of wetlands and riparian areas. For more information about management practices to implement this measure, see pages 6-57 through 6-84 of the §6217 (g) guidance, which provides descriptions of a variety of soil bioengineering, vegetative stabilization, and engineering practices to reduce erosion, as well as considerations relevant to selecting among available approaches (EPA 1993).

The management measures for channelization and channel modification and for streambank and shoreline erosion are discussed together because the same regulatory programs apply in Illinois to all these measures. As described below, Illinois relies on a mix of federal, state, and local regulatory programs to implement most elements of the management measures for channelization and channel modification and eroding streambanks and shorelines, including: the federal Rivers and Harbors Act (33 U.S.C. §403); the state's Rivers, Lakes, and Streams Act (17 IAC Parts 3704 and 3708); the CWA section 401 Water Quality Certification process (33

U.S.C. §1341); the Cook County WMO; the Lake County WDO; and the *Chicago River Corridor Design Guidelines and Standards.*

• The Rivers and Harbors Act requires a permit from the U.S. Army Corps of Engineers for any obstruction or alteration of a navigable waterbody, including shoreline protection, construction of bulkheads, dredging, and beach nourishment projects. These permits are subject to Clean Water Act section 401 certification by IEPA.

• The State's Rivers, Lakes, and Streams Act requires a permit for any proposed project that is likely to cause an impairment to the natural resources in any public body of water or that will cause bank or shoreline instability on other properties. Permits require applicants to mitigate certain negative impacts. While the law requires maintenance and repair to existing channelized waterways, the mandated practices do not fully address flow alteration. Specifically, while practices under the Act address restrictions of flood flows, other types of flow concerns (e.g., distribution, amount, and timing) and related nonpoint source water quality concerns are not sufficiently addressed.

• IEPA, through its CWA section 401 Water Quality Certification process, ensures that all projects that may result in any discharge into navigable waters, including channel modifications and those impacting streambanks and shorelines, comply with applicable water quality standards, effluent limitations, and other appropriate requirements under state law. Individual water quality certification reviews must consider all potential water quality impacts of the proposed activity, both direct and indirect, over the lifetime of the project, which is consistent with the first two elements of the management measures for channelization and channel modification: (1) evaluate the potential effects of proposed channelization and channel modification on the physical and chemical characteristics of surface waters and on instream and riparian habitat, and (2) plan and design channelization and channel modification to reduce undesirable impacts, as well as the second two elements of the management measure for eroding streambanks and shorelines: (1) protect streambank and shoreline erosion features with the potential to reduce nonpoint pollution, and (2) protect streambanks and shorelines from erosion.

• At the local level, the Cook County WMO and the Lake County WDO provide additional support for the second two elements of the management measure for eroding streambanks and shorelines. In Cook County, the WMO mandates protections for floodplains, wetlands, wetland buffers and riparian areas, and it provides for erosion and sediment control, with an emphasis on preventative source controls. In Lake County, the WDO generally requires a Watershed Development Permit for developments in floodplains, wetlands, or depressional storage areas of a certain size. No developments are permitted that would alone or cumulatively create a damaging or potentially damaging increase in flood levels. However, these authorities do not address protection of eroding streambanks or shorelines in the absence of proposed new work. Illinois should describe how it identifies where streambank or shoreline erosion is a nonpoint pollution problem and stabilizes these streambanks or shorelines.

• The manual, *Chicago River Corridor Design Guidelines and Standards,* outlines the requirements for planned development in and adjacent to the setback area along the Chicago River and its branches within the city limits of Chicago. Specific requirements are in place

regarding maximum riverbank steepness and appropriate bank stabilization techniques. This manual includes requirements that riverfront property owners maintain riverbanks, seawalls, and other attached structures on their property from deterioration that may endanger the health or safety of individuals or impair river navigation. This required maintenance is expected to have the added benefit of reducing nonpoint pollution from failing channelization structures.

• Illinois has many voluntary educational, public outreach, and technical and financial assistance resources, such as technical guidance manuals, cost-share and grant programs, and a water quality technical support center, focused on minimizing the impacts of nonpoint pollution due to channelization in the Illinois coastal nonpoint management area. These resources promote the importance of smart planning, design, operation, and maintenance, as well as the evaluation of potential impacts from channelization projects. To support these voluntary efforts, the state has provided a legal opinion asserting that Title III of the Illinois Environmental Protection Act, 415 Ill. Comp. Stat. 5/11 et seq., at Section 12(a), provides adequate back-up authority to ensure implementation of the hydromodification management measures. However, the state has not yet fully described how it promotes these outreach, technical, and financial assistance programs or how program implementation will result in operation and maintenance programs for existing modified channels that identify opportunities to: (1) restore instream and riparian habitat; and (2) improve surface water quality for existing modified channels and stabilize eroding streambanks. In addition, Illinois has not yet demonstrated it has programs in place to monitor and track the implementation of these voluntary programs or demonstrated a commitment to use its back-up authority, when needed.

Dams

1. Management Measures for Erosion and Sediment Control, Chemical and Pollutant Control, and Protection of Surface Water Quality and Instream and Riparian Habitat

The management measure for erosion and sediment control is intended to be applied to new dam construction and construction activities associated with dam maintenance. The purpose of this measure is to prevent sediment from entering surface waters during the construction or maintenance of dams by minimizing erosion and maximizing sediment retention onsite, to reduce impacts on surface water quality.

The management measure for chemical and pollutant control is intended to be applied to new dam construction and construction activities associated with dam maintenance. The purpose of this management measure is to prevent downstream contamination from pollutants, such as pesticides, petrochemicals, fertilizers, lime, cement, and construction chemicals. This measure provides for retention onsite of the soluble pollutants that are not easily controlled by erosion and sediment control practices.

NOAA and EPA no longer require that state coastal nonpoint control programs include the dam management measures for erosion and sediment control and chemical and pollutant control because those sources of nonpoint pollution are subject to NPDES permits for discharges

associated with construction activity apply to these sources of pollution (see December 20, 2002, joint NOAA/EPA memorandum).

The management measure for protection of surface water quality and instream and riparian habitat related to dam operations is intended to be applied to dam operations that result in the loss of desirable surface water quality and of desirable instream and riparian habitat. The purpose of this management measure is to protect the quality of surface waters and aquatic habitat in reservoirs and in the downstream portions of river and streams that are influenced by the pollutants contained in releases (tailwaters) from reservoir impoundments.

NOAA and EPA propose to grant Illinois an exclusion from the management measure for protection of surface water quality and instream and riparian habitat from impacts of dams because Illinois does not have any impoundments within the coastal nonpoint management area that are above the minimum size and capacity threshold for this measure, and no new qualifying dam construction within the management area is likely in the future.

Proposed Finding

Illinois' program includes management measures and enforceable policies and mechanisms to meet the §6217 (g) guidance for hydromodification, with two exceptions. It does not include management measures for: (1) improving surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels; and (2) developing a process to identify where shoreline erosion is a nonpoint pollution problem and stabilize the streambanks or shorelines. Therefore, NOAA and EPA propose that Illinois be subject to the below conditions.

Where the state is relying on voluntary approaches to meet the §6217 (g) requirements, it has identified a back-up enforceable policy that can ensure implementation of the applicable hydromodification measures throughout the coastal nonpoint management area. However, Illinois has not adequately described the monitoring and tracking methods it will use as part of its voluntary approach to meet the measure for improving surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels and one element of the measure for eroding streambanks and shorelines, described above.

NOAA and the EPA do not require Illinois' program to meet management measures for erosion and sediment control for dams and chemical and pollutant control for dams since NPDES permits for discharges associated with construction activity apply to these sources of pollution. Illinois has provided sufficient justification to support a categorical exclusion of the management measure for protection of surface water quality and instream and riparian habitat for dams.

Conditions

• Within three years, Illinois: (1) shall develop a process to improve surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels; and (2) shall develop a process to fully address the streambank and shoreline erosion management measure. The state shall show it has an operation and maintenance

program with specific timetables for existing modified channels that includes identification of opportunities to restore instream and riparian habitat in those channels and shall demonstrate that it has programs or processes in place to stabilize eroding streambanks and shorelines.

4.1.1.6 Wetlands, Riparian Areas, and Vegetated Treatment Systems

There are on the order of one million acres of shallow-water wetlands in Illinois (IEPA 2013, 2014a). Illinois has lost more than 90 percent of the wetlands that were present prior to the arrival of European settlers. In the state, only one-quarter of those that remain are natural wetlands. The other wetlands in the state have been modified or created by dikes, impoundments, or excavations (IDNR 2015c). In the coastal nonpoint management area, there are approximately 10,700 acres of wetlands, more than half of which are protected within Forest Preserves or the Openlands Lakeshore Preserve, by Park and Port Districts, or by IDNR (IDNR and IEPA 2014). Approximately 40 percent of the state's threatened and endangered species use wetland habitats during at least part of their life cycle. Wetlands also offer benefits such as storing floodwaters, improving water quality, and recharging groundwater. Modified wetlands typically do not function as fully as natural wetlands. A variety of pressures, particularly economic development, continue to threaten to modify, degrade, and/or convert wetlands to other uses (IEPA 2014a).

Riparian areas are vegetated ecosystems along waterbodies through which energy, water, and materials pass, characterized by a high water table, and subject to periodic flooding. Riparian areas can include wetlands and uplands. Upland riparian areas can provide many of the same important water quality functions and ecosystem services that wetlands provide. When hydrologic changes or pollutants exceed the natural assimilative capacity of wetlands and riparian areas, the systems become stressed and may be degraded or destroyed to the point that the wetlands and riparian areas themselves become sources of nonpoint pollution in coastal waters. A degraded wetland has less ability to remove pollutants and can deliver increased amounts of sediment, nutrients, and other pollutants to the adjoining waterbody. The 2014 "Illinois Integrated Water Quality Report and 303(d) List" identified drainage, filling, and loss of wetland habitats as a source of impairment to 45 stream miles in the state. There are two kinds of vegetated treatment systems: vegetated filter strips and constructed wetlands. Constructed wetlands are typically built to manage and remove pollutants from wastewater or stormwater. Vegetated filter strips are vegetated areas created to remove sediment and other pollutants from surface water runoff (by filtration, infiltration, deposition, adsorption, etc.).

Management measures for wetlands, riparian areas, and vegetated treatment systems address multiple categories of nonpoint pollution that affect coastal waters. These measures promote the protection and restoration of wetlands and riparian areas and the use of vegetated treatment systems as means to control the nonpoint pollution emanating from such sources. Management measures are provided for three categories:

- Protection of wetlands and riparian areas
- Restoration of wetlands and riparian areas
- Promoting the use of vegetated treatment systems, such as constructed wetlands and vegetated filter systems

The Environmental Consequences section of the PEIS contains a discussion of the functions and importance of wetlands, riparian areas, vegetated buffers, and vegetated treatments systems (NOAA 1996).

The intent of the management measures for wetlands, riparian areas, and vegetated treatment systems is to ensure that the nonpoint pollution reduction benefits of protecting and restoring wetlands and riparian areas and of constructing vegetated treatment systems will be considered as part of all coastal watershed water pollution control activities. The implementation of management measures will protect and restore the full range of functions for wetlands and riparian areas serving a nonpoint source abatement function and ensure that they do not become a significant nonpoint source due to degradation. Wetlands, riparian areas, and vegetated treatment systems attenuate increased flow during storms and abate pollutants, such as nitrogen, phosphorus, and sediment. These areas also provide habitat for a variety of species.

The environmental benefits that result from the implementation of management measures for wetlands, riparian areas, and vegetated treatment systems using the existing programs and authorities discussed below will include: improved protection and restoration of wetlands and riparian areas, as well as more consistent and widespread implementation of the existing programs through fulfillment of the requirement for Illinois to demonstrate its ability to implement the management measures throughout the 6217 management area.

Management Measures for Wetlands, Riparian Areas and Vegetated Treatment Systems

1. Management Measure for Protection of Wetlands and Riparian Areas

This management measure is intended to be applied to protect wetlands and riparian areas from adverse nonpoint pollution impacts. The purpose is to protect the existing water quality improvement functions of wetlands and riparian areas as a component of nonpoint pollution control programs. The overall approach is to establish a set of practices that maintains diverse functions of wetlands and riparian areas and prevents adverse impacts to areas serving a nonpoint pollution abatement function. The management measure calls for not only protecting wetlands and riparian areas, but also maintaining their functions and characteristics, such as hydrology, geochemistry, species composition, and vegetative cover. The pollution abatement functions of these areas are most effective when they are part of an integrated land management system that controls nutrients, sediment, and soil erosion. For information about management practices that support this measure, see pages 7-8 through 7-32 of the §6217 (g) guidance (EPA 1993).

2. Management Measure for Restoration of Wetlands and Riparian Areas

This management measure is intended to be applied to restore the full range of functions of wetlands and riparian areas where the systems have been degraded or destroyed and where they can serve a significant nonpoint source abatement function. For example, this might entail reestablishing hydrologic characteristics and vegetation. This management measure should be used in conjunction with other measures addressing adjacent land and water use activities in order to protect coastal water quality. The §6217 (g) guidance presents information relevant to

this management measure on pages 7-33 through 7-46, including a review of selected studies of wetland and riparian area restoration projects (EPA 1993).

3. Management Measure for Vegetated Treatment Systems

This management measure is intended to be applied in cases where engineered systems of wetlands or vegetated treatment systems can treat nonpoint pollution. The measure calls for promoting the use of engineered vegetative treatment systems (constructed wetlands and vegetated filter strips) where they will significantly abate nonpoint pollution. Vegetated filter strips can improve water quality by removing nutrients, sediment, suspended solids, and pesticides. Constructed wetlands can provide limited ecological benefits in addition to their nonpoint source control functions. For more information, see pages 7-47 to 7-56 of the §6217 (g) guidance, which include data on the effectiveness (with respect to pollutant removal) of both types of vegetated treatment systems, among other information (EPA 1993).

The management measures are discussed together because the state intends to implement them together using the same programs and authorities. Illinois meets the management measures for protection of wetlands and riparian areas primarily through local county ordinances and a variety of additional authorities and programs, as follows.

• In Lake County, the WDO was established to conserve the beneficial functions of the county's flood-prone areas and wetlands. The WDO generally requires a Watershed Development Permit for developments in floodplains, wetlands, or depressional storage areas of a certain size. The WDO requires land disturbances to be minimized (and mitigated, as needed) and protection of stream channels, overland flows of stormwater, and water quality treatment areas. The WDO also regulates activities in floodplains by restricting modification and disturbance of natural riverine floodplains to protect existing hydrologic and environmental functions. The WDO ensures that no developments occur that (alone or cumulatively) create a damaging or potentially damaging increase in flood levels. Further, the WDO requires that disturbances to wetlands be minimized and negative impacts be mitigated in accordance with specific wetland mitigation plan requirements. The WDO requires protective buffers around all streams that are waters of the United States and isolated water bodies that are either waters of the United States or isolated waters of Lake County.

• In Cook County, the primary authority is the WMO, which mandates protections for floodplains, wetlands, wetland buffers and riparian areas. It also provides for erosion and sediment control, with an emphasis on preventative source controls. With regard to the management measure for restoration of wetlands and riparian areas, the Cook County WMO mandates specific mitigation requirements where impacts to wetlands or riparian areas from development are unavoidable.

• Additional authorities used to protect and restore wetlands and riparian areas include: the federal Clean Water Act permitting program for dredged and fill material under section 404, the Rivers and Harbors Act of 1899, and state authorities such as Illinois' Rivers, Lakes, and Streams Act (615 Ill. Comp. Stat. §5) and the Interagency Wetland Policy Act of 1989 (20 Ill. Comp Stat. §830).

• The discharge of dredged or fill material into waters of the United States, including wetlands, is regulated through CWA Section 404, and impacts to the course, location, condition, or capacity of navigable waters of the United States is prohibited without a permit, pursuant to the Rivers and Harbors Act of 1899. Illinois' Rivers, Lakes, and Streams Act regulates construction to prevent water impairment (section 3704) and requires the minimization of erosion and sedimentation during construction (section 3708). Projects affecting waterways, floodplains, or wetlands in the coastal nonpoint management area that are not regulated under the regional permit are required to use the Joint Permit application, which mandates a description of avoidance, minimization, and compensatory activities.

• IDNR has authorized the Lake County Stormwater Management Commission to issue permits for development in regulatory floodplains and floodways with drainage areas less than one square mile. The Interagency Wetland Policy Act of 1989 directs state agencies to "preserve, enhance, and create wetlands" and sets a goal of zero net loss of existing wetlands, or their value, from state-supported activities.

• Illinois also has several voluntary and incentive programs, including the Natural Resource Conservation Service wetland reserve easement program, open space acquisition programs, and IDNR landowner assistance programs, which help promote the restoration of wetland and riparian areas.

• To implement the vegetated treatment systems management measure, the state relies on the Cook County WMO and the Lake County WDO, both of which require that adverse impacts to riparian areas and wetlands be mitigated. Mitigation options include the use of vegetated treatment systems. Illinois also has several publications, BMP manuals, and outreach/technical assistance programs that promote vegetated swales, constructed wetlands, buffer strips, and other vegetated treatment methods to control polluted runoff. For example, the "Illinois Urban Manual" serves as a technical reference on best management practices for soil erosion and sediment control, stormwater management, and special area protection. It is used by developers, planners, engineers, government officials, and others involved in land use planning, building site development, and natural resource conservation in rural and urban communities. Examples of projects under this management measure that provide environmental benefits include vegetated swales, stormwater wetlands, green roofs, tree infiltration boxes, rain gardens, and vegetated filter strips.

Proposed Finding

NOAA and EPA propose to find that Illinois' program includes management measures for the protection and restoration of wetlands and riparian areas and for vegetated treatment systems.

4.1.1.7 Identification and Implementation of Additional Management Measures

Coastal nonpoint programs must provide for the implementation of additional management measures where coastal water quality is impaired or threatened even after the

implementation of the management measures specified in the §6217 (g) guidance. These additional management measures could apply to existing land and water uses that are found to cause or contribute to water quality impairment and to new or substantially expanding land uses within critical coastal areas adjacent to impaired or threatened coastal waters. Additional management measures could reduce levels of nonpoint pollution reaching coastal waters by reducing sources of pollutants, reducing delivery of pollutants, or reducing direct impacts (typically by protecting wetlands and riparian areas, habitat, or natural characteristics of stream channels, etc.) (EPA 1993).

The consequences of implementing additional management measures (and other management measures in keeping with the (g) guidance) would include allowing coastal waters to attain and maintain characteristics that meet applicable water quality standards. For example, additional management measures could result in restoring natural hydrology where hydrology has been altered by engineering practices. Additional management measures could include controls associated with land use practices that individually or cumulatively cause or contribute to coastal water quality impairments. Local governments could, for instance, institute buffer zones, low density zoning, cluster development ordinances, conservation zoning, or other land use measures tailored to a specific area. Another possibility would be for management measures similar to those specified in the (g) guidance to be instituted, but more stringently. Regardless of the practices selected, they would be intended to benefit the environment, while helping protect designated uses. Additional management measures can be established preventatively, to avoid water quality problems that might otherwise develop. Regulatory controls and/or non-regulatory incentives, combined with appropriate enforcement authority, are required by NOAA and EPA to demonstrate the enforceable policies and enforcement mechanisms supporting additional management measures (NOAA and EPA 1993).

Due to the highly urbanized nature of the Illinois coastal nonpoint management area, the vast majority of Illinois' coastal waters that have been sampled are considered impaired for at least one designated use. Illinois documented that (as of 2014) more than 40 percent of the impairments to coastal waters are a result of unidentified sources. All harbor units are considered impaired for fish consumption due to polychlorinated biphenyls and atmospheric deposition of mercury. Waukegan Harbor had been listed as impaired for aquatic life due to a combination of contaminated sediments, industrial point source discharges, and urban runoff/storm sewers. However, recent dredging resulted in the removal of this impairment. All 63 miles of Illinois' Lake Michigan shoreline are impaired for fish consumption, and 51 of 52 assessed Lake Michigan beaches are impaired for primary contact recreation (IEPA 2016a). Primary contact issues resulted from *Escherichia coli* contamination due, in part, to CSOs and urban runoff/storm sewers, as well as unknown sources. A TMDL that addresses "manageable" nonpoint sources has been completed and approved for all Lake Michigan beaches in Illinois.

Illinois' process for selecting and implementing additional management measures will involve the following:

- Annual tracking of water quality monitoring data;
- Every five years, discussing whether trends warrant identification of additional management measures with representatives of the state's Coastal Nonpoint Source

Advisory Panel and the ICMP Technical Advisory Committee (made up of representatives from state agencies familiar with coastal zone land and water uses); and

- Conducting outreach to various stakeholders, including representatives of federal, state, and local governments that manage land uses in the Illinois coastal nonpoint management area, for input on any proposed additional management measures.

This process will help Illinois meet the requirements to "develop a continuing process, including milestones, for implementing, evaluating and, as necessary, revising the additional measures" (NOAA and EPA 1993). Illinois has already begun implementing many programs and regulations to manage nonpoint pollution that could reach coastal waters. Numerous monitoring programs, involving both data collection and data analysis, are in place to determine water quality conditions. As deficiencies are identified, Illinois has robust mechanisms for determining additional steps needed to address shortcomings. However, these monitoring efforts do not appear to measure effectiveness of the coastal nonpoint program's management measures. Since more than 40 percent of the impairments are a result of unidentified sources, the process lacks sufficient data to adequately assess the need for additional management measures.

Proposed Finding

NOAA and EPA propose to find that Illinois has not yet described how it will use monitoring and assessment information to determine which additional management measures will be considered and, if required, developed and implemented. In order to receive full approval, the program must meet the below conditions.

Conditions

Within three years, Illinois shall demonstrate it has a monitoring framework in place to measure effectiveness of the coastal nonpoint program's management measures, as well as to document and assess sources of impairment that are currently unidentified. At that time, the state shall also identify any additional management measures that would be needed to attain and maintain water quality standards and, if required, develop a strategy to meet these additional measures.

4.1.2 Impacts to the Socioeconomic Environment of Management Measure Implementation

Section 4.A.2 of the PEIS, incorporated by reference, provides a summary of the economic implications of the management measures guidance as described in the Regulatory Impact Analysis prepared by EPA. That section also summarizes the economic achievability analyses performed for all nonpoint source categories. These analyses provided a relative sense of the economic impacts of the management measures on affected households, municipalities, and commercial enterprises. EPA determined from these studies that all the management measures specified in its guidance document are economically achievable. In developing the §6217 (g) guidance document, EPA adopted a flexible approach that emphasized broad principles or standards for nonpoint pollution control that can be applied nationally. This allows states to develop more specific programs that reflect the most cost-effective approaches in

response to local conditions. One example of a possible minor socioeconomic cost would be, when a new site is developed, the price of installing suitable stormwater control practices to ensure post-development runoff is not greater than pre-development rates and that 80% of total suspended solids are removed, per the new development management measure. Other examples of socioeconomic costs, related to management measures for marina and boat operation and maintenance, would be incurring added costs when properly disposing of hazard waste or from curtailing boat cleaning while boats are still in the water so waste can be captured on land and disposed of properly.

While the implementation of management measures entails some economic costs within Illinois, there will be no new costs of the programs, authorities, and enforcement mechanisms already supporting management measures because these programs and authorities, and enforcement mechanisms are in place. To the extent that Illinois, Cook County, Lake County, or other entities adopt new initiatives in order to address the conditions for full program approval established by NOAA and EPA, these initiatives might have minor economic costs in coming years. For example, if Illinois is required to meet the management measure for existing OSDS (if the state cannot provide sufficient justification for an exclusion), a possible cost to homeowners with OSDS would be incurring minor costs from obtaining routine inspections of existing OSDS at a frequency to ascertain if the systems are failing. Also, the flexibility embodied in the §6217 (g) guidance and in NOAA and EPA's "Program Development and Approval Guidance" will help to reduce the economic impacts associated with fully implementing the coastal nonpoint program. For example, Illinois will have until 2018 to fully implement the §6217 (g) management measures and until 2023 to fully implement its coastal nonpoint program, including additional management measures where necessary. This ability to phase in program implementation over a number of years allows any economic impacts to be absorbed over a longer time period. Another aspect of the flexibility in the program is the ability of states to exclude categories, subcategories, or individual nonpoint sources where the sources do not exist, are not anticipated to exist, or do not present a threat to coastal waters. This allows states to adapt their programs to local conditions, thus implementing their programs in a more cost-effective manner. For example, Illinois has excluded forestry and agriculture as categories of nonpoint pollution that are not anticipated to pose threats to coastal waters. States may also adopt voluntary, education, and market-based incentive systems, in addition to regulatory programs, as a means of management measure implementation. In fact, Illinois has various technical assistance, education, training and financial incentive programs that support some of the management measures.

Over the long term, the implementation of management measures will produce positive socioeconomic benefits for Illinois. For example, since many of Illinois' coastal water quality problems are linked to urban sources of pollutants, the urban management measures will help to reduce levels of pollutants reaching water bodies from urban nonpoint sources such as stormwater runoff from highways and developed areas. In addition, because of the significant amount of hydromodification activities in coastal Illinois, nonpoint pollution from hydromodification activities, such as channelization, increased impervious surface in the watershed, riparian vegetation removal, and modified stream banks, typically adversely affects coastal resources. Management measures that result in improved site practices where there are hydromodification activities can reduce associated impacts. Socioeconomic benefits of

implementation of diverse management measures include improved water quality, enhanced recreational opportunities, increased property values, ground water protection, benefits to fisheries, and reduced risk to human health from water contact activities and consumption of contaminated fish. Improved water quality will also increase the aesthetic value of coastal areas and thus benefit tourism and recreation associated with water bodies.

NOAA and EPA also considered public involvement processes used in developing Illinois' coastal nonpoint program, which were extensive. The state established a Coastal Nonpoint Program Advisory Panel, composed of federal, state, and local officials, as well as several non-governmental partners, to help guide program development. This panel has advised ICMP and IEPA on how the coastal nonpoint program can best fill gaps and complement current efforts to keep nonpoint pollution from reaching Lake Michigan. In addition, ICMP developed the Illinois Lake Michigan Implementation Plan, which is another forum for public input on protecting Lake Michigan. These efforts, combined with frequent presentations given by ICMP staff, show extensive public input during program development. Ongoing public engagement is planned through the Illinois Lake Michigan Implementation Plan and Coastal Nonpoint Source Advisory Panel. In light of these efforts, NOAA and EPA propose to find that Illinois' program provides for public participation in the development and implementation of its Coastal Nonpoint Pollution Control Program.

4.2 Consequences of NOAA and EPA's Approval Decision

Table 6 presents the different elements that are components of the possible alternatives. These elements affect the environmental consequences of the alternatives (see section 4.2.1).

Table 6. Elements of the Four Alternatives Evaluated

Elements of Alternative	No Action	Full Approval	Conditional Approval	Disapproval
Programs and enforceable policies to reduce nonpoint source pollution already in place in Illinois would continue to exist	X	X	X	X
Establishment of a federally-approved Illinois Coastal Nonpoint Pollution Control Program		X	X	
Illinois would be eligible to receive coastal nonpoint program funding if appropriated by Congress[8]		X	X	
Conditions NOAA and EPA place on Illinois's program would require the state to strengthen its coastal nonpoint program in certain areas to meet all CZARA requirements and achieve full approval			X	

[8] There have been no appropriations for this purpose for more than 7 years, and future appropriations are considered unlikely.

Funds would be withheld: loss of 30% of CZMA §306 & CWA §319 funds				X
NOAA and EPA would conduct a joint review of Illinois' proposed program and publish their findings		X	X	X

4.2.1 Impacts to the Physical and Biological Environment of the Approval Decision

Table 7 presents the environmental consequences of the different elements of the alternatives. (See Table 6 for information about which elements are characteristics of each alternative.) This subsection also summarizes the environmental consequences of the alternatives.

Table 7. Environmental Consequences of Alternatives, by Element

Alternative Element	Nature of Consequences	Effects to Physical and Biological Environments	Effects to the Socio-economic Environment
Programs and enforceable policies to reduce nonpoint source pollution already in place in Illinois would continue to exist	Activities to prevent and reduce nonpoint pollutants[9] will reduce water quality degradation and enhance water quality, habitats, recreational opportunities, aesthetics, stakeholder outreach, etc.	Minor beneficial effects	Minor beneficial effects; any minor costs are already being borne
Establishment of a federally-approved Illinois Coastal Nonpoint Pollution Control Program	Existing programs will become more effective through strengthening the link between Federal and Illinois coastal zone management and water quality programs, thereby improving the efficiency and effectiveness of efforts to manage activities that degrade coastal waters	Minor beneficial effects	Minor beneficial effects
Illinois would be eligible to receive coastal nonpoint program funding if appropriated by Congress[10]	New funding would enable Illinois to implement additional efforts to reduce coastal nonpoint pollution	Minor beneficial effects	Minor beneficial effects
Conditions NOAA and EPA place on Illinois'	Efforts to meet conditions will prevent and reduce coastal	Minor beneficial	Minor adverse and minor

[9] For more detail, see the sections on environmental consequences of management measure implementation. See also the 1996 PEIS for the Coastal Nonpoint Pollution Control Program.
[10] This is considered unlikely, as explained previously.

Alternative Element	Nature of Consequences	Effects to Physical and Biological Environments	Effects to the Socio-economic Environment
program would require the state to strengthen its program in certain areas to meet all CZARA requirements and achieve full approval	nonpoint source pollution and facilitate efforts to address persistent problem areas; consequences would be similar to those resulting from implementing management measures	effects	beneficial effects
Loss of 30% of CZMA §306 & CWA §319 funds[11]	Would reduce the state's ability to fully implement its coastal management and water quality programs and could impair Illinois' ability to implement any elements of its coastal nonpoint program (e.g., outreach related to the Clean Marina Initiative) that are funded from Section 306 of the CZMA or Section 319 of the CWA; but it is impossible to know which elements of the two programs would be cut, making it hard to precisely predict the negative environmental effects	Minor adverse effects	Minor adverse effects
NOAA and EPA would conduct a joint review of Illinois' proposed program and publish their findings	Illinois would benefit from the feedback developed as part of this review	Possible minor beneficial effects if feedback is incorporated into Illinois' program	Possible minor beneficial and/or minor adverse effects if feedback is incorporated into Illinois' program

(Sources: NOAA and EPA 1993; NOAA 1996; 16 U.S.C. § 1455b)

Under all the alternatives, the programs and enforceable policies to reduce nonpoint source pollution that are already in place in Illinois would continue to exist and have the consequences presented in section 4.1. In other words, there would be no immediate change to how nonpoint pollution is managed in coastal Illinois and hence no immediate changes to the physical or biological environment. Also, the no action, full program approval, and conditional approval alternatives would allow, at least on an interim basis, the funding provided to Illinois by EPA under section 319 of the Clean Water Act and by NOAA under section 306 of the Coastal

[11] While the amount of funding Illinois receives under §306 of the CZMA and §319 of the CWA changes every year, in FY2015, Illinois received almost $2 million in CZMA §306 funds and $5.6 million in CWA §319 funds.

Zone Management Act to continue at levels similar to those available in recent years[12] (subject to Congressional appropriations). Disapproval would reduce funding to programs that help support efforts to reduce sources of nonpoint pollutants, improve water quality, and advance other coastal zone management and nonpoint source program objectives.

Both the funding streams that would be maintained at their full levels as a result of no action, full program approval, or (on an interim basis) conditional approval contribute to improving nonpoint planning efforts, reducing nonpoint pollution, enhanced opportunities for recreation, benefits to aesthetics, etc. For example, CWA section 319 funding has enabled Soil and Water Conservation Districts to continue to update and provide technical assistance associated with the "Illinois Urban Manual," a technical reference on best management practices for soil erosion, sediment control, stormwater management, and wetland restoration; this technical assistance leads to improved water quality (e.g., reduced concentrations of nonpoint pollutants reaching coastal waters), which benefits those who enjoy recreational activities in or along coastal waters. Section 319 funds have also supported, for example, watershed-based planning efforts, nonpoint source education, river bank and drainage ditch stabilization projects, wetland restoration and creation, and other nonpoint source management efforts (IEPA 2014b). CZMA section 306 funds have supported staff time devoted to such efforts as promoting the Clean Marina Initiative; participating in the Lake Michigan Management Program; and coordinating with local governments, IEPA, federal agencies, and other partners on stormwater management, green infrastructure, and the coastal nonpoint program. CZMA funds have also been used to support projects carried out by other entities, such as efforts to promote public awareness about water pollution, river health, stormwater management, sustainable lawn care practices, etc. These investments have had beneficial impacts on the physical and biological environments in Illinois.

The approval decision is unlikely to result in new funding becoming available to Illinois because Congress has not appropriated any funding for the Coastal Nonpoint Program since FY2009, and future appropriations are unlikely. Approval of the nonpoint program and establishment of a federally-approved Illinois Coastal Nonpoint Pollution Control Program is intended to make existing programs more effective (including their water quality benefits) by strengthening the link between Federal and Illinois coastal zone management and water quality programs, thereby improving efforts to manage land use activities that degrade coastal waters and habitats, resulting in beneficial impacts to the physical and biological environments.

Under all the alternatives that involve federal review of Illinois' program, NOAA and EPA would develop feedback about the proposed program from which Illinois would benefit. Depending on whether and how Illinois made any modifications to its coastal nonpoint program as a result of this feedback, there could be minor beneficial effects to the physical and biological environments. As noted above, conditional approval and no action would also allow Illinois to

[12] From NOAA's FY2011 funds, ICMP received approximately $1 million under section 306 to support its operations during the portion of FY2012 after it was formally approved. From federal FY2012-FY2015 funds, ICMP received close to $2 million each year under CZMA section 306, which it combined with matching funds from state government and other sources. Illinois has been receiving CWA nonpoint management funds since FY1990; the state received roughly $6 million per year in federal CWA section 319 funds from FY2011 through FY2015.

temporarily avoid the penalties to certain programs mandated under CZARA. To meet the conditions NOAA and EPA place on Illinois' program, the state would have to strengthen its program in certain areas to meet all CZARA requirements and achieve full approval. If Illinois adopts new initiatives in the future to meet the conditions outlined by NOAA and EPA, there would be further beneficial impacts to the physical and biological environment, which would reduce coastal nonpoint pollution and facilitate efforts to address persistent problems that could degrade coastal waters. For example, if the state or appropriate counties implement a program to monitor operating OSDS that results in failing OSDS being addressed, water quality in the vicinity of those OSDS would improve. The intent of the conditions is to reduce pollution that reaches coastal waters from failing OSDS, pet excrement, lawn and garden activities, turf management, state roads, state bridges, degradation of wetlands and riparian areas, fueling stations and sewage facilities at marinas, etc. Reductions in pollutants from these activities would improve water quality and could potentially result in there being fewer impaired coastal water bodies. In short, the adoption and implementation of new programs, authorities, and/or enforceable policies to address the conditions would have similar consequences to those resulting from the implementing management measures described above, including minor benefits to the physical and biological environments.

Disapproval of the Illinois Coastal Nonpoint Program would have minor adverse effects on the physical and biological environment. Most programs, authorities, and enforcement mechanisms that address nonpoint pollution in Illinois would continue to be implemented independent of any federal action. However, CZARA mandates that EPA cut 30% of the CWA section 319 funding awarded to a state and NOAA cut 30% of CZMA section 306 funding for which a state is eligible if the state fails to submit an approvable coastal nonpoint program. Reductions to Illinois' CZMA and CWA funding would reduce the state's ability to fully implement its coastal management program and water quality program. It is difficult to predict the potential effects of 30% cuts because the priorities for these programs can change over time, and projects funded vary every year. Since both of these programs currently provide environmental benefits, any reduction in their funding is likely to result in a reduction in environmental protection for coastal resources and water quality. For example, a reduction in section 319 funding might cause Illinois to scale back staff support for its 319 program (including technical assistance) and/or pass-through grants. In either case, efforts to control coastal nonpoint pollution and restore degraded waters would be reduced. For estimates of the amount of nitrogen, phosphorous, and sediment loading reduced as a result of past projects funded under section 319, see the most recent "Section 319 Biannual Report," pp. 52-55 (IEPA 2016b). For example, IEPA estimated that projects funded in FY2011 reduced more than 460,000 pounds of total suspended solids per year, almost 50,000 pounds of nitrogen per year, more than 20,000 pounds of phosphorous per year, and more than 20,000 tons of sediment per year. These data demonstrate that if funding were cut back substantially and the number of BMPs installed declined dramatically because NOAA and EPA disapproved the program, adverse environmental effects would be likely.

4.2.2 Impacts to the Socioeconomic Environment of the Approval Decision

Approval by NOAA and EPA of the many existing programs and policies that meet the requirements for management measures would have no impacts on the socioeconomic

environment in coastal Illinois because these programs, policies, and mechanisms have already been in place in Illinois since at least 2014. (The programs, authorities, and enforcement mechanisms are diverse and have been in place for varying periods of time.) In addition, full approval, conditional approval, and no action would allow Illinois to avoid (at least temporarily) the penalty provisions in CZARA that would reduce both CWA section 319 and CZMA section 306 grant funds by 30%. These programs offer positive socioeconomic benefits because the funds benefit nonpoint pollution reduction and coastal zone management, thereby improving the quality of the environment enjoyed by residents and recreational users. Also, some of the funds are potentially available to community groups, among other entities, offering additional socioeconomic benefits in the form of capital that can directly benefit local economies. As noted in the preceding section, program approval is also intended to improve interagency coordination, leading to institutional benefits, such as improved programmatic efficiencies.

In response to feedback from NOAA and EPA about its program, Illinois might modify its coastal nonpoint program to respond to federal recommendations; these modifications could have minor socioeconomic costs or benefits. To the extent that Illinois adopts new initiatives to address conditions established by NOAA and EPA for full approval, there could also potentially be minor, insignificant socioeconomic impacts (positive and negative) in the future. To meet the conditions, the state and its partners might augment their efforts to address pollution from operating OSDS, pet excrement, lawn and garden activities, turf management, state roads, state bridges, marina fueling stations, sewage facilities at marinas, etc. New initiatives could require minor administrative costs for implementation or technical assistance (e.g., staff time) or require some short-term uses of the environment to be modified as part of implementing management measures. However, the short-term costs will bring about long-term benefits to coastal water quality, providing socioeconomic benefits, particularly to recreational users of coastal waters (because of their enhanced aesthetic and recreational value). Also, public outreach activities carried out in connection with the coastal nonpoint program could reduce the cost of implementing new efforts by leading to behavior change (e.g., source reduction) with respect to actions affecting coastal nonpoint pollution.

Disapproval of the Illinois Coastal Nonpoint Program would have minor adverse effects on the socioeconomic environment because of the associated penalties with respect to CWA section 319 and CZMA section 306 funding. These funding sources support projects designed to improve water quality and coastal zone management in Illinois. IEPA uses a portion of the CWA Section 319 funds for its operating costs and awards the rest of the CWA section 319 funds as grants to local units of government, non-profit organizations, community groups, and other entities. These grants support such activities as implementation of approved watershed-based plans; development of watershed-based plans or TMDL implementation plans; implementation of BMPs to protect or restore water resources; certain outreach and education projects; monitoring; and research. Page 32 of Illinois' March 2016 "Section 319 Biannual Report" (IEPA 2016b) contains a table showing the allocations of CWA Section 319 funding to Illinois since 1990. Between FY2011 and FY2015, the total amount of Section 319 funds awarded by EPA to IEPA has been between $5.6 and $6.3 million. IEPA retained some funds for its base operating expenses and awarded more than 60% of its total section 319 allocation during each of those FYs to subrecipients within Illinois, which has translated into at least $3.4 million per year in Section 319 grants within the entire state, across the last five years. If Illinois' coastal

nonpoint program were disapproved, it would result in EPA withholding on the order of $1.7 to $1.9 million per year in section 319 funds, if the level of total funding available to states in the future were similar to levels made available in the past 5 years. Illinois received almost $2 million in CZMA section 306 funds in the last two fiscal years; the penalty for failure to submit an approvable coastal nonpoint program would include loss of approximately $600,000 in CZMA funds, as well. Both the CWA and CZMA funds require cost-sharing (matching funds from other sources), so the loss to the state economy if the coastal nonpoint program were not approved would be substantially more than $1,700,000 if leveraged funds were factored in.

4.3 Other Impacts

Most of the impacts of program implementation have been explored in the preceding subsections. See also Section 5.0 for additional discussion of selected mandates that assign certain responsibilities to federal agencies (primarily stewardship responsibilities related to specific types of resources). In addition to the impacts already discussed, a variety of other potential impacts of the approval decision were evaluated. These evaluations are outlined below.

4.3.1 Impacts on Threatened and Endangered Species, Critical Habitat, and Invasive Species

NOAA and EPA have determined that there would be no projected impacts of any of the alternatives to threatened or endangered species or their critical habitat (as defined under the Endangered Species Act) or to invasive species. Section 5.3 outlines Endangered Species Act compliance. The approval decision would have no effect on threatened and endangered species or their critical habitat. Individual projects funded under the CZMA, CWA, and with future coastal nonpoint funding (if appropriated) would be evaluated with respect to their potential to affect resources protected pursuant to the Endangered Species Act; appropriate procedures are followed when there is a need to consult with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service. The approval decision would not exacerbate invasive species concerns in Illinois (see discussion of Executive Order 13112 in Section 5.5). Any nonpoint pollution reduction projects supported would not be expected to introduce any invasive species and would be subject to federal and state requirements intended to reduce the spread of invasive species.

4.3.2 Impacts on Historic Resources

The approval decision has no potential to cause effects on historic properties in Illinois. See Figure 4 for a map of those properties in the vicinity of Illinois' coastal zone. Individual projects supported with CZMA funds, CWA funds, and/or coastal nonpoint program funding, if appropriated, would be evaluated with respect to their potential to affect historic properties. Procedural requirements associated with the National Historic Preservation Act would be followed by the funding agency, as needed, after individual projects are proposed.

4.3.3 Impacts on Air Quality, Noise, and Climate Change

Any air quality or noise impacts from projects that support the objectives of the coastal nonpoint program would likely be short-term and of no greater magnitude than other

construction projects occurring in coastal areas. The approval decision would not significantly impact air quality or noise levels. Coastal nonpoint program implementation would have a *de minimus* impact on greenhouse gas emissions because the types of projects funded are not typically energy-intensive. None of the alternatives would impact greenhouse gas emissions because a federal decision to fully approve or disapprove the Illinois coastal nonpoint program would not change the laws, regulations, and programs that operate in Illinois. To the extent that conditional approval of the Illinois coastal nonpoint program might cause Illinois to alter any of it efforts to improve coastal water quality, these modifications would have a *de minimus* impact on greenhouse gases. Although climate change could have minor impacts on at least some individual projects supported under section 319 of the CWA, under section 306 of the CZMA, and/or by state and local partners, the projects will still have beneficial impacts on nonpoint pollution as the climate changes. Climate change and related impacts do not affect the NOAA-EPA approval decision.

4.3.4 Impacts on Public Health and Safety

None of the alternatives would be anticipated to have significant impacts on public health or safety. There would be potential minor adverse effects on public health and safety from the program disapproval alternative because the required funding cuts could adversely impact initiatives that improve water quality, with public health and safety implications. There could be minor improvements to public health and safety from conditional approval if changes made to the Illinois program to address the conditions (such as the one related to marina fueling station design) have ancillary benefits on public health and safety. In addition, program implementation would not have significant impacts on public health or safety, though adopting new practices that promote the objectives of the coastal nonpoint program would result in some improvements to public health and safety due to cleaner coastal waters.

4.3.5 Relationship of Short-Term Uses of the Environment and Long-Term Productivity

It is possible there might be some minor, short-term adverse socioeconomic effects resulting from behavioral restrictions or administrative costs stemming from implementation of parts of the coastal nonpoint program. In addition, projects funded under CWA Section 319 or CZMA Section 306 could have short-term adverse environmental impacts during their construction phase, for example. However, any short-term adverse effects would be outweighed by the long-term benefits to coastal communities, tourists, and recreational users resulting from improved characteristics of the environment (e.g., enhanced environmental quality, recreational value, and economic benefits) due to implementation of management measures, grant-funded projects, the Clean Marina Initiative, etc. Thus, implementation of the proposed coastal nonpoint program will help assure long-term benefits to the resources and communities in Illinois.

Full approval and no action (if the latter were maintained over the long term) would also have long-term beneficial impacts to the environment because allowing CZMA Section 306 and CWA Section 319 funding to continue at their full levels helps improve environmental conditions and administrative coordination (e.g., CZMA funding supports federal consistency reviews and ICMP staff participation in planning efforts; CWA funding supports nonpoint source management activities carried out by IEPA's Office of Water Resources; and both funding

sources promote effective administration of existing resource protection mandates). As noted in the 2011 ICMP FEIS, Illinois' coastal zone is used in a variety of ways, and ICMP endeavors to balance management by protecting key resources while allowing growth to continue, i.e., to maintain long-term productivity and economic vitality. Conditional approval would have the same short-term benefits as full approval, but would be temporary, after which time NOAA and EPA would fully approve or disapprove the Illinois coastal nonpoint program. It is possible that a disapproval decision could have some adverse impacts on the long-term productivity of the environment if the 30% reductions in the two funding sources were in effect over the long term. However, regardless of the approval decision, ICMP and the Illinois Nonpoint Source Management Program are both designed to provide long-term environmental benefits.

4.3.6 Coastal Nonpoint Program Administrative Coordination and Technical Assistance

The roles of various agencies in Illinois' coastal nonpoint program are explained in the Illinois Submittal (IDNR and IEPA 2014). Numerous mechanisms ensure that Illinois' coastal nonpoint program is coordinated among these agencies. Several state statutes mandate such coordination, and those statutes are supplemented by the Illinois Nonpoint Source Management Program and other mechanisms, which facilitate collaboration among state agencies, the Metropolitan Water Reclamation District, Lake County Stormwater Management Commission, and others. ICMP established a Coastal Advisory Group (which includes representatives from all municipalities in the Illinois coastal nonpoint management area) to oversee direction and implementation of the coastal nonpoint program. ICMP also established a Coastal Nonpoint Source Advisory Panel to help guide program development and implementation. NOAA and EPA propose to find that Illinois' program contains mechanisms to improve coordination among state agencies and between state and local officials.

Illinois has demonstrated that well-established programs, functions, and partnerships among federal, state, and local government units, academia, industry, and nonprofit groups exist within the state to deliver technical assistance for planning and implementing BMPs to protect and improve water quality, as well as technical assistance for development and implementation of any additional management measures that may prove necessary. For example, the Lake County Stormwater Management Commission provides technical assistance to communities on stormwater issues and implementation of the Lake County WDO. Information and education are integral parts of the technical assistance delivery system for conservation and nonpoint pollution control in Illinois. Technical assistance for additional management measures in the Illinois' coastal nonpoint management area will be provided through these programs, functions, and partnerships. NOAA and the EPA conclude that Illinois has an effective strategy for providing technical and other assistance to local governments and the public to further the objectives of its Coastal Nonpoint Pollution Control Program. NOAA and EPA propose to find that Illinois' program includes sufficient efforts to provide technical assistance across all management measures.

4.3.7 Cumulative Impacts

Cumulative impact is defined at 40 CFR §1508.7 as:

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

According to Council on Environmental Quality guidance on "Considering Cumulative Effects under the National Environmental Policy Act," as part of determining whether cumulative effects are significant, it is appropriate to consider whether the affected environment can withstand the stress of cumulative impacts without crossing ecological thresholds. That guidance notes:

> The significance of cumulative effects depend[s] on how they compare with the environmental baseline and relevant resource thresholds (such as regulatory standards).... The [action agency] must determine the realistic potential for the resource to sustain itself in the future and whether the proposed action will affect this potential.... By definition, cumulative effects analysis involves comparing the combined effect[s] with the capacity of the resource, ecosystem, and human community to withstand stress. [Council on Environmental Quality 1997]

As noted previously, the federal approval decision regarding the proposed Illinois coastal nonpoint program would affect CZMA section 306 funding, available for projects within the Illinois coastal zone, and CWA section 319 funds, which can be used for projects throughout Illinois. This cumulative effects analysis therefore considers the entire state. Data collected by IEPA indicate that the most commonly identified nonpoint sources contributing to impairments in lakes across the state were agriculture, littoral/shore area modifications, recreational sources of pollution, contaminated sediments, runoff, livestock, and storm sewers. The most frequently-identified nonpoint sources contributing to stream impairments were agriculture, hydrologic modifications, urban runoff, and livestock. The largest contributors to impairments in Lake Michigan were atmospheric deposition of contaminants, unknown sources, combined sewer overflows, urban runoff, and storm sewers (IEPA 2013, 2016). Some land uses affecting nonpoint pollution, such as agriculture, are gradually declining in Illinois (U.S. Department of Agriculture 2012). Other sources, such as recreational sources, could increase over time. Runoff from storm sewers and CSOs should be declining in the vicinity of Chicago due to the TARP, but could increase in other areas, especially in areas with increasing development.

There are many organizations and agencies that fund, carry out, and otherwise contribute to projects affecting water quality in Illinois. These entities include the U.S. Army Corps of Engineers, EPA, NOAA, ICMP (and other parts of IDNR), other state agencies, regional bodies, county departments, local agencies, and nongovernmental groups. For example, the Calumet Stormwater Collaborative is a partnership focused on managing regional water quality and quantity issues. Development is occurring in some areas, others are being redeveloped, and restoration is ongoing or planned in others because of historical land and waste management decisions that adversely affected resources. Sometimes, after a restoration project is completed (such as dredging at Waukegan Harbor and cleanup of nearby former industrial sites), additional

development can follow. Some agencies and organizations are involved with large scale projects of interest regionally. Although not an exhaustive list, below is information about some of the publicly-funded projects in Illinois that could affect land and water use, as well as water quality, over time.

First, the cumulative effect analysis in the FEIS (see section 5, "Environmental Effects") for NOAA's decision to approve the ICMP is incorporated by reference. It is relevant to the cumulative effects analysis for the coastal nonpoint program because the alternatives currently under consideration would result in either maintaining or reducing the level of funding provided to ICMP under Section 306 of the CZMA. Section 5 of the FEIS outlines the types of projects ICMP funds, as well as the benefits to the environment of those investments. The FEIS also addresses the intergovernmental coordination (including via federal consistency review, partnerships, and through grant-funded efforts) that ICMP facilitates and associated beneficial environmental and institutional impacts. ICMP is designed to ensure that proposed state or federal activities affecting coastal resources are subjected to comprehensive review (NOAA 2011). The individual projects funded by ICMP under the CZMA are subject to NEPA review by NOAA when they are proposed. As mentioned previously, the Illinois Lake Michigan Implementation Plan set priorities for ICMP efforts in the near term.

Section 5.1.2 of the 2011 FEIS listed numerous large-scale construction, infrastructure, redevelopment, and recreational projects completed, underway, and planned in the Illinois Coastal Zone, as of December 2011. Updates about the projects planned at that time are provided below. Some of those projects have not come to fruition. For example, the proposed Gateway Marina, near Navy Pier, has not been built (Chicago Harbors 2016). The Governor of Illinois vetoed legislation that would have advanced a proposal to build a coal gasification plant, and there is currently no apparent momentum to reactivate the proposal (Wernau 2012). Dredging at Waukegan Harbor to address polychlorinated biphenyl contamination has been completed. Sampling of fish, benthos, and plankton in Waukegan Harbor is helping agencies monitor biological responses to the cleanup and assess further needs related to remaining beneficial use impairments (EPA 2016). After a $9.5 million investment, a 40-acre park opened on Northerly Island, featuring such elements as constructed and restored ecosystems and fish habitats, a trail system and a new lagoon (U.S. Army Corps of Engineers Chicago District n.d.). In early 2016, a redevelopment proposal that had long been in the works for the U.S. Steel South Works site was dropped; the parcel's future is undecided (Chicago Sun-Times 2016). However, South Lake Shore Drive was extended two miles and now runs through the U.S. Steel South Works site (Hilkevitch 2013). Besides these planned projects, the FEIS also listed other recently-completed projects, including efforts in Chicago to construct or reconstruct 9 miles of step-stone revetments along the shoreline; a new beach, harbor and marina at 31st Street; a new urban park and marina at Millennium Park; a new riverwalk along the south bank of the Chicago River; and new facilities at the Chicago River Turning Basin. Also, the FEIS referenced a few activities outside Chicago, such as cleanup efforts at the Zion Nuclear Station (which is still being decommissioned) and dredging at Great Lakes Naval Training Center (NOAA 2011).

Collaborations Supported by the Illinois Coastal Management Program

ICMP supports numerous projects. This support can include funding, technical assistance, planning, or assistance with coordination, among other possibilities. Collaboration about individual coastal projects by ICMP and its Technical Advisory Committee is designed to ensure that state agencies exercising their authorities within the coastal zone adhere to the ICMP policies and management techniques, coordinate and exchange input on projects, and minimize the adverse impacts of planned projects within the coastal zone (NOAA 2011). See section 3.3.6 for more information about types of projects funded by NOAA and ICMP. Some of the projects support the objectives of the Lake Michigan Lakewide Action and Management Plan (LAMP). For example, recent projects have been designed to evaluate regional sand management options in Illinois' North Shore and support IDNR efforts to develop a coastal focus area as part of the Illinois Wildlife Action Plan. IDNR will also promote the Lake Michigan Partnership's plans to assess the state of the lake, evaluate progress towards LAMP goals and objectives, and promote instituting management actions to address identified problems (EPA 2016).

One example of a project funded under section 306 of the CZMA to improve coastal water quality was a plan for improving beach water quality, mitigating nonpoint pollution, and improving public access and habitat at Montrose Beach. In all, as of June 2015, ICMP had funded projects in ten communities that developed or updated polluted runoff management ordinances, policies, or plans; projects in six communities to implement polluted runoff management ordinances, policies, or plans; and projects in two communities to develop or update port or waterfront redevelopment ordinances, policies, or plans. In addition, as of mid-2015, ICMP had funded enhancements at five public access sites, and it had contributed towards restoration of more than 1,600 acres of beaches and dunes and another 262 acres of other types of habitats. ICMP also funded projects contributing to reducing vulnerability to hazards, increasing awareness of hazards, development or updating of sustainable development policies and plans, and removal of marine debris, among other objectives. Also, ICMP had already supported more than 460 training and education events that reached more than 18,000 participants by June 2015 (ICMP 2013b, 2014, 2015b).

It should also be noted that NOAA approved, in 2015, Illinois' 2016-2020 "Section 309 Assessment and Strategy," making Illinois eligible to receive funding under Section 309 of the CZMA. The Section 309 Assessment and Strategy identifies enhancement projects that ICMP would like to fund under CZMA section 309. The outlines for Illinois' proposed strategies and their projected impacts are incorporated by reference. These projects would focus on coastal shoreline erosion and accretion, ravine management, public access planning, wetlands assessment, and improving managers' understanding of hydrology in the Lake Michigan nearshore area. If funded, these projects would add to the cumulative effects to lands and waters of the Illinois coastal zone and would be generally beneficial. For example, the wetlands strategy would allow managers to prioritize wetlands for potential acquisition or other protection based on their ability to manage and filter stormwater, which might lead to enhanced protections for important wetlands and long-term water quality benefits (ICMP 2015a).

Other State Programs

Several state authorities and programs govern water resource management in Illinois, as outlined in the Illinois Submittal. For example, the Rivers, Lakes and Streams Act calls for

reducing pollution and provides for enforcement mechanisms for nonpoint pollution management. It also, among other things, establishes a joint IDNR-IEPA permitting requirement for proposed structures or fill in Lake Michigan, whereas IDNR has permitting authority for structures or fill in other public bodies of water in Illinois. Also, IDNR evaluates the potential for projects involving placing a structure or fill in Lake Michigan to cause erosion or other negative impacts and requires the impacts to be minimized or mitigated. The Illinois Environmental Protection Act prohibits any actions that could cause water pollution, requires permits be issued for construction projects that could cause water pollution, and designates IEPA as the state water pollution control agency. IEPA implements a site remediation program to address sites of releases, threatened releases, or suspected releases of hazardous substances, pesticides, or petroleum products. The Illinois Environmental Protection Act also gives the Illinois Pollution Control Board authority to establish, implement, and enforce pollution control standards, including rules implementing the NPDES and surface water quality standards. In short, these state agencies operate programs that have beneficial impacts on environmental quality, including water quality, in Illinois. Also, IEPA distributes loans for construction of municipal wastewater treatment facilities and other types of funding (IDNR and IEPA 2014).

As noted previously, Illinois operates the Nonpoint Source Management Program, pursuant to section 319 of the Clean Water Act. Information about the funding awarded under that program is summarized in section 3.3.7. Results from Illinois' biennial monitoring show that most parts of Illinois would benefit from additional efforts to control nonpoint pollution. The Section 319 grant program makes it possible for partners to carry out many projects every year designed to reduce this type of pollution. IEPA encourages the development of watershed-based plans, and it restricts expenditures of section 319 incremental funds to projects in impaired watersheds with either an established TMDL or watershed-based plan. Watershed-based plans that have been completed or are under development are listed in the "Biannual Report" (IEPA 2016b). For example, segments of the Des Plaines River that flow through Lake and Cook Counties that were impaired due to total suspended solids and sedimentation. IEPA contributed $968,555 in section 319 funds to implement, in partnership with local stakeholders, four nonpoint pollution control projects involving installed BMPs in the Des Plaines River watershed. These projects successfully addressed the impairments related to total suspended solids and sedimentation (EPA 2010).

The "Biannual Report" presents the total number of BMPs of many different kinds that have been installed in Illinois since the inception of Illinois' Section 319 grant program and amounts of four different types of pollutants these projects have reduced. All the BMPs installed since 1990 are estimated to have collectively reduced a total of 966,000 pounds of nitrogen per year, 454,000 pounds of phosphorus per year, 3,842,000 pounds of total suspended solids per year, and 501,000 tons of sediment per year that would otherwise impact waterways throughout the state. The "Biannual Report" also tracks progress towards numerous other goals outlined in the updated version of the Illinois Nonpoint Source Management Program (approved in 2013). Some of these goals include conducting certain planning activities, improving coordination, fully restoring at least a few waterbodies impaired due to nonpoint pollution, coordination with federal partners with facilities in Illinois, and completing initial restoration planning for some areas with approved TMDLs, as well as targets for reducing the percentage of waterways impaired due to nonpoint pollution and the amounts of nonpoint pollutants reaching water bodies.

Projects Funded under the Great Lakes Restoration Initiative

In recent years, the largest source of federal funding for restoration efforts in the Great Lakes region has been the Great Lakes Restoration Initiative (GLRI), launched in 2010 to accelerate efforts to protect and restore the ecosystems of the Great Lakes. Through FY2015, this funding source has contributed approximately $100 million for 88 projects in Illinois (Great Lakes Commission 2016). GLRI focus areas for these projects have been restoring wetlands and other habitats; combating invasive species; promoting nearshore health; cleaning up toxics; and tracking progress and working with strategic partners. GLRI has supported the Waukegan Harbor cleanup and numerous habitat restoration projects along the Illinois shoreline. For example, the City of Chicago has invested GLRI funds to support improved beach safety and monitoring, restoration of dunes and fish habitat, restoration planning, planning studies, stormwater management and water control upgrades, invasive species management, etc. Some of the GLRI funding for projects in Illinois has gone to federal agencies, including the U.S. Army Corps of Engineers, Department of the Interior, and Natural Resources Conservation Service. Other recipients of GLRI funding include IDNR, Illinois/Indiana Sea Grant, Lake County Stormwater Management Commission, Lake County Forest Preserve District, Forest Preserves of Cook County, Northeastern Illinois Invasive Plant Partnership, Openlands and other non-profit organizations, a few academic institutions, the Metropolitan Mayors Caucus, and selected local units of government. These projects have addressed areas within and outside of Illinois' coastal zone. There have been at least a dozen projects in Illinois that have received $1,000,000 or more each (through FY2015). These projects have supported a sediment surveillance program, urban forest restoration in response to the invasive emerald ash borer, restoration of Waukegan Harbor, Asian Carp control, and five fishery and ecosystem restoration programs funded by the U.S. Army Corps of Engineers (including at Jackson Park, Northerly Island, Burnham Prairie, and Lake County Ravine #8, which is near Highland Park) (Great Lakes Commission n.d.). For more information, see http://www.glri.us/ or http://projects.glc.org/restore/glrimap/.

In 2014, the Great Lakes Interagency Task Force released the "GLRI Action Plan II" to summarize the focus areas for FY15-FY19 GLRI funding. These focus areas are cleaning up Areas of Concern, preventing and controlling invasive species, reducing nutrient runoff contributing to harmful/nuisance algal blooms, and restoring habitat to protect native species. In addition, GLRI will integrate climate resiliency considerations and a science-based adaptive management framework to prioritize problems, select projects, and monitor their effectiveness. While the Action Plan II does not identify specific projects for which funding would be requested in the future, it sheds some light on the types of efforts likely to be funded under GLRI in the future (Great Lakes Interagency Task Force 2014). See below, under "Reasonably Foreseeable Projects," for information about some of the GLRI projects proposed for the future.

Other Projects Recently Completed or in Progress

Some of the other projects recently completed in coastal Illinois include restoration at Rosewood Beach in Highland Park, conversion and redevelopment of a portion of Grant Park in Chicago into Maggie Daley Park; and a new pedestrian bridge over Lake Shore Drive at 35th

Street, on the South Side of Chicago. Other projects that are underway include restoration of Big Marsh (see section 3.2.4.2); expansion of the Chicago Riverwalk (along the main branch of the Chicago River); expansion of trails within the Millennium Reserve; improvements to hydrology at Eggers Marsh; stormwater improvements near Waukegan Harbor, on Sea Horse Drive; stream restoration at Bull Creek; restoration of Millard and Moraine Park Ravine; improvements at Montrose Beach; installation of green infrastructure at Navy Pier; a new pedestrian and biking trail called Navy Pier Flyover; expansion of Fullerton Beach; establishment of a maritime academy and new marina in the Riversdale neighborhood on the South Side of Chicago; cleanup of the Outboard Marine Corporation Superfund site along Waukegan Harbor; and cleanup of other contaminated sites along Waukegan Harbor (L. Cotner, ICMP, personal communication, March 4, 2016).

Private Development

Land management practices on individual properties have contributed to past water quality impairments, and this can be expected to continue in the future. In the state as a whole, more than three-quarters of the land is farmed or used to raise livestock. In some parts of the state, there are industrial facilities, and contaminants from most of them would be expected to be managed in accordance with NPDES permits. Development, construction, and hydrologic modification (including channelization) also contribute to nonpoint pollution in Illinois, including by increasing runoff, erosion and sedimentation. Fuel and mineral extraction (including coal mining) also contribute to impairments of some of Illinois' water bodies. Other contributors to nonpoint pollution in Illinois, including urban runoff, are discussed in the 2013 report on Illinois' Nonpoint Source Management Program (IEPA 2013). Impervious surfaces made up 3.1% of Illinois in 2001 and 3.3% of the state by 2011, which may be related to the fact that Illinois was only 11.0% developed as of 2001 and 11.6% was developed in 2011 (Multi-Resolution Land Characteristics Consortium 2014). The fact that so much of Illinois is not developed suggests that additional development could potentially contribute to nonpoint pollution for the foreseeable future.

Many planning documents exist for communities in Illinois. When the Millennium Reserve Steering Committee assessed, in 2014, existing plans that affected the Millennium Reserve area, more than 60 different plans published or under development since 1998 were identified (Millennium Reserve Steering Committee 2014). This suggests that there are likely hundreds of planning documents, authored by various groups (including regional councils, regional planning commissions, municipalities, and others), that outline stakeholders' visions for future development in all the different parts of Illinois. Without reviewing all of them, it is still possible to identify some major types of development that would be expected, including industrial and commercial development, new housing, new schools and education centers, enhancements to areas used for recreation, new or widened roads, new office parks, redevelopment of former industrial sites, new marinas, additional piers and seawalls, etc. Because there are so many unknowns related to projects that may be carried out in the future, it is difficult to pinpoint the cumulative effects of land use and development in Illinois over time. However, data from the 2016 Integrated Water Quality Report for Illinois suggest that, for the most part, water quality has been holding steady over the past few years in Illinois (or improving slightly) (see Tables ES-1, ES-2, and ES-3). If the many ongoing efforts to manage point and

nonpoint pollution in Illinois maintain these trends, cumulative impacts of land use and development practices in the foreseeable future would not be expected to stress ecosystems to the point that they would cross ecological thresholds.

Reasonably Foreseeable Projects

In the future, ICMP will continue to: distribute sub-grants for diverse initiatives that further its priorities; provide planning assistance; foster partnerships and facilitate coordination among stakeholders; support intergovernmental planning (including on issues affecting multiple states); conduct community outreach, training, and educational activities; provide technical assistance; promote improvements to habitat, water quality, and public access sites (including promoting the Clean Marina Initiative); support efforts to reduce vulnerability to hazards (e.g., stormwater, flooding, hazardous currents, and erosion); facilitate sediment management planning; conduct activities that support ICMP 309 Strategies; etc. (D. Tecic, ICMP, personal communication, March 15, 2016). One of ICMP's partners within IDNR, the Office of Water Resources, will continue to carry out activities to protect the state's interests in coastal water resources, including regulating activities within or adjacent to Illinois rivers, lakes and streams, overseeing allocation of water from Lake Michigan and water resource planning, etc. (IDNR 2016).

IEPA's Bureau of Water will continue monitoring the quality of surface and groundwater resources; managing permit programs for municipal, stormwater, and industrial effluent; and ensuring compliance with regulatory standards and other applicable requirements. The Bureau of Water also will continue to manage a number of loan and grant programs supporting upgraded and new wastewater, stormwater treatment, and public water supply infrastructure, as well as programs that fund projects that reduce nonpoint source pollution, support green infrastructure, and otherwise protect and restore lakes and streams (IEPA 2015c).

Also, IEPA identified the following list of statewide initiatives affecting water quality:

- Modified requirements for MS4s to qualify for coverage under the IEPA General Storm Water Permit, including requirements for implementing storm water management programs (see http://www.epa.illinois.gov/topics/forms/water-permits/storm-water/ms4/index);
- Implementation of the Illinois Nutrient Loss Reduction Strategy (see http://www.epa.illinois.gov/topics/water-quality/watershed-management/excess-nutrients/nutrient-loss-reduction-strategy/index);
- Development and implementation of TMDLs (for more information, see http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/index);
- Coordination among stakeholders through watershed planning efforts (e.g., the Fox River Study Group and the DuPage River Salt Creek Workgroup); and
- Partnerships focused on reducing the loss of nutrients from agricultural lands and promoting streambank restoration and other nonpoint BMPs (see, e.g., Illinois Council on BMPs at http://illinoiscbmp.org, Keep it 4R Crop at http://www.keepit4rcrop.org, and Partners for Conservation – Streambank Stabilization and Restoration Program at

http://www.iira.org/rdrg/partners-for-conservation-streambank-stabilization-and-restoration-program-ssrp).

(A. Walkenbach, IEPA, personal communication, March 14, 2016)

In addition, ICMP provided the following list of potential future projects in the coastal zone that might impact coastal management, coastal water quality, public access to water resources, nonpoint pollution, and/or development in Illinois:

- Remaining components of the Tunnel and Reservoir Project;
- Planned coastal education center in Waukegan;
- Additional segments of the Cal-Sag Trail (eastern portion);
- Pedestrian bridges over Lakeshore Drive at 41st and 43rd Streets in Chicago;
- Indian Ridge Marsh restoration;
- Illinois Beach shoreline stabilization;
- Other shoreline protection projects (subject to receiving permits from IDNR);
- Improvements and repairs at North Point Marina;
- Expansion of Northwestern University – Lakeshore Athletic Facility;
- Mitigation, capping and/or ecosystem restoration at Bubbly Creek (the South Fork of the South Branch of the Chicago River, a 1.3-mile channel flowing from the Racine Avenue Pump Station to the South Branch of the Chicago River) and nearby former manufactured gas plants;
- New high-speed rail service and associated upgrades between St. Louis, MO, and Chicago, IL;
- Removal of 11 dams on the Des Plaines and Chicago Rivers in Cook County; and
- Decommissioning of Zion Nuclear Power Plant.

(L. Cotner, ICMP, personal communications, March 4 and March 15, 2016)

In addition, the Millennium Reserve Initiative could ultimately result in major changes to the landscape in the Calumet region. Some of the priorities identified by the Millennium Reserve Steering Committee in 2014 included providing public access to Lake Calumet, improving stormwater management via investments in green infrastructure, building an environmental education center, supporting recognition of historic sites, redeveloping former industrial sites in the Calumet region, developing a fund to support land redevelopment, and expanding the trail system for hikers and bikers (ICMP 2015a; Millennium Reserve Steering Committee 2014). Some priorities might be revised in the next few years, e.g., in light of the interests of partners in Indiana. In 2015, invasive species removal and other restoration work at a dozen sites in the Millennium Reserve was funded; three trail segments were completed; the Calumet Stormwater Collaborative advanced some of its priorities, including by applying for funding for green infrastructure training and watershed planning; a feasibility study for the proposed environmental education study was completed; and the Calumet National Heritage Area initiative made progress on its feasibility study (S. Burns, IDNR, personal communication, March 15, 2016). For more information about other growth and development anticipated in the Chicago region, see the "Go To 2040" plan, developed by CMAP, at http://www.cmap.illinois.gov/about/2040. CMAP is undertaking development of a new comprehensive plan, to be called "On to 2050."

Numerous types of projects supporting GLRI goals are reasonably foreseeable during at least FY16-FY19 (contingent on Congressional appropriations), including: restoration projects and technical assistance to support addressing contamination contributing to beneficial use impairments at Areas of Concern; monitoring contaminant levels in fish and their impacts; public outreach related to consumption of contaminated Great Lakes fish; management of and education about terrestrial and aquatic invasive species (including Asian carp); studies of ballast water management methods; implementation, monitoring, and evaluation of restoration projects and BMPs to reduce nutrients, sediment, and other types of nonpoint pollution; studies of processes contributing to nonpoint pollution; engagement and training of stakeholders about watershed management; green infrastructure and other projects to reduce urban and agricultural runoff; wetlands enhancement projects and assessments of their effectiveness; regional coordination efforts; grants for restoration projects carried out by nongovernmental organizations and /or state, local, or Tribal governments; fish population studies, fish habitat assessments, and fish stocking; identification of climate science and tools relevant to GLRI efforts; training teachers, other professionals, and students about climate change impacts to the Great Lakes; assessments of landscape resilience to climate change stressors; coastal monitoring and data delivery; and capacity-building, including in support of implementing LAMPs (B. Schleck, NOAA, personal communication, March 9, 2016). This list includes projects that could be undertaken anywhere in the Great Lakes; they may not all affect Illinois.

Conclusions about Cumulative Effects

The Illinois Submittal provided information about both sources of nonpoint pollution in Illinois' coastal nonpoint management area and numerous programs and initiatives designed to help manage impacts of these sources on water quality. The descriptions of the sources and the approaches used to manage them in Illinois are incorporated by reference (IDNR and IEPA 2014). While the activities that produce pollutants have minor adverse effects on the physical, biological, and socioeconomic environments, implementation of the components of the Illinois coastal nonpoint program, ICMP, the Illinois Nonpoint Source Management Program, and other initiatives (including those listed above) aimed at protecting water resources will cumulatively have minor beneficial impacts on the physical, biological, and socioeconomic environment in Illinois. These management efforts will: reduce the extent to which nonpoint pollutants enter water bodies and adversely affect water quality; increase public awareness through outreach and technical assistance about water quality and other coastal issues; improve coastal and nonpoint source planning; restore habitat; facilitate water resource management planning; promote implementation of BMPs; provide funding for local projects; and have other project-specific effects. There might be some minor, short-term adverse socioeconomic effects resulting from behavioral restrictions or implementation costs of some of the elements of these programs. The short-term effects would be outweighed by long-term benefits, as discussed in section 4.3.5. Given the minor nature of potential effects, NOAA anticipates future effects of implementing these programs would not exceed the ability of human or natural communities to withstand stress. Both the beneficial and the adverse effects of program implementation are already part of baseline conditions because all the programs, initiatives, enforceable policies, and mechanisms that make up the coastal nonpoint program already exist and are being implemented (and that is expected to continue, even under the no action alternative).

For a summary of all the potential impacts of the alternatives, see Table 7. Both the no action and full program approval alternatives would not alter cumulative impacts in the Illinois coastal zone because they would not change the status quo. If new initiatives were undertaken to meet the conditions proposed under the conditional approval alternative, they would be anticipated to result in reduced pollutant levels entering coastal waters, benefitting the physical and biological environment. It is highly unlikely that either current efforts funded under the CWA, CZMA, and other mechanisms or a scenario in which funding to ICMP and the Illinois Nonpoint Source Management Program were reduced by 30% could lead to a state in which resources, ecosystems, or human communities could not sustain themselves. In addition to having positive consequences to the physical, biological, and socioeconomic environments, conditional approval might have very minor adverse socioeconomic effects, as described previously, but they would only be a *de minimus* addition to the cumulative impacts of all the forces operating within the coastal zone.

Program disapproval could reduce the otherwise beneficial impacts of the ICMP and Illinois Nonpoint Source Management Program (hence, have adverse effects) due to the financial penalties. Under the disapproval scenario, it is not possible to predict exactly where cuts would be felt, but one could reasonably expect both ICMP and the Illinois Nonpoint Source Management Program to achieve the positive results they aim for less rapidly. Even if program effectiveness were diminished, the programs would both continue to operate, leading to cumulatively beneficial effects over the long term. The disapproval alternative and its consequences would not be expected to change cumulative impacts in Illinois to the point that resources or communities impacted by nonpoint pollution could not sustain themselves.

In short, under all the alternatives, projected cumulative impacts would not push resources or communities beyond their ability to sustain themselves. The approval decision will not affect the total number of uses of the environment (e.g., coastal development) that adversely affect water quality; development and redevelopment will continue in Illinois. Because of all the requirements designed to keep developments from adversely affecting the environment, further development would not be expected to adversely affect natural resources to such an extent that they would cross ecological thresholds. In short, all available data support the conclusion that none of the alternatives, when combined with other past, ongoing, or reasonably foreseeable efforts (which have both benefits and adverse effects of their own), would lead to cumulatively significant effects.

Monitoring

Monitoring will help Illinois track cumulative water quality impacts. Coastal nonpoint programs must describe any necessary monitoring techniques to assess over time the success of the management measures in reducing pollution loads and improving water quality. By tracking management measures and water quality improvements, states can evaluate the performance of the management measures and determine the need for additional management measures to meet water quality objectives. Illinois produced a comprehensive list and description of monitoring activities and trackable measures for most of the categories of nonpoint pollution in the §6217 (g) guidance. However, Illinois has not yet described how it is monitoring improvements in water quality and how the specific monitoring activities will be linked to implementation of

management measures and changes in water quality over time. NOAA and EPA recommend that Illinois provide a description of how data from monitoring and assessment activities will be integrated and analyzed to assess: (1) changes in pollution loads over time; and (2) changes in water quality over time. Illinois' most recent Water Monitoring Strategy (for 2015-2020) should be modified to provide the necessary foundation to evaluate the performance and effectiveness of the §6217(g) management measures and to determine if additional management measures are needed. NOAA and EPA encourage the state to proceed with developing a monitoring and tracking strategy to meet the CZARA program monitoring requirement.

NOAA and EPA propose to find that Illinois' monitoring approach does not demonstrate the ability to assess over time the success of the management measures in reducing pollution loads and improving water quality. Monitoring could support efforts to track the cumulative impacts of the coastal nonpoint program, when added to other impacts of other projects and stressors in the coastal zone. In order to receive full approval, the program must meet the following conditions. Within three years, Illinois shall develop an approach that allows the state to assess over time the extent to which implementation of management measures is reducing pollution loads and improving water quality. Illinois must have a framework in place that will track the implementation of required management measures in relationship to the scheduled monitoring activities.

4.3.8 Irreversible and Irretrievable Commitments of Resources

The primary irretrievable resource at stake is staff time. Staff at IDNR and IEPA prepared the Illinois Submittal, staff at EPA and NOAA thoroughly evaluated the Illinois Submittal, staff at NOAA prepared this draft PEA, and staff affiliated with a number of entities within the state have invested a great deal of time in carrying out those elements of the program that are already in place. If the program were conditionally approved, additional time will likely be required by staff at IDNR and partner agencies to determine how the state would meet the conditions established by NOAA and EPA for full program approval and to prepare additional documentation to be submitted. Staff at NOAA and EPA would then, in turn, evaluate the additional information submitted. To the extent the state or other partners strengthen coastal nonpoint program activities in certain areas to meet all CZARA requirements and achieve full approval, staff time would be required, as well.

Funding to implement the existing efforts outlined in the Illinois Submittal, which together comprise the proposed coastal nonpoint program, has come from numerous sources, both federal and non-federal. Once funds are spent, they become irretrievable. Also, to the extent that siting and development decisions in the coastal zone are made in compliance with applicable requirements, including those incorporated into the Illinois coastal nonpoint program, the decisions can be followed by on-the-ground development that effectively irretrievably commits resources. However, most of the Illinois coastal zone is already developed. Development will continue regardless of management measure implementation (and many elements of the management measures are already in place). Thus, any irretrievable commitments of resources associated with the alternatives would be very limited.

5.0 COMPLIANCE WITH OTHER ENVIRONMENTAL AND ADMINISTRATIVE REVIEW REQUIREMENTS

5.1 Clean Water Act

The Clean Water Act (33 U.S.C. § 1251 *et seq.*) is the principal law governing pollution control and water quality of the nation's waterways. Section 404 of the CWA authorizes a permit program for the beneficial uses of dredged or fill material in navigable waters. The U.S. Army Corps of Engineers administers the program. As a condition of wetlands permits issued under section 404, the U.S. Army Corps of Engineers also requires compliance with section 401 of the CWA, which requires applicants for federal licenses or permits to conduct activities that may result in a discharge of pollution into the waters of the United States to obtain a certification, from the appropriate state, of compliance with applicable water quality standards and goals (or a waiver from the state). Section 319 of the CWA establishes the Nonpoint Source Management Program and makes grants available to states and eligible tribes to support activities that mitigate nonpoint pollution, ranging from financial assistance, to technical assistance, education, training, technology transfer, demonstration projects, and monitoring.

***Compliance**:* The State of Illinois has been delegated authority to administer the Clean Water Act. The approval decision for the Illinois Coastal Nonpoint Program does not trigger section 401 or 404 of the CWA. Once it is approved, Illinois will implement its Coastal Nonpoint Program through changes to its nonpoint source management program approved by EPA under section 319 of the Clean Water Act.

5.2 Coastal Barrier Resources Act

Originally passed in 1982 and reauthorized in 2005 (16 U.S.C. § 3501 *et seq.*; 12 U.S.C. § 1441 *et seq.*), the Coastal Barrier Resources Act was enacted to protect coastal barrier islands and their resources. It establishes limitations on federal expenditures in designated Coastal Barrier Resources System units; however, there are certain project-specific allowances on a project-by-project basis.

Compliance: There are no Coastal Barrier Resources Act units in the State of Illinois.

5.3 Endangered Species Act

The federal Endangered Species Act and its implementing regulations (16 U.S.C. § 1531, *et seq.*; 50 CFR parts 17, 222, 224) direct all federal agencies to conserve endangered and threatened species and their habitats and encourages such agencies to use their authority to further these purposes. Under the Act, NOAA's National Marine Fisheries Service and the U.S. Fish and Wildlife Service (USFWS) publish lists of endangered and threatened species. Section 7 of the ESA requires that federal agencies consult with these two agencies to minimize the effects of federal actions on endangered and threatened species.

***Compliance**:* NOAA's Office for Coastal Management determined, in consultation with EPA, that this action will have "no effect" on threatened or endangered species or their critical habitat. Therefore, consultation with the Services under section 7 of the Endangered Species Act is not required. No new funding is available to coastal nonpoint programs as a result of their approval or conditional approval at this time. NOAA cannot predict at this time how Illinois would use

any funds in the event they were appropriated, but NOAA has processes in place to analyze individual projects for compliance with the National Environmental Policy Act (NEPA), the Endangered Species Act, and other mandates, if new funding becomes available. Projects funded under the CZMA and CWA are already evaluated individually for Endangered Species Act compliance. The programs and measures outlined in the Illinois Submittal already have effect under state and/or local law. The approval decision does not in any way impact state or local decisions. On March 30, 2015, NOAA sent a letter to the Chicago Field Office of USFWS outlining the rationale for the "no effect" finding reached by NOAA and EPA (see Appendix C). NOAA heard back from the Endangered Species Coordinator at the Chicago Field Office by telephone, who indicated that he agreed with this determination. There are not any species or critical habitat over which the National Marine Fisheries Service has jurisdiction in the Illinois coastal zone; thus, the Office for Coastal Management did not consult with National Marine Fisheries Service staff.

5.4 Environmental Justice

Executive Order 12898 on Environmental Justice and Executive Order 12948 (Amendment to Executive Order 12898) require each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The Department of Commerce's Environmental Justice Strategy also requires applicants for funding to ensure projects will have no disproportionately high and adverse human health or environmental effects on minority or low income populations.

Compliance: In general, all populations, including minorities and those with low incomes, benefit from the efforts to reduce and ameliorate nonpoint pollution that are funded under the CZMA, the CWA, and other sources, and all would benefit from coordination and technical assistance through the Illinois Coastal Nonpoint Pollution Control Program. Therefore, conditional approval of the Illinois coastal nonpoint program has no disproportionately high and adverse effects on human health and the environment of minority or low-income populations.

5.5 Executive Order 13112 − Invasive Species

The purpose of Executive Order 13112 is to prevent the introduction of invasive species, respond to and control invasions in a cost-effective and environmentally sound manner, and to provide for restoration of native species and habitat conditions in ecosystems that have been invaded.

Compliance: There are no compliance issues with Executive Order 13112, as it only applies to federal agency activities, and the only proposed federal agency activity relates to the approval of a program that already is in effect under Illinois law.

5.6 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq*.) as amended and reauthorized by the Sustainable Fisheries Act (Public Law 104-297), established a program to promote the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. After EFH has been described and identified in fishery management plans by regional fishery management councils, federal agencies are obligated to consult with the

National Marine Fisheries Service with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.

Compliance: There is no EFH in the Great Lakes or their tributaries. The proposed action has no potential to affect EFH.

5.7 Marine Mammal Protection Act

The Marine Mammal Protection Act (16 U.S.C. § 1361 *et seq.*), as amended, prohibits the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas, as well as the importation of marine mammals and marine mammal products into the U.S. The primary management objective of the Marine Mammal Protection Act (MMPA) is to maintain the health and stability of the marine ecosystem, with a goal of obtaining an optimum sustainable population of marine mammals within the carrying capacity of the habitat. The MMPA is intended to work in concert with the provisions of the ESA. There are some exceptions to the prohibitions on taking marine mammals, including a mechanism for requesting authorization from the National Marine Fisheries Service's Office of Protected Resources for "incidental," but not intentional, taking, of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing or directed research on marine mammals) within a specified geographic region. Regulations adopted under the MMPA restrict harassment (meaning any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild by causing disruption of behavioral patterns, including breathing, breeding, feeding, migration, and sheltering).

Compliance: There are no marine mammals in the Great Lakes or other waterways in Illinois. The proposed action has no potential to affect marine mammals.

5.8 National Historic Preservation Act

The purpose of the National Historic Preservation Act (16 U.S.C. § 470 *et seq.*) is to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes by specifically providing for the preservation of historical and archeological resources which might otherwise be lost or destroyed.

Compliance: NOAA and EPA determined that all the alternatives considered with regard to approving the Illinois Coastal Nonpoint Pollution Control Program have no potential to cause effects on historic properties in Illinois. As outlined in 36 CFR § 800.3(a)(1), the effect of this determination is that NOAA and EPA are not required to take any further action under the National Historic Preservation Act. If needed, determinations associated with future projects and activities undertaken under the Illinois Coastal Nonpoint Pollution Control Program that have the potential to affect historic properties will be submitted to the Illinois Historic Preservation Agency for review.

5.9 National Marine Sanctuaries Act

Under the National Marine Sanctuaries Act (16 U.S.C. 32 § 1431 *et seq.*, federal agency actions, internal or external to a national marine sanctuary, including private activities authorized by licenses, leases, or permits, that are likely to destroy, cause the loss of, or injure any sanctuary

resource are subject to consultation under the National Marine Sanctuary Act. Each federal agency proposing such an action must provide a written statement describing the action and its potential effects on sanctuary resources no later than 45 days before the final approval of the action. In addition, sanctuary permits may be required for certain actions that would otherwise be prohibited.

Compliance: The proposed project will not impact any National Marine Sanctuary resources because there are no National Marine Sanctuaries in Illinois.

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The following federal and Illinois agencies and associated representatives were consulted during the preparation of the PEA and during the review of the Illinois coastal nonpoint program. These agencies also receive a copy of the PEA.

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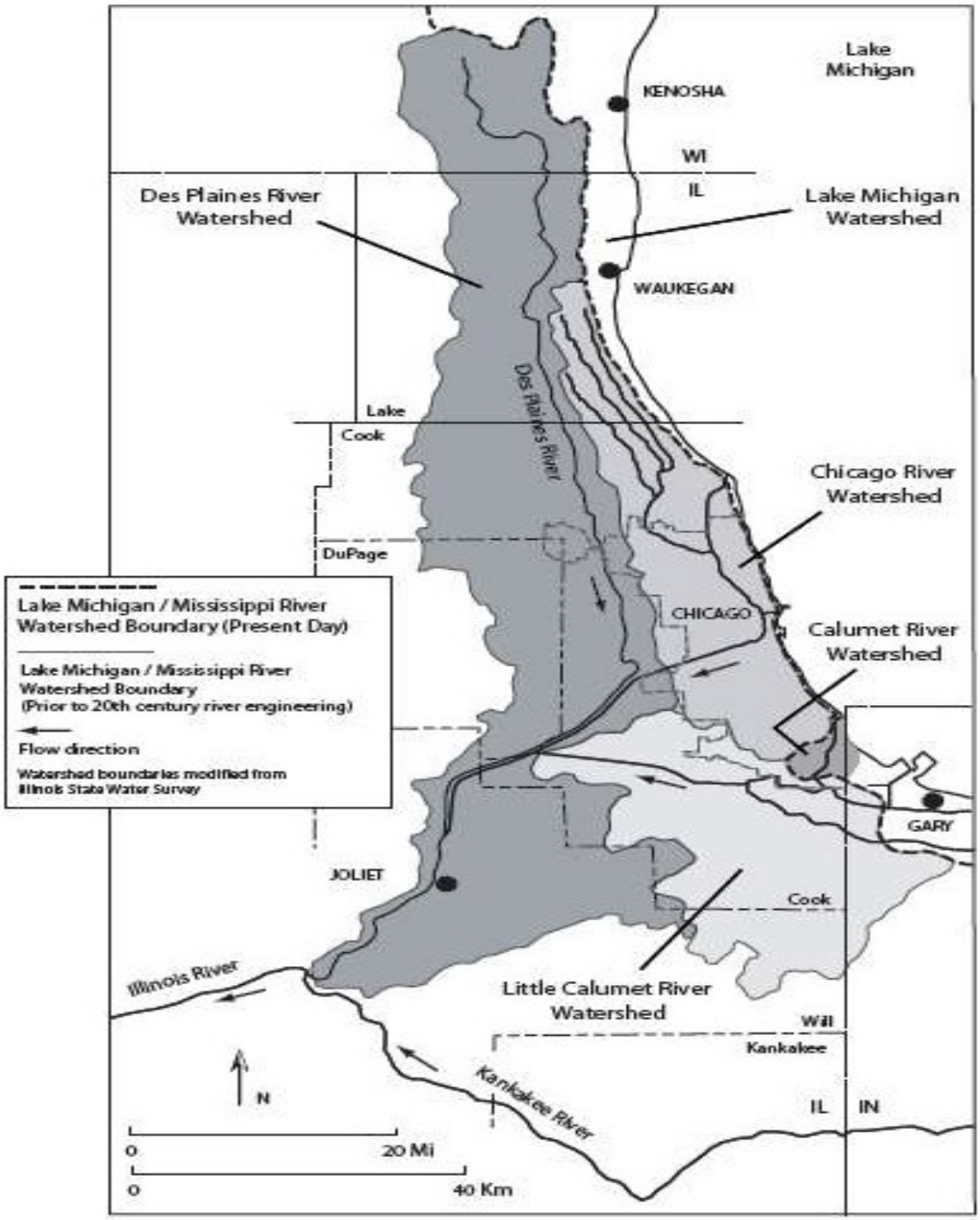
9.0 APPENDICES

APPENDIX A: FIGURES

Figure 1. Map of the Illinois Coastal Zone

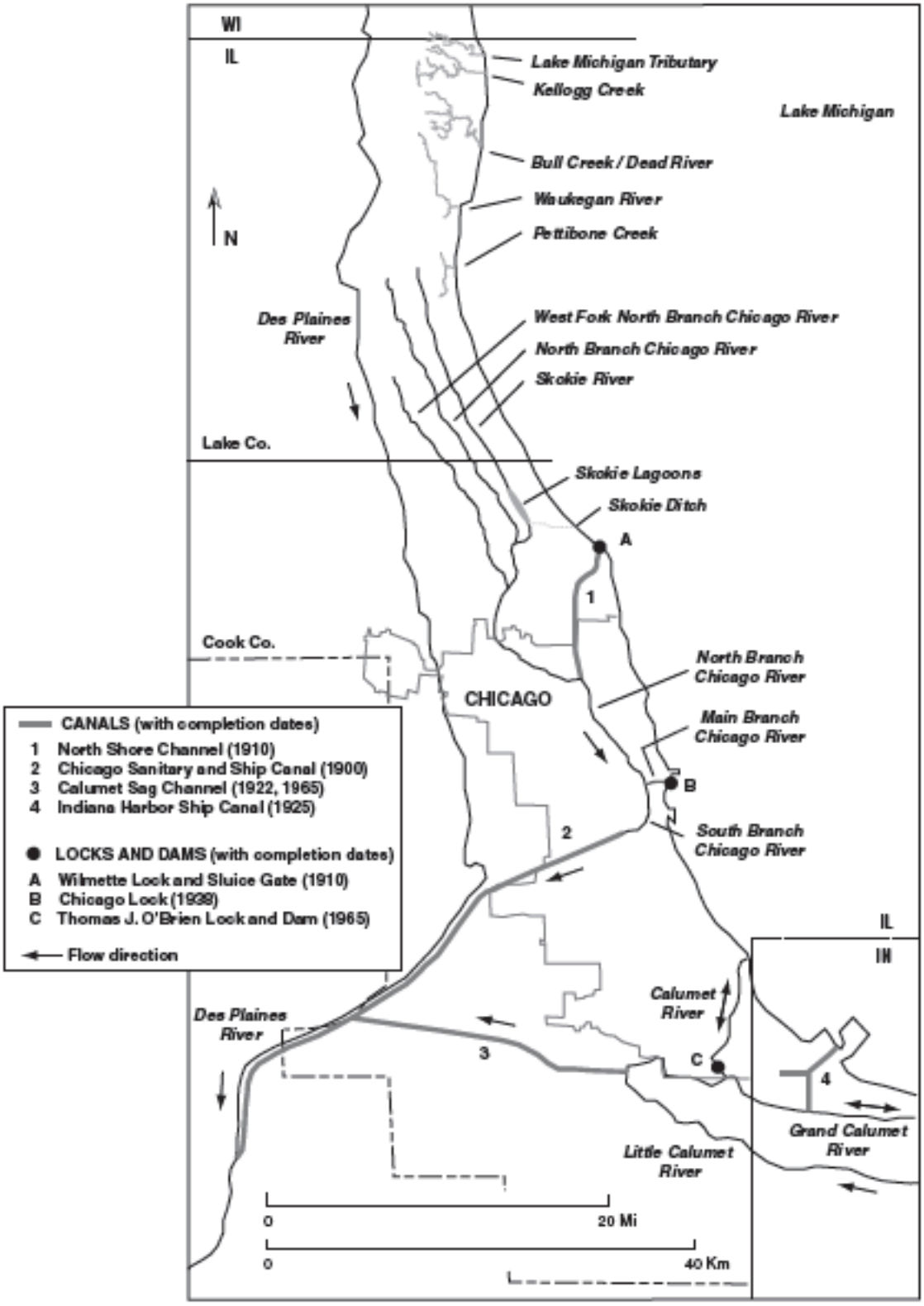
Source: http://www.dnr.illinois.gov/cmp/PublishingImages/CMP-Map-Final.jpg

Figure 2. Major Watersheds in the Illinois Coastal Zone



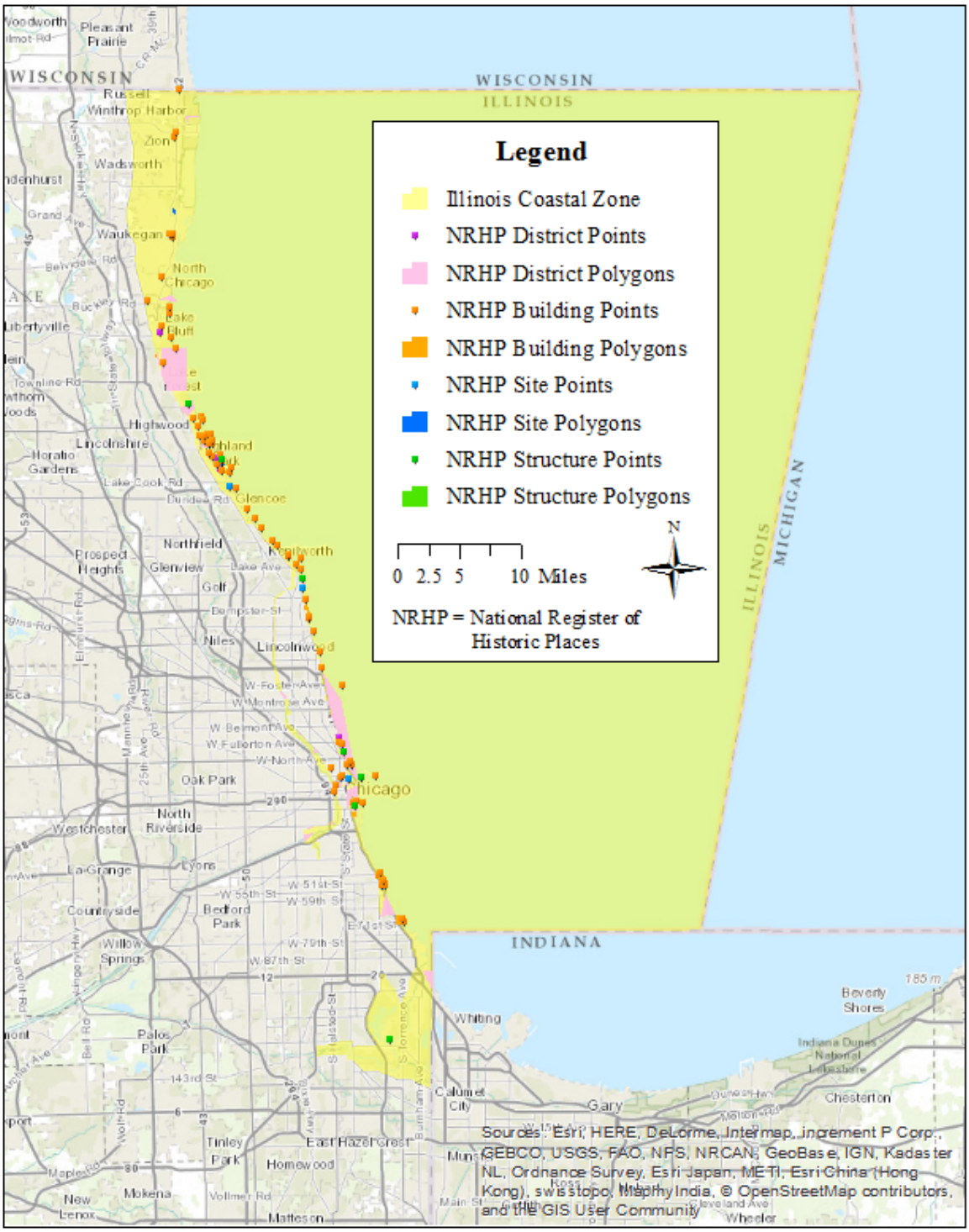
Source: NOAA and IDNR 2011

Figure 3. Major Water Bodies in the Chicago Area and Their Flow Directions



Source: NOAA and IDNR 2011

Figure 4. Properties on the National Register of Historic Places in Illinois' Coastal Zone



Source for NRHP geospatial data: Stutts 2014

APPENDIX B: MANAGEMENT MEASURES FOR SOURCES OF NONPOINT POLLUTION IN COASTAL WATERS

1. Management Measures for Agricultural Sources

1. ***Erosion and Sediment Control Management Measure***

Apply the erosion component of a Conservation Management System as defined in the Field Office Technical Guide of the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service to minimize the delivery of sediment from agricultural lands to surface waters, or

Design and install a combination of management and physical practices to settle the settleable solids and associated pollutants in runoff delivery from the contributing area for storms of up to and include a 10-year, 24-hour frequency.

2a. Management Measure for Facility Wastewater and Runoff from Confined Animal Facility Management (Large Units)

Limit the discharge from the confined animal facility to surface water by:

(1) Storing both the facility wastewater and the runoff from confined animal facilities that is caused by storms up to and including a 25-year, 24-hour frequency storm. Storage structures should:

(a) Have an earthen lining or plastic membrane lining, or

(b) Be constructed with concrete, or

(c) Be a storage tank; and

(2) Managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

This management measure is intended to be applied to all new facilities regardless of size and to all new or existing confined animal facilities that contain the following number of head or more:

	Head	Animal Units
Beef Feedlots	300	300
Stables (horses)	200	400
Dairies	70	98
Layers	15,000	150 [if the facility has a liquid manure system]
		495 [if the facility has continuous overflow watering]
Broilers	15,000	150 [if the facility has a liquid manure system]
		495 [if the facility has continuous overflow watering]
Turkeys	13,750	2,475
Swine	200	80

This measure does not apply to those facilities that are defined as concentrated animal feeding operations by Federal regulation 40 CFR 122 and are requires to obtain NPDES discharge permits. This regulation allows the Director of a NPDES discharge program to designate any animal feeding operation as a concentrated animal feeding operation (thus subjecting the operation to NPDES program requirements) upon determining that it is a significant contributor of pollution. If an NPDES permit is issued, the terms of the permit apply and this management measure is not required.

A confined animal facility is a lot or facility (other than an aquatic animal production facility where the following conditions are met:

- Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and

- Crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

2b. ***Management Measure for Facility Wastewater and Runoff from Confined Animal Facility Management (Small Units)***

Design and implement systems that collect solids, reduce containment concentrations, and reduce runoff to minimize the discharge of contaminants in both facility wastewater and in runoff that is caused by storms up to and including a 25-year, 24-hour frequency storm. Implement these systems to substantially reduce significant increases in pollutant loadings to ground water.

Manage stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

This management measure is intended to be applied to all existing confined animal facilities that contain the following number of head:

	Head	Animal Units
Beef Feedlots	50-299	50-299 lb
Stables (horses)	100-199	200-399
Dairies	20-69	28-97
Layers	5000-14,999	50-149[if the facility has a liquid manure system] 165-494[if the facility has continuous overflow watering]
Broilers	5,000-14,999	50-149[if the facility has a liquid manure system] 165-494[if the facility has continuous overflow watering]
Turkeys	5,000-13,749	900-2,474
Swine	100-199	40-79

This measure is subject to the same NPDES designation criteria mentioned for large unit animal facilities. Facilities containing few than the number of head listed above are not subject to this management measure. Existing facilities that meet the requirements of management measures for large units are in compliance with the requirements of this measure. Existing and new facilities that already minimize the discharge of contaminants to surface waters, protect against contamination of ground water, and have an appropriate waste utilization system may already meet the requirements of this measure. Such facilities may not need additional controls for the purposes of this measure.

3. ***Nutrient Management Measure***

Develop, implement, and periodically update a nutrient management plant to: (1) apply nutrients at rates necessary to achieve realistic crop yields; (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is other than commercial fertilizer, determine the nutrient value and the rate of availability of the nutrients. Determine and credit the nitrogen contribution of any legume crop. Soil and plant tissue testing should be used routinely.

Nutrient management plans contain the following core components:

(1) *Farm and field maps showing acreage, crops, soils, and waterbodies.*

(2) *Realistic yield expectations for the crop(s) to be grown, based primarily on the producer's actual yield history, State Land Grant University yield expectations for the soil series, or SCS Soils-5 information for the soil series.*

(3) *A summary of the nutrient resources available to the producer, which at a minimum include:*

- *Soil test results for pH, phosphorus, nitrogen, and potassium;*
- *Nutrient analysis of manure, sludge, mortality compost or effluent;*
- *Nitrogen contributions to the soil from legumes grown in the rotation;*
- *Other significant nutrient sources (e.g., irrigation water).*

(4) *An evaluation of field limitations based on environmental hazards or concerns, such as,*

- *Sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential,*
- *Lands near surface water,*
- *Highly erodable soils, and*
- *Shallow aquifers.*

(5) *Use of the limiting nutrient concept to establish the mix of nutrient sources and requirements for the crop based on a realist yield expectation.*

(6) *Identification of timing and application methods for nutrients to: provide nutrients at rates necessary to achieve realistic crop yields; reduce losses to the environment; and avoid applications as much as possible to frozen soil and during periods of leaching and runoff.*

(7) *Provisions for the proper calibration and operation of nutrient application equipment.*

4. <u>Pesticide Management Measure</u>

To reduce contamination of surface water and ground water from pesticides:

(1) *Evaluate the pest problems, previous pest control measures, and crop history;*

(2) *Evaluate the soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination;*

(3) *Use integrated pest management (IPM) strategies that:*

a. Apply pesticides only when an economic benefit to the producer will be achieved (i.e., applications based on economic thresholds); and

b. Apply pesticides efficiently and at times when runoff are unlikely.

(4) *When pesticide applications are necessary and a choice of registered materials exists, consider the persistence, toxicity, runoff potential, and leaching potential of products in making a selection;*

(5) *Periodically calibrate pesticide spray equipment; and*

(6) *Use anti-backflow devices on hoses used for filling tank mixtures.*

5. <u>Grazing Management Measures</u>

Protect range, pasture and other grazing lands:

(1) By implementing one or more of the following to protect sensitive areas (such as streambanks, wetlands, estuaries, ponds, lake shores, and riparian zones):

(a) *Exclude livestock;*

(b) *Provide stream crossing or hardened watering access for drinking;*

(c) *Provide alternative drinking water locations;*

(d) *Locate salt and additional shade, if needed, away from sensitive areas; or*

(e) *Use improved grazing management (e.g., herding) to reduce the physical disturbance and reduce direct loading of animal waste and sediment caused by livestock; and*

(2) By achieving either of the following on all range, pasture, and other grazing lands not addressed under 1:

(a) *Implement the range and pasture components of a Conservation Management System as defined in the Field Office Technical Guide of the USDA_SCS by applying the progressive planning approach of the USDA Soil Conservation Service (SCS) to reduce erosion, or*

(b) *Maintain range, pasture, and other grazing lands in accordance with activity plans established by either the Bureau of Land Management of the U.S. Department of the Interior or the Forest Service of the USDA.*

6. <u>Irrigation Water Management Measure</u>

To reduce nonpoint source pollution of surface waters caused by irrigation:

(1) Operate the irrigation system so that the timing and amount of irrigation water applied match crop water needs. This will require, as a minimum: (a) the accurate measurement of soil-water depletion volume and the volume of irrigation water applied, and (b) uniform application of water;

(2) When chemigation is used, include backflow preventers for wells, minimize the harmful amounts of chemigated waters that discharge from the edge of the field, and control deep percolation. In cases where chemigation is performed with furrow irrigation systems, a tailwater management system may be needed.

The following limitations and special consideration apply:

(1) *In some locations, irrigation return flows are subject to other water rights or are required to maintain stream flow. In these special cases, on-site reuse could be precluded and would not be considered part of the management measure for such locations.*

(2) *By increasing the water use efficiency, the discharge volume from the system will usually be reduced. While the total pollutant load may be reduced somewhat, there is the potential for an increase in the concentration of pollutants in the discharge. In these special cases, where living resources or human health may be adversely affected and where other management measures (nutrients and pesticides) do*

not reduce concentrations in the discharge, increasing water use efficiency would not be considered part of the management measure.

(3) *In some irrigation districts, the time interval between the order for and the delivery of irrigation water to the farm may limit the irrigator's ability to achieve the maximum on-farm application efficiencies that are otherwise possible.*

(4) *In some locations, leaching is necessary to control salt in the soil profile. Leaching for salt control should be limited to the leaching requirement for the root zone.*

(5) *Where leakage from delivery systems or return flows supports wetlands or wildlife refuges, it may be preferable to modify the system to achieve a high level of efficiency and then divert the "saved water" to the wetland or wildlife refuge. This will improve the quality of water delivered to wetlands or wildlife refuges by preventing the introduction of pollutants from irrigated lands to such diverted water.*

(6) *In some locations, sprinkler irrigation is used for frost or freeze protection, or for crop cooling. In these special cases, applications should be limited to the amount necessary for crop protection, and applied water should remain on site.*

2. Management Measures for Urban Areas

1. ***New Development Management Measure***

(1) By design or performance:

(a) After construction has been completed and the site is permanent stabilized, reduce the average annual total suspended solid (TSS) loadings by 80 percent. For the purposes of this measure, an 80 percent TSS reduction is to be determined on an average annual basis, or*

(b) Reduce the postdevelopment loadings of TSS so that the average annual TSS loadings are no greater than predevelopment loadings, and

(2) To the extent practicable, maintain postdevelopment peak runoff rate and average volume at levels that are similar to predevelopment levels.

Sound watershed management requires that both structural and nonstructural measures be employed to mitigate the adverse impacts of stormwater. Nonstructural Management Measures 11.B and 11.C can be effectively used in conjunction with Management Measure 11.A to reduce both the short-and-long term costs of meeting the treatment goals of this management measure.

**Based on the average annual TSS loadings from all storms less than or equal to the 2-year/24 hour storm. TSS loadings from storms greater than the 2-year/24 hour storm are not expected to be included in the calculation of the average annual TSS loadings.*

2. ***Watershed Protection Management Measure***

Develop a watershed protection program to:

(1) *Avoid conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss;*

(2) *Preserve areas that provide important water quality benefits and/or are necessary to maintain riparian and aquatic biota; and*

(3) *Site development, including roads, highways, and bridges, to protect to the extent practicable the natural integrity of waterbodies and natural drainage systems.*

4. ***Site Development Management Measure***

Plan, design, and develop sites to:

(1) Protect areas that provide important water quality benefits and/or are particularly susceptible to erosion and sediment loss;

(2) Limit increases of impervious areas, except where necessary;

(3) Limit land disturbance activities such as clearing and grading, and cut and fill to reduce erosion and sediment loss; and

(4) Limit disturbance of natural drainage features and vegetation.

4. ***Construction Site Erosion and Sediment Control Management Measure***

(1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction, and

(2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

5. ***Construction Site Chemical Control Management Measure***

(1) Limit application, generation, and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

6. ***Existing Development Management Measures***

Develop and implement watershed management programs to reduce runoff pollutant concentrations and volumes from existing development:

(1) Identify priority local and/or regional watershed pollutant reduction opportunities, e.g., improvements to existing urban runoff control structures;

(2) Contain a schedule for implementing appropriate controls;

(3) Limit destruction of natural conveyance systems; and

(4) Where appropriate, preserve, enhance, or establish buffers along surface waterbodies and their tributaries.

7. ***New Onsite Disposal Systems Management Measures***

(1) Ensure that new Onsite Disposal Systems are located, designed, installed, operated, inspected, and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into ground waters that are closely hydrologically connected to surface waters. Where necessary to meet these objectives (a) discourage the installation of garbage disposals to reduce hydraulic and nutrient loadings; and (b) where low-volume plumbing fixtures have not been installed in new development or redevelopments, reduce total hydraulic loadings to the OSDS by 25 percent. Implement OSDS inspection schedules for preconstruction, construction, and postconstruction.

(2) Direct placement of OSDS away from unsuitable areas. Where OSDS placement is unsuitable areas is not practicable, ensure that the OSDS designed or sited at a density so as not to adversely affect surface waters or ground water that is closely hydrologically connected to surface water. Unsuitable areas include, but are not limited to, areas with poorly or excessively drained soils; areas with shallow water table or areas with high seasonal water tables; areas overlaying fractured bedrock that drain directly to ground water; areas with floodplains; or areas where nutrient and/or pathogen concentrations in the effluent cannot be sufficiently treated or reduced before the effluent reaches sensitive waterbodies;

(3) Establish protective setbacks from surface waters, wetlands, and floodplains for conventional as well as alternative OSDS. The lateral setbacks should be based on soil type, slope, hydrologic factors, and type of OSDS. Where uniform protective setbacks cannot be achieved, site development with OSDS so as not to adversely affect waterbodies and/or contribute to a public heath nuisance.

(4) Establish protective separation distances between OSDS system components and groundwater which is closely hydrologically connected to surface waters. The separation distances should be based on soil type, distance to ground water, hydrologic factors, and type of OSDS;

(5) Where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from round water, require the installation of OSDS that reduce total nitrogen loadings by 50 percent to ground water that is closely hydrologically connected to surface water.

8. ***Operating Onsite Disposal Systems Management Measure***

(1) Establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge pollutants into ground waters that are closely hydrologically connected to surface waters. Where necessary to meet these objectives, encourage the reduced use of garbage disposals, encourage the use of low-volume plumbing fixtures, and reduce total phosphorus loadings to the OSDS by 15 percent (if the use of low-level phosphate detergents has not been required or widely adopted by OSDS users). Establish and implement policies that require an OSDS to be repaired, replaced, or modified where the OSDS fails, or threatens or impairs surface waters.

(2) Inspect OSDS at a frequency adequate to ascertain whether OSDS are failing:

(3) Consider replacing or upgrading OSDS to treat effluent so that total nitrogen loadings in the effluent are reduced by 50 percent. This provision applies only:

> *(a) where conditions indicate that nitrogen-limited surface waters may be adversely affected by significant ground water nitrogen loadings from OSDS;*
>
> *(b) where nitrogen loadings from OSDS are delivered to ground water that is closely hydrologically connected to surface water.*

9. ***Pollution Prevention Management Measure***

Implement pollution prevention and education programs to reduce nonpoint source pollutants generated from the following activities, where applicable:

◦ *The improper storage, use and disposal of household hazardous chemicals, including automobile fluids, pesticides, paints, solvents, etc.;*

◦ *Lawn and garden activities, including the application and disposal of lawn and garden care products, and the improper disposal of leaves and yard trimmings;*

◦ *Turf management on golf courses, parks, and recreational areas;*

◦ *Improper operation and maintenance of onsite disposal systems;*

◦ *Discharge of pollutants into storm drains including floatables, waste oil, and litter;*

◦ *Commercial activities including parking lots, gas stations, and other entities not under NPDES purview; and*

◦ *Improper disposal of pet excrement.*

10. ***Management Measure for Planning, Siting, and Developing Roads and Highways***

Plan, site, and develop roads and highways to:

(1) Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss; and

(2) Limit land disturbance such as clearing and grading and cut and fill to reduce erosion and sediment loss; and

(3) Limit disturbance of natural drainage features and vegetation.

11. ***Management Measure for Bridges***

Site, design, and maintain bridge structures so that sensitive and valuable aquatic ecosystems and areas providing important water quality benefits are protected from adverse effects.

12. ***Management Measure for Construction Projects***

(1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction; and

(2) Prior to land disturbance, prepare and implement an approved erosion control plan or similar administrative document that contains erosion and sediment control provisions.

13. ***Management Measure for Construction Site Chemical Control***

(1) Limit the application, generation, and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface water.

14. ***Management Measure for Operation and Maintenance***

Incorporate pollution prevention procedures into the operation and maintenance of roads, highways, and bridges to reduce pollutant loadings to surface waters.

15. ***Management Measure for Road, Highway and Bridge Runoff Systems***

Develop and implement runoff management systems for existing roads, highways, and bridges to reduce runoff pollutant concentrations and volumes entering surface waters.

(1) *Identify priority and watershed pollutant reduction opportunities (e.g., improvements to existing urban runoff control structures; and*

(2) *Establish schedules for implementing appropriate controls.*

3. Management Measures for Forestry

1. ***Preharvest Planning***

Perform advance planning for forest harvesting that includes the following elements where appropriate:

(1) *Identify the area to be harvested including location of waterbodies and sensitive areas such as wetlands, threatened or endangered aquatic species habitat areas, or high-erosion-hazard areas (landslide-prone areas) within the harvest unit.*

(2) *Time the activity for the season or moisture conditions when the least impact occurs.*

(3) *Consider potential water quality impacts and erosion and sedimentation control in the selection of silvicultural and regeneration systems, especially for harvesting and site preparation.*

(4) *Reduce the risk of occurrence of landslides and severe erosion by identifying high-erosion-hazard areas and avoiding harvesting in such areas to the extent practicable.*

(5) *Consider additional contributions from harvesting or roads to any known existing water quality impairments or problems in watersheds of concern.*

Perform advance planning for forest road systems that includes the following elements where appropriate:

(1) *Locate and design road systems to minimize, to the extent practicable, potential sediment generation and delivery to surface waters. Key components are:*

- *locate roads, landings, and skid trails to avoid to the extent practicable steep grades and steep hillslope areas, and to decrease the number of stream crossings;*
- *avoid to the extent practicable locating new roads and landings in Streamside Management Areas (SMAs); and*
- *determine road usage and select the appropriate road standard.*

(2) *Locate and design temporary and permanent stream crossings to prevent failure and control impacts from the road system. Key components are:*

- *size and site crossing structures to prevent failure;*

- *for fish-bearing streams, design crossings to facilitate fish passage.*

(3) *Ensure that the design of road prism and the road surface drainage are appropriate to the terrain and that road surface design is consistent with the road drainage structures.*

(4) *Use suitable materials to surface roads planned for all-weather use to support truck traffic.*

(5) *Design road systems to avoid high erosion or landslide hazard areas. Identify these areas and consult a qualified specialist for design of any roads that must be constructed through these areas.*

Each state should develop a process (or utilize an existing process) that ensures that the management measures in the chapter are implemented. Such a process should include appropriate notification, compliance audits, or other mechanisms for forestry activities with the potential for significant adverse nonpoint effects based on the type and size of operation and the presence of stream crossings or SMAs.

2. ***Streamside Management Areas (SMAs)***

Establish and maintain a streamside management area along surface waters, which is sufficiently wide and which includes a sufficient number of canopy species to buffer against detrimental changes in the temperature regime of the waterbody, to provide bank stability, and to withstand wind damage. Manage the SMA in such a way as to protect against soil disturbance in the SMA and delivery to the stream of sediments and nutrients generated by forestry activities, including harvesting. Manage the SMA canopy species to provide a sustainable source of large woody debris needed for instream channel structure and aquatic species habitat.

3. ***Road Construction/Reconstruction***

(1) *Follow preharvest planning (as described under Management Measure 1) when constructing or reconstructing the roadway.*

(2) *Follow designs planned under Management Measure 1 for road surfacing and shaping.*

(3) *Install road drainage structures according to designs planned under Management Measure 1and regional storm return period and installation specifications. Match these drainage structures with terrain features and with road surface and prism designs.*

(4) *Guard against the production of sediment when installing stream crossings.*

(5) *Protect surface waters from slash and debris material from roadway clearing.*

(6) *Use straw bales, silt fences, mulching, or other favorable practices on disturbed soils on unstable cuts, fills, etc.*

(7) *Avoid constructing new roads in SMAs to the extent practicable.*

4. ***Road Management***

(1) *Avoid using roads where possible for timber hauling or heavy traffic during wet or thaw periods on roads not designed and constructed for these conditions.*

(2) *Evaluate the future need for a road and close roads that will not be needed. Leave closed roads and drainage channels in a stable condition to withstand storms.*

(3) *Remove drainage crossings and culverts if there is a reasonable risk of plugging or failure from lack of maintenance.*

(4) *Following completion of harvesting, close and stabilize temporary spur roads and seasonal roads to control and direct water away from the roadway. Remove all temporary stream crossings.*

(5) *Inspect roads to determine the need for structural maintenance. Conduct maintenance practices, when conditions warrant, including cleaning and replacement of deteriorated structures and erosion controls, grading or seeding of road surfaces, and, in extreme cases, slope stabilization or removal of road fills where necessary to maintain structural integrity.*

(6) *Conduct maintenance activities, such as dust abatement, so that chemical contaminants or pollutants are not introduced into surface waters to the extent practicable.*

(7) *Properly maintain permanent stream crossings and associated fills and approaches to reduce the likelihood (a) that stream overflow with divert onto roads, and (b) that fill erosion will occur if the drainage structures become obstructed.*

5. ***Timber Harvesting***

The timber harvesting management measure consists of implementing the following:

(1) *Timber harvesting operations with skid trails or cable yarding follow layouts determined under Management Measure 1.*

(2) *Install landing drainage structures to avoid sedimentation to the extent practicable. Disperse landing drainage over sideslopes.*

(3) *Construct landings away from steep slopes and reduce the likelihood of fill slope failures. Protect landing surfaces used during wet period. Locate landings outside of SMAs.*

(4) *Protect stream channels and significant ephemeral drainages from logging debris and slash material.*

(5) *Use appropriate areas for petroleum storage, draining, dispensing. Establish procedures to contain and treat spills. Recycle or properly dispose of all waste materials.*

For cable yarding:

(1) *Limit yarding corridor gouge or soil plowing by properly locating cable yarding landings.*

(2) *Locate corridors for SMAs following Management Measure 2.*

For groundskidding:

(1) *Within SMAs, operate groundskidding equipment only at stream crossings to the extent practicable. In SMAs, fell and endline trees to avoid sedimentation.*

(2) *Use improved stream crossings for skid trails which cross flowing drainages. Construct skid trails to disperse runoff and with adequate drainage structures.*

(3) *On steep slopes, use cable systems rather than groundskidding where groundskidding may cause excessive sedimentation.*

6. ***Site Preparation and Forest Regeneration***

Confine on-site potential NPS pollution and erosion resulting from site preparation and the regeneration of forest stands. The components of the management measure for site preparation and regeneration are:

(1) *Select a method of site preparation and regeneration suitable for the site conditions.*

(2) *Conduct mechanical tree planting and ground-disturbing site preparation activities on the contour of sloping terrain.*

(3) *Do not conduct mechanical site preparation and mechanical tree planting in streamside management areas.*

(4) *Protect surface waters from logging debris and slash material.*

(5) *Suspend operations during wet periods if equipment used begins to cause excessive soil disturbance that will increase erosion.*

(6) *Locate windrows at a safe distance from drainages and SMAs to control movement of the material during high runoff conditions.*

(7) *Conduct bedding operations in high-water-table areas during dry periods of the year. Conduct bedding in sloping areas on the contour.*

(8) *Protect small ephemeral drainages when conducting mechanical tree planting.*

7. ***Fire Management***

Prescribe fire for site preparation and control or suppress wildfire in a manner which reduces potential nonpoint source pollution of surface waters:

(1) *Intense prescribed fire should not cause excessive sedimentation due to the combined effect of removal of canopy species and the loss of soil-binding ability of subcanopy and herbaceous vegetation roots, especially in SMAs, in streamside vegetation for small ephemeral drainages, or on very steep slopes.*

(2) *Prescriptions for prescribed fire and wildfire, should protect against excessive erosion or sedimentation to the extent practicable.*

(3) *All bladed firelines, for prescribed fire and wildfire, should be plowed on contour or stabilized with water bars and/or other appropriate techniques if needed to control excessive sedimentation or erosion of the fireline.*

(4) *Wildfire suppression and rehabilitation should consider possible NPS pollution of watercourses, while recognizing the safety and operational priorities of fighting wildfires.*

8. ***Revegetation of Disturbed Areas***

Reduce erosion and sedimentation by rapid vegetation of areas disturbed by harvesting operation or road construction.

(1) *Revegetate disturbed areas (using seeding or planting) promptly after completion of the earth-disturbing activity. Local growing conditions will dictate the timing for establishment of vegetative cover.*

(2) *Uses mixes of species and treatments developed and tailored for successful vegetation establishment for the region or area.*

(3) *Concentrate revegetation efforts initially on priority areas such as disturbed areas in SMAs or the steepest areas of disturbance near drainages.*

9. ***Forest Chemical Management***

Use chemical when necessary for forest management in accordance with the following to reduce nonpoint source pollution impacts due to the movement of forest chemicals off-site during and after application:

(1) *Conduct applications by skilled, and, where required, licensed applicators according to the registered use, with special consideration given to impacts to nearby surface waters.*

(2) *Carefully prescribe the type and amount of pesticides appropriate for the insect, fungus, or herbaceous species.*

(3) *Prior to applications of pesticides and fertilizers, inspect the mixing and loading process and the calibration of equipment, and identify the appropriate weather conditions the spray area, and buffer areas for surface waters.*

(4) *Establish and identify buffer areas for surface waters. (This is especially important for area applications.)*

(5) *Immediately report accidental spills of pesticides or fertilizers into surface waters to the appropriate State agency. Develop an effective spill contingency plan to contain spills.*

10. ***Wetlands Forest***

Plan, operate, and manage normal, ongoing forestry activities (including harvesting, road design and construction, site preparation and regeneration, and chemical management) to adequately protect the aquatic functions of forested wetlands.

4. Management Measures for Marinas and Recreational Boating

Siting and Design

1. ***Marina Flushing Management Measure***

Site and design marinas such that tides and/or currents will aid in flushing of the site or renew its water regularly.

2. ***Water Quality Assessment Management Measure***

Assess water quality as part of marina siting and design.

3. ***Habitat Assessment Management Measure***

Site and design marinas to protect against adverse effects on shellfish resources, wetlands, submerged aquatic vegetation, or other important riparian and aquatic habitat areas as designated by local, State or Federal governments.

4. *Shoreline Stabilization Management Measures*

Where shoreline erosion is a nonpoint source pollution problem, shorelines should be stabilized. Vegetated methods are strongly preferred unless structural methods are more cost effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other shorelines and offshore areas.

5. *Stormwater Runoff Management Measure*

Implement effective runoff control strategies which include the use of pollution prevent activities and the proper design of hull maintenance areas. Reduce the average annual loadings of total suspended solids (TSS) in runoff from hull maintenance areas by 80 percent. For the purposes of this measure, an 80 percent reduction of TSS is to be determined on an average annual basis.

6. *Fueling Station Design Management Measure*

Design fueling stations to allow for ease in cleanup of spills.

7. *Sewage Facility Management Measure*

Install pumpout, dump station, and restroom facilities where needed at new and expanding marinas to reduce the release of sewage to surface waters. Design these facilities to allow ease of access and post signage to promote use by the boating public.

Operation and Maintenance

1. *Solid Waste Management Measure*

Properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats to limit entry of solid wastes to surface waters.

2. *Fish Waste Management Measure*

Promote sound fish waste management through a combination of fish-cleaning restrictions, public education, and proper disposal of fish waste.

3. *Liquid Material Management Measure*

Provide and maintain appropriate storage, transfer, containment, and disposal facilities for liquid material, such as oil, harmful solvents, antifreeze, and paints, and encourage recycling of these materials.

4. *Petroleum Control Management Measure*

Reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering marina and surface waters.

5. *Boat Cleaning Management Measure*

For boats that are in the water, perform cleaning operations to minimize, to the extent practicable, the release to surface waters of (1) harmful cleaners and solvents; and (b) paint from in-water hull cleaning.

6. ***Public Education Management Measure***

Public education/outreach/training programs should be instituted for boaters, as well as marina owners and operators, to prevent improper disposal of polluting material.

7. ***Maintenance of Sewage Facilities Management Measure***

Ensure that sewage pumpout facilities are maintained in operational condition and encourage their use.

8. ***Boat Operation Management Measure (applies to boating only)***

Restrict boating activities where necessary to decrease turbidity and physical destruction of shallow-water habitat.

5. Management Measures for Hydromodification

Channelization and Channel Modification

1. ***Management Measure for Physical and Chemical Characteristics of Surface Waters***

(1) *Evaluate the potential effects of proposed channelization and channel modification on the physical and chemical characteristics of surface waters in coastal areas:*

(2) *Plan and design channelization and channel modification to reduce undesirable impacts;; and*

(3) *Develop an operation and maintenance program for existing modified channels that includes identification and implementation of opportunities to improve physical and chemical characteristics of surface waters in those channels.*

2. ***Instream and Riparian Habitat Restoration Management Measure***

(1) *Evaluate the potential effects of proposed channelization and channel modification on instream and riparian habitat in coastal areas;*

(2) *Plan and design channelization and channel modification to reduce undesirable impacts; and*

(3) *Develop an operation and maintenance program with specific timetables for existing modified channels that includes identification of opportunities to restore instream and riparian habitat in those channels.*

Dams

1. ***Management Measure for Erosion and Sediment Control***

(1) *Reduce erosion, and, to the extent practicable, retain sediment onsite during and after construction, and*

(2) *Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment controls provisions.*

2. ***Management Measure for Chemical and Pollutant Control***

(1) *Limit application, generation, and migration of toxic substances;*

(2) *Ensure the proper storage and disposal of toxic materials; and,*

(3) *Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.*

3. ***Management Measure for Protection of Surface Water Quality and Instream and Riparian Habitat***

Develop and implement a program to manage the operation of dams in coastal areas that includes an assessment of:

(1) *Surface water quality and instream and riparian habitat and potential for improvement and*

(2) *Significant nonpoint source pollution problems that result from excessive surface water withdrawal.*

Streambank and Shoreline Erosion

1. ***Management Measure for Eroding Streambanks and Shorelines***

(1) *Where streambank or shoreline erosion is a nonpoint source pollution problem, streambanks and shorelines should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost-effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other streambanks, shorelines, and offshore areas.*

(2) *Protect streambank and shoreline features with the potential to reduce NPS pollution.*

(3) *Protect streambanks and shorelines from erosion due to uses of either the shorelands or adjacent surface waters.*

6. Management Measures for Wetlands, Riparian Areas and Vegetated Treatment Systems

1. ***Management Measure for Protection of Wetlands and Riparian Areas***

Protect from adverse effects wetlands and riparian areas that are serving a significant NPS abatement function and maintain this function while protecting the other existing functions of these wetlands and riparian areas as measured by characteristics such as vegetative composition and cover, hydrology of surface water and ground water, geochemistry of the substrate, and species composition.

2. ***Management Measure for Restoration of Wetland and Riparian Areas***

Promote the restoration of the preexisting functions in damaged and destroyed wetlands and riparian systems in areas where the systems will serve a significant NPS pollution abatement function.

3. ***Management Measure for Vegetated Treatment Systems***

Promote the use of engineered vegetative treatment systems such as constructed wetlands or vegetated filter strips where these systems will serve a significant NPS pollution abatement function.

Source: EPA 1993

APPENDIX C: LETTER TO USFWS CONCERNING ESA COMPLIANCE

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office for Coastal Management
Silver Spring Metro Center, Building 4
1305 East-West Highway
Silver Spring, Maryland 20910

MAR 30 2015

Kristopher Lah
Chicago Field Office
U.S. Fish & Wildlife Service
1250 S. Grove, Suite 103
Barrington, IL 60010

Dear Mr. Lah:

Under Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA), the National Oceanic and Atmospheric Administration's (NOAA) Office for Coastal Management (OCM), in conjunction with the U.S. Environmental Protection Agency (EPA), will soon publish our intent to conditionally approve Illinois' Coastal Nonpoint Pollution Control Program (Coastal Nonpoint Program) in the Federal Register. CZARA Section 6217 requires all coastal states participating in the voluntary National Coastal Zone Management Program to develop and implement Coastal Nonpoint Programs. OCM and EPA's action is to review the information Illinois provided describing how it has satisfied the requirements of the National Coastal Nonpoint Program. Specifically, OCM and EPA must determine if the state has developed programs, backed by enforceable policies, to satisfy a set of management measures, described in EPA's 1993 *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Water,* to address polluted runoff within the state's designated Coastal Nonpoint Program boundary. (See Sec. 6217(c).)

While EPA's 1993 guidance document lays out baseline standards for addressing nonpoint source pollution, decisions about the specific land use practices used to meet the measures are left entirely to the discretion of state or, sometimes, local governments. Section 6217 does not provide OCM or EPA with authority to require states or local governments to take specific actions to address coastal nonpoint source pollution. Nor do the agencies have the authority to take over Illinois' Coastal Nonpoint Program if the state fails to act.

States implement their approved Coastal Nonpoint Programs through existing, voluntary state coastal zone management programs developed under Section 306 of the Coastal Zone Management Act (CZMA) and state nonpoint source programs developed under Section 319 of the Clean Water Act (CWA). (See Sec. 6217(c)(2).) Projects funded under the CZMA and Section 319 of the CWA are evaluated individually for compliance with the Endangered Species Act. The programs and authorities Illinois submitted in support of its Coastal Nonpoint Program will continue to exist and be implemented at the state and local levels, regardless of OCM and EPA's decision regarding approval of Illinois' Coastal Nonpoint Program.

OCM and EPA's proposed conditional approval of the Illinois Coastal Nonpoint Program acknowledges that the state has met most of the requirements of the program and provides the state with additional time (up to 5 years) to make changes to its program to address gaps in its management program identified by OCM and EPA and demonstrate that existing authorities are adequate for ensuring implementation of management measures. Although Congress has not appropriated funding for the Coastal Nonpoint Program since FY 2009 and future appropriations are unlikely, conditional approval does make the state eligible to receive program funding if and when it is appropriated. If Coastal Nonpoint Program funding is appropriated in the future, OCM has processes in place to evaluate each individual project for ESA compliance and consult with the Services, as necessary. At this time, we cannot predict how Illinois would use those funds if they are appropriated in the future, and what effect, if any, the funding would have on endangered species and/or critical habitat. Simply being eligible to receive funds has no effect on listed species or critical habitat.

There are species listed and critical habitat designated in areas within Illinois' Coastal Nonpoint Program boundary, which is the same as its Coastal Management Program boundary (described at http://www.dnr.illinois.gov/cmp/Pages/boundaries.aspx). Nevertheless, OCM and EPA have determined that our proposed action to conditionally approve Illinois' Coastal Nonpoint Program will have no effect on listed species or designated critical habitat. This is true regardless of the impact state or local land use decisions might have, because OCM and EPA's action does not in any way control state or local decision-making. What results from OCM and EPA's action does not have any impact on listed species or designated critical habitat since the state implements its Coastal Nonpoint Program through existing state and local programs that will continue to exist with or without Coastal Nonpoint Program approval or conditional approval.

If you have any questions regarding this letter or disagree with the conclusion that Section 7 consultation is not necessary for conditional approval (and, potentially, subsequent full approval) of Illinois' Coastal Nonpoint Program, please contact me at 301-563-1127 or patmarie.nedelka@noaa.gov by May 1, 2015.

Sincerely,

Patmarie Nedelka

Patmarie Nedelka
NEPA and Environmental Compliance Coordinator

cc: Tom Davenport, EPA R5
Don Waye, EPA HQ