

Appendix G.
Prior Studies, Reports, and Existing Water Projects
Other Federal and State Agencies

Prior Studies, Reports and Existing Water Projects Other Federal and State Agencies

The following discussion is largely excerpted from the recent U.S. General Accounting Office (GAO) report: “An Overall Strategy and Indicators for Measuring Progress Are Needed to Better Achieve Restoration Goals”.

The GAO report identified 148 federal and 51 state programs supporting Great Lakes restoration activities, including the programs of the Corps of Engineers. They include programs that focus specifically on the Great Lakes basin as well as localized applications of national or state initiatives. The majority of the identified programs support activities relating to cleanup of contaminated areas, habitat restoration, pollution prevention, and environmental research.

The GAO reported that Great Lakes restoration activities employ a variety of strategies at the binational, federal, and state level. However, there is no overarching plan for coordinating and tying them together into a coherent approach. It is also recognized that a comprehensive assessment of restoration progress is needed. The biennial State of the Lakes Ecosystem Conference (SOLEC) has worked to develop a set of indicators for Great Lakes restoration. This effort relies on the voluntary contributions of several organizations and its success is thus far uncertain. A monitoring system has not yet been established and no completion date for developing a list of indicators has been set.

Thirty-three federal programs focus specifically on the Great Lakes basin and account for \$387 million in federal spending in fiscal years 1992 through 2001. Sixty-four percent, or \$248.9 million, was for U.S. EPA programs; 17 percent, or \$67.2 million, was for NOAA programs; and 9 percent, or \$33.4 million, was for Fish and Wildlife Service (FWS) programs. The Great Lakes states provided \$956 million for Great Lakes-specific programs, with Michigan’s programs accounting for 96 percent of this amount. In general, these programs focus on a range of activities meeting specific state needs (see Table 5.2). An example is the Clean Michigan Initiative, which provides bond funding for brownfields and greenspace preservation across Michigan. However, most of the programs identified by the GAO do not specifically focus on basin concerns but are localized applications of programs operating within as well as outside the basin. U.S. EPA is the federal agency administering the majority of programs. While these programs substantially contribute to Great Lakes restoration and management, the portion of funding going to the basin cannot be tracked in many cases.

Tables 5.2 through 5.5, summarize water resources programs in the Great Lakes basin. Table 5.2 lists water resources programs that give federal agencies action capabilities in the Great Lakes (i.e., programs that enable the agency to deliver management and technical services, conduct research and monitoring, or carry out certain types of restoration projects). This includes specific Great Lakes programs (e.g., U.S. EPA’s Great Lakes Program) as well as nationwide programs (for example, the National Fish Passage Program of FWS). Tables 5.3 and 5.4 summarize federal and state programs that provide grants and funding opportunities for Great Lakes restoration projects. Examples are the Great Lakes Basin Program for Soil Erosion and Sediment Control (NRCS), Clean Water State Revolving Fund (U.S. EPA) and the Great Lakes Protection Fund (GLPF) of the states. Finally, Table 5.5 describes foundation programs that focus on Great Lakes needs.

1. Federal Water Resources Programs with Action Capability

Under authorities of the CWA and other legislation, the U.S. EPA often leads on federal programs addressing water quality and related watershed issues in the basin. U.S. EPA’s Great Lakes Program serves to meet U.S. responsibilities under GLWQA. This executive agreement outlines U.S. and Canadian

obligations to restore and protect the chemical, physical, and biological integrity of the Great Lakes basin ecosystem. To support these goals, the Great Lakes Program oversees and coordinates a range of integrated program activities, including the development and monitoring of Great Lakes ecosystem indicators (Monitoring Program, SOLEC) and support of LaMPs and RAPs with water quality management planning and funding coordination. The Water Quality Standards and TMDL programs work with states and tribes to establish water quality criteria and ensure that they are met. U.S. EPA also undertakes research on the relationship between landuse, watershed management, and water quality through its Aquatic Stressors Research Program, with a focus on Lake Superior watersheds.

Other federal agencies with major water quality programs in the basin are the U.S. Geological Survey (USGS) and Natural Resources Conservation Service (NRCS). As part of its National Water Quality Assessment Program (NAWQA), USGS monitors water quality in streams and groundwater of the Lake Erie-St. Clair drainage and in watersheds on western Lake Michigan. The USGS Ground Water Resources Program also provides quantitative information on priority water management issues, including support for aquifer management decisions, natural groundwater recharge, and groundwater and surface water interaction. NRCS offers Conservation Technical Assistance to land users, communities, units of state and local governments, and other federal agencies seeking advice on how to improve water quality through conservation measures in the watershed.

The U.S. Fish and Wildlife Service (FWS) has several national programs supporting aquatic nuisance species (ANS) control and habitat restoration in the basin. Through the Fish and Wildlife Management Assistance program, eligible entities in the basin have access to FWS biologists who develop fishery management plans, coordinate fishery restoration activities, and evaluate the results of management actions.

Program responsibilities include: (1) fish conservation in cooperation with state, tribal, federal, and private interests; (2) Native American tribal assistance; (3) interjurisdictional fisheries assistance (for example, surveillance of interjurisdictional fish populations and technical support and coordination services for the Great Lakes Fishery Commission); (4) the National Fish Passage Program; and (5) invasive species control. The National Fish Passage Program has been used since 1999 to restore flow regimes and fish migration in streams by dam removal or bypassing. Nine dam removal projects have been completed in the basin at a total cost of \$268,500. In FY 2003, work has begun on five additional projects. In addition, the FWS manages two ANS programs with relevance to the Great Lakes: (1) ANS Surveillance and Control supports exotic fish surveys across the basin, with a particular focus on the Eurasian ruffe; and (2) the New York State Canal System ANS program supports workshops and meetings as a means to educate and inform the public about ANS issues related to the New York State Canal System. Workshops target issues such as state ANS plan development.

Several federal agencies are involved in the assessment and remediation of contaminated sites. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as Superfund, provides broad authority to U.S. EPA to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Since 1980, over 130 contaminated sites within the basin have been entered on the National Priorities List (NPL) of the Superfund program and are subject to CERCLA-financed remedial actions. There are currently 105 active NPL sites in the basin. Remedial engineering has been completed at 33 sites (24 percent) in the basin. Twenty-one of these sites have been deleted from the NPL and the remainder are undergoing long-term remediation.

CERCLA also directs U.S. EPA to coordinate the assessment and remediation of affected natural resources with designated trustees. Trustees of Great Lakes resources include the Department of the Interior (DOI) as well as states and tribes. The DOI Restoration Program Management Office coordinates the Damage Assessment and Restoration Program with FWS or other concerned DOI bureaus. The designated DOI bureau assesses the damages and injuries to natural resources and negotiates legal settlements or takes other legal action against the parties responsible for the spill or release. Funds from these settlements are then used to recover costs incurred in assessing the damages, to restore the injured resources, and to fund further damage assessments at no expense to the taxpayer. The FWS has or is currently conducting Natural Resource Damage Assessments for several dozen sites in the Great Lakes basin.

The Federal Emergency Management Agency (FEMA) leads and coordinates federal flood mitigation programs within the Great Lakes basin. The Water and Wind Technical Assistance Program provides technical support to flood mitigation initiatives of states and local communities. Other flood mitigation programs of FEMA provide both technical and financial assistance to eligible entities.

Table 5.1
Federal water resources programs with action capability in the Great Lakes basin.

Program Name	Purpose	Program expenditures (1992–2001)^a
U.S. Department of Agriculture – Natural Resources Conservation Service		
Conservation Technical Assistance	Provides technical assistance to land users, communities, units of state and local governments, and other federal agencies programs in planning and implementing conservation systems. In the Great Lakes basin, water quality issues such as erosion are a program priority.	^b
U.S. Department of Homeland Security – Federal Emergency Management Agency		
Wind and Water Technical Assistance Program	This program provides ad hoc short-term technical assistance to states that participate in FEMA Flood Programs. This assistance is provided at no cost to the requesting state or local community. Examples of projects that can be executed under WAWTAP are flood mitigation planning assistance, technical guidance in developing flood retrofit measures, study and analysis of storm phenomena, and training associated with flood mitigation.	^b
U.S. Department of Interior – Fish and Wildlife Service		
Aquatic Nuisance Species Surveillance and Control	This program was started in 1991 to prevent and control infestations in the coastal and inland waters of the U.S. by nonindigenous invasive species. Its activities include research, prevention and control of ANS, and mitigation of impacts to native fish and wildlife resources.	\$3,659,400
Fish and Wildlife Management Assistance – Great Lakes Operations	This program aids in conservation of native fish and wildlife species and their habitats. It provides support for the management of interjurisdictional fisheries, aids in restoration of depleted fish populations, and provides technical assistance to states and tribal fish and wildlife management agencies to fulfill federal trust responsibilities.	\$5,915,000
National Fish Passage Program	Typically, the program is used to remove barriers to fish movement (i.e. dams) or to provide ways for aquatic species to bypass them. The program works with federal, state, local, and tribal agencies, as well as private partners and stakeholders.	\$268,500
National Resource Damage Assessment Program	Provides for the assessment of damage to FWS trust resources from oil spills/and or other hazardous substance releases, so that the restoration or replacement of these injured resources are paid for by the responsible parties.	\$2,496,000
New York State Canal System Aquatic Nuisance Species Program	This 1998 program includes various components to address aquatic invasive species issues within the Canal system. It seeks to work with partner agencies to detect, monitor, and manage populations of invasive species inhabiting or transiting the Canal and implement prevention strategies as appropriate.	\$221,342
U.S. Department of Interior – Restoration Program Management Office		
Damage Assessment and Restoration Program	The purpose of this program is to restore injuries from oil spills and hazardous material discharges to the Department of Interior's trust resources by assessing damages and settling with responsible parties.	^b
U.S. Department of Interior – U.S. Geological Survey		
National Water Quality Assessment (NAWQA) Program	The NAWQA program assesses status and trends in water quality of streams, groundwater, and related aquatic ecosystems as well as the factors affecting it.	\$16,039,000
National Water Use Information Program	This program was created in 1979 to collect, store, analyze, and disseminate water use information, both nationally and locally, to a wide variety of government agencies and private organizations. It is a cooperative program that includes state and local government entities.	^b

USGS Ground-Water Resources Program	Encompasses regional studies of groundwater systems; provides access to groundwater data, and research and methods development	\$60,000
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U.S. Environmental Protection Agency (Table 5.1 continued)		
Aquatic Stressors Research Program	The goals of this research program include identifying impaired watersheds; diagnosing causes of degradation; and developing risk-based assessments for supporting restoration and remediation decisions.	^b
Environmental Protection - Consolidated Research	The goals of these research programs include (1) support research to determine the environmental effects of air, drinking water, water quality, hazardous waste, toxic substances and pesticides; (2) identify, develop, and demonstrate necessary and effective pollution control techniques; and (3) support research to explore and develop strategies and mechanisms to use in environmental management decisions.	^b
Great Lakes Program	The goal of this program is to restore and maintain the chemical, physical, and biological integrity of the Great Lakes basin ecosystem.	^b
Monitoring Program/State of the Lakes Ecosystem Conference	The purpose of this research program is to assess the ecosystem health of the Great Lakes; information is gather and provided to measure whole lake response to control measures using trend analysis and cause/effect relationships	^b
Public Water Supply Program	The purpose of this program is to ensure that clean and safe drinking water is provided to the public.	^b
Superfund	The goal of this program is to protect human health and the environment from risks associated with hazardous waste sites and to respond to hazardous substance spill emergencies. The primary focus of the program is the assessment and remediation of long-term cleanups.	\$749,149,250 ^c
Total Maximum Daily Load Program	The purpose of this program is to identify waters not meeting state water quality standards, and for those waters, calculate the maximum amount of a pollutant the water can receive and still meet water quality standards.	^b
Water Quality Standards Program	Supports efforts to restore and maintain the chemical, physical, and biological integrity of the nation's waters by defining the uses to be protected and the water quality conditions needed to protect these uses.	^b

^aUnless otherwise noted, the funding figures in this column represent federal fiscal year expenditures.

^bNot known for this program.

^cFunding amount for Regions 3 and 5.

2. Federal water resources programs with funding and granting capabilities

U.S. EPA: A suite of U.S. EPA granting programs is available to fund CWA-related activities in the basin. The Great Lakes National Program Office (GLNPO) awards competitive CWA Section 104(b)(3) grants to projects addressing Great Lakes priorities, such as contaminated sediments, nonpoint pollution, habitat and wetlands restoration, and invasive species. The program funds a wide variety of activities but does not fund construction projects, such as the building or removal of infrastructure. Eligible recipients include federal agencies, state water pollution control agencies, interstate agencies, municipalities, Indian tribes, and nonprofit institutions. Other CWA-based programs make grants to states and tribes to develop and maintain water quality monitoring programs (Section 106 Grants) or to implement watershed-based water quality management plans as well as LaMPs and RAP-related activities (Section 319 Grants).

The Clean Water State Revolving Fund (SRF) provides capitalization grants to states for low-cost financing of a wide range of public water quality infrastructure such as wastewater treatment facilities and other nonpoint source pollution control projects (for example, the Minnesota Pollution Control Agency's Clean Water Partnership). Similarly, states can obtain capitalization grants through the Drinking Water State Revolving Fund to support activities related to the Safe Drinking Water Act (SDWA). These include low-cost loans to public water systems for infrastructure projects or funding of source water protection measures.

The Clean Water Indian Set-Aside Grant Program, under Section 518(c) of CWA, provides grants for the planning, design, and construction of tribal wastewater treatment facilities. U.S. EPA also provides funding for various initiatives at the community level: Brownfields Assessment, Revolving Loan Fund, and Cleanup Grants; Superfund Technical Assistance Grants for Citizen Groups at Priority Sites; and, the Five-Star Restoration Program for streambank and wetlands restoration.

FWS: FWS endorses the use of Challenge Costshare (CCS) Grants to encourage partnerships for funding projects. CCS Grants require a 50 percent cost share (services or labor can qualify) and may typically be used in three different ways: 1) landowners restore the land and are reimbursed directly for some or all of the expenses; 2) the FWS or the landowner hires a contractor to complete the work; or, 3) FWS employees may do the on-the-ground work. CCS Grants are the typical funding mechanism to support most of the following programs: Great Lakes Fish and Wildlife Restoration Act, Great Lakes Coastal Program, North American Wetlands Conservation Act Grants, Partners for Fish and Wildlife, and Federal Aid in Sport Fish Restoration.

The most important funding authority for FWS is the Great Lakes Fish and Wildlife Restoration Act of 1998. The Act establishes a proposal and funding process to implement critical fisheries restoration actions. Critical actions include the evaluation and restoration of habitat in Great Lakes estuaries and tributaries, the restoration of Lakes Erie and Ontario's lake trout populations, and the rehabilitation of Great Lakes sturgeon in the basin. Between 1998 and 2002, the Act supported 73 fish rehabilitation projects totaling \$12 million, which includes more than \$5 million in matching funds.

Examples of activities funded with this program are scientific studies and assessments, habitat enhancements, and the development of fishery management plans. Project proposals are submitted to the Great Lakes Fishery Commission and reviewed by a committee that represents the signatories to the Joint Strategic Plan for Management of Great Lakes Fisheries. All projects are implemented by collaborative partnerships that involve nonfederal partners who provide nonfederal matching funds. These partnerships involve federal, state, and local agencies; tribal institutions; Canadian governmental units; nongovernmental organizations, and universities. The FWS may or may not be involved in implementing these projects.

The Great Lakes Coastal Program is another example of a basin-specific granting program of the FWS; the focus here is on coastal and riparian wetlands. The program aims at community-based partnerships and awards small grants (\$20,000 maximum) for planning, monitoring, restoration, and outreach activities. Federal agencies (including regional FWS offices), states, tribes, local governments, and nongovernmental organizations can apply for this program.

Wetland conservation projects may also receive funding through the North American Wetlands Conservation Act Grants Program, which supports activities under the North American Waterfowl Management Plan. In addition, the Partners for Fish and Wildlife Program restores and protects fish and wildlife habitat on private lands through voluntary alliances with individuals or organizations, while leaving the land in private ownership. States can also receive Federal Aid in Sport Fish Restoration through a cost-reimbursement program. The state covers the full amount of an approved project and then applies for reimbursement for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a nonfederal source. The program provides funding that can be used for aquatic education programs, coastal wetlands conservation, or boating access.

NOAA: The National Oceanic and Atmospheric Administration (NOAA) support in the Great Lakes basin spans a wide range of activities. NOAA's National Ocean Service (NOS) manages the Coastal Zone Management Program (CZM), which is the largest federal funding source for Great Lakes programs for the states. This program makes financial assistance available to any coastal state, including those on the Great Lakes. The funding can be used to develop and implement a comprehensive coastal management program consistent with CZM goals, which are to preserve and protect coastal resources while allowing compatible economic growth.

States also have access to mediation, technical, and information services through CZM. Section 309, which amended the Coastal Zone Management Act (CZMA) of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990, established an additional Coastal Zone Enhancement Grants Program, under which coastal states address priority issues identified by Congress to enhance existing coastal management programs. These issues include coastal wetlands protection and creation; natural hazards mitigation; public access enhancement; assessment of cumulative and secondary impacts; preparation and implementation of special area management plans; and energy facility siting procedures. CZARA also requires that states with approved coastal management programs develop Coastal Nonpoint Pollution Control Programs to meet CWA goals. This program is jointly administered by NOAA and U.S. EPA and makes CZMA-authorized grants for states to develop and implement their nonpoint source management programs.

The Great Lakes Sea Grant Network is part of NOAA's National Sea Grant College Program, a national program of partnerships among universities and the public and private sectors promoting wise stewardship of Great Lakes resources. The program combines research, education, outreach, and technology transfer activities related to coastal and marine resources under one roof. Sea Grant makes project grants to fund research, education, training, and advisory services. Eligible recipients are any organizations or individuals with a professional interest in Great Lakes resources, including the states, academic institutions, and private organizations.

NOAA's National Marine Fisheries Service (NMFS) has two grant programs to support fishery restoration and management projects in the Great Lakes. Project grants through the Anadromous Fish Conservation Act Program are available to any agency, organization, or individual, as long as the proposal is submitted by a state fishery management agency. These grants are intended for cooperative projects that either benefit Great Lakes fish ascending streams to spawn or serve for sea lamprey control. The Interjurisdictional Fisheries Act makes formula grants to states for research and law enforcement, the development of fishery management plans, and for restoration of interjurisdictional fishery resources damaged by a natural disaster.

The Coastal Services Center (CSC) of NOAA sponsors the Landscape Characterization and Restoration Program (LCR), which funds geographic and issue-based characterizations of coastal resources. Geographic characterizations are funded via cooperative agreements, a special form of grants that allow LCR to contribute staff and technological resources to a project in addition to providing the grant recipient with funds. Issue-based characterizations are developed through contracts.

Each issue-based characterization takes an interdisciplinary look at the physical, ecological, and socioeconomic aspects of a coastal management issue that affects a large geographic area (e.g. multiple watersheds). A "best value" approach is used to select the contractor; that is, the selection team balances the cost of the work with the quality of the proposed product to determine the combination that yields the best value to the coastal management community. The funds available for the contracts are on the order of \$100,000 and CSC contributes to the final product. Contractors focus on developing the content, and LCR staff focus on assembling and distributing the resulting documents.

NRCS: NRCS programs offer technical assistance to support water management and improve water quality in tributary watersheds. The Great Lakes Basin Program for Soil Erosion and Sediment Control improves water quality through soil erosion and sedimentation control demonstration projects,

technical assistance, and education programs. Through FY 2003, the program has supported 259 projects totaling almost \$8 million. Seventy-two projects are currently active and 187 projects have been completed. Grants go to projects that improve water quality in the Great Lakes basin through improved land management practices. Nonfederal project sponsors are expected to provide matching funds.

The Great Lakes Commission, in partnership with NRCS, U.S. EPA and the Corps of Engineers, coordinates the program. The Resource Conservation and Development Program (RC&D) supports state, tribal, and local units of government and local nonprofit organizations to plan and carry out programs for resource conservation and development in rural watersheds. Authorized RC&D areas in the basin, if they become a 501(c)(3) nonprofit, can apply for financial and technical assistance to meet various land conservation, water management, community development, and environmental needs.

The Watershed Surveys and Planning Program assists local organizations with watershed surveys and planning for small watersheds (250,000 and fewer acres). The focus of these plans is to identify solutions that use conservation practice and nonstructural measures to solve water-related resource issues. The program addresses watershed protection, flood prevention, erosion and sediment control, water supply, water quality, opportunities for water conservation, wetland and water storage capacity, drought problems, municipal and industrial water needs, upstream flood damages, water needs for fish, wildlife, and forest-based industries, fish and wildlife habitat enhancement, wetland creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available. The program also furnishes technical assistance to landowners and operators to accelerate planning and application of needed conservation measures on their individual land units.

The Emergency Watershed Protection program (EWP) provides funding to project sponsors for such work as clearing debris from clogged waterways, restoring vegetation, and stabilizing riverbanks. The measures that are taken must be environmentally and economically sound and generally benefit more than one property owner. NRCS provides up to 75 percent of the funds needed to restore the natural function of a watershed. The community or local sponsor of the work pays the remaining 25 percent, which can be provided by cash or in-kind services. Under the floodplain easement option, a landowner voluntarily offers to sell to the NRCS a permanent conservation easement that provides the agency with the full authority to restore and enhance the floodplain's functions and values at up to 100 percent federal cost. Each EWP project, with the exception of floodplain easements, requires a sponsor who applies for the assistance. A sponsor can be any legal subdivision of state or local government, including local officials of city, county, or state governments, Indian tribes, soil conservation districts, U.S. Forest Service, and watershed authorities. Project sponsors determine priorities for emergency assistance while coordinating work with other federal and local agencies.

FEMA: FEMA mitigation programs provide financial and technical assistance for a range of flood-related activities. Flood Mitigation Assistance (FMA) is a state-administered, costshare program through which states and communities can receive grants for flood mitigation planning, technical assistance, and mitigation projects. Eligibility to receive FMA planning and project grants is dependent upon community participation in the National Flood Insurance Program (NFIP). Examples of eligible FMA projects include the elevation, acquisition, and relocation of NFIP-insured structures. In a flood emergency, states with an approved enhanced state mitigation plan in effect at the time of disaster declaration may receive funding through the Hazard Mitigation Grant Program (HMGP). The Pre-Disaster Mitigation Program assists states and local governments (including Indian tribal governments) in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. All applicants must be NFIP participants, if they have been identified as having a special flood hazard area. The National Dam Safety Program supports research, training of dam professionals and owners, and state assistance funding.

USGS: The USGS Cooperative Water Program (Coop Program) is a cost-sharing partnership between the USGS and nonfederal public agencies at all levels of government. The program supports the collection of basic hydrologic data. In addition, the program also funds research projects and initiatives targeted at priority water issues. The current seven high-priority issues of the Coop Program are hydrologic hazards; water quality; hydrologic data networks; water availability and use; wetlands, lakes, reservoirs and estuaries; water resources issues in the coastal zone; and environmental effects on human health.

Bureau of Indian Affairs (BIA): The BIA administers two programs to fund tribal water resources projects. The Water Resources on Indian Lands program provides funding for the collection and analysis and for water management, planning, and development projects. The Fish, Wildlife, and Parks Program on Indian Lands funds a wide variety of projects, including base line inventories; habitat enhancement or protection; regulation of fishing, boating, and related public use activities; water quality compliance measures; and fish hatchery maintenance.

Table 5.2
Federal Water Resources Programs with Funding and Granting Capabilities
in the Great Lakes Basin.

Program Name	Purpose	Program expenditures (1992–2001) ^a
U.S. Department of Agriculture – Natural Resources Conservation Service		
Emergency Watershed Protection	This program is available for areas in the basin that have been damaged by natural disasters. The purpose of the program is to provide financial and technical assistance to remove debris from streams, protect destabilized streambanks, establish cover on critically eroding lands, repairing conservation practices, and the purchase of flood plain easements. The program is designed for installation of recovery measures.	^b
Great Lakes Basin Program for Soil Erosion and Sediment Control	Funds projects that protect and improve Great Lakes water quality by promoting soil erosion and sediment control through information and education programs, grants, technical assistance, and coalition building. Objectives include (1) limiting the input of associated nutrients and contaminants to waters in the basin, (2) minimizing off-site sources of sediment that cause damage to harbors, fish and wildlife habitat, recreational facilities, and public work systems.	\$3,625,000
Resource Conservation and Development Program	Provides technical and financial assistance to designated communities in the Great Lakes basin with the purposes to plan, develop, and carry out projects for resource conservation and development.	^b
Watershed Surveys and Planning	The purpose of this program is to assist federal, state, and local agencies; local government sponsors; tribal governments, and non-governmental program participants to protect and restore small watersheds from damage caused by erosion, floodwater, and sediment; to conserve and develop water and land resources; and solve natural resource and related economic problems on a watershed basis. The program provides technical and financial assistance to local people or project sponsors, builds partnerships, and requires local and state funding contribution.	^b
U.S. Department of Commerce – National Oceanic and Atmospheric Administration		
Anadromous Fish Conservation Act Program	This program can serve as a vehicle to cooperate with the states and other nonfederal interests to (1) conserve, develop, and enhance those fish species in the Great Lakes that ascend streams to spawn, and (2) to control sea lamprey. NMFS administers this grant program in cooperation with FWS.	^b
Coastal Zone Management Program	A federal-state partnership that provides a basis for protecting, restoring, and responsibly developing coastal communities and resources. The program includes encouraging and assisting states in the wise use of land and water, and encouraging the participation and cooperation of all government sectors with programs affecting the coast.	\$107,906,394
Coastal Zone Management Enhancement Program (Section 309, CZARA of 1990)	Grants are available to coastal states with federally approved coastal management programs, and encourages states to develop program changes in one or more of nine coastal enhancement areas: wetlands, public access, coastal hazards, cumulative and secondary impacts, energy and government facility siting, marine debris, ocean resources,	^e

	special area management plans and aquaculture. To receive funds, the programs must assess these nine specified areas of coastal zone management and identify priority enhancement activities.	
Interjurisdictional Fisheries Act	Provides grants to assist states in managing interjurisdictional fisheries resources.	^b

Table 5.2 (continued)

Landscape Characterization and Restoration Program	This program began in 1997 to help coastal resource managers examine the effects of management on coastal habitats. LCR works via grants (cooperative agreement), and contracts with the coastal management community to accomplish this goal.	^b
National Sea Grant College Program	National Sea Grant supports education and research in the various fields relating to the development of marine resources. All Great Lakes states, except Pennsylvania, have a Sea Grant program.	\$2,174,000
U.S. Department of Homeland Security – Federal Emergency Management Agency		
Flood Mitigation Assistance Program	Provides funding to assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program	^b
Hazard Mitigation Grant Program	Provides project grants to help states and communities implement long-term hazard mitigation measures following a major disaster declaration.	^b
National Dam Safety Program	The primary purpose of the National Dam Safety Program Act is to provide financial assistance to the states for strengthening their dam safety programs.	^b
Pre-Disaster Mitigation Program	Provides technical and financial assistance to States and tribal governments that, in turn, provide sub-grants to local governments for cost-effective pre-disaster hazard mitigation activities that complement a comprehensive mitigation program.	^b
U.S. Department of Interior – Bureau of Indian Affairs		
Fish, Wildlife, and Parks Program on Indian Lands	The goal of this program is to promote the conservation, development, and utilization of fish, wildlife, and recreational resources for sustenance, cultural enrichment, economic support, and maximum of benefit for Indians. The program provides direct payments for specified use.	^b
Water Resources on Indian Lands	The goal of this is program is to assist Indian tribes with the management, planning, protection, and development of their water and related land resources. The program provides direct payments for specified use as well as advisory and technical assistance.	^b
U.S. Department of Interior –Fish and Wildlife Service		
Challenge Grant Cost Share	This program provides grants to states, tribes, local agencies, organizations, and private interests to manage, enhance, and restore fish and wildlife resources.	^b
Federal Aid in Sport Fish Restoration	This program provides grants for approved state projects related to sport fish restoration.	^b
Great Lakes Coastal Program	This program, which began in 2000, funds projects that seek to protect and restore Great Lakes coastal ecosystems for the benefit of fish, wildlife, and people. Its goals are to identify and prioritize coastal habitats and to evaluate ecosystem health, identify threats, and lend biological focus to the planning process of other agencies.	\$500,000
Great Lakes Fish and Wildlife Restoration Act	Since 1991, this program has developed and implemented proposals for restoration of fish and wildlife resources in the Great Lakes basin. It has provided assistance to the Great Lakes Fishery Commission, states, tribes, and others to encourage cooperative conservation, restoration, and management of the fish and wildlife resources and their habitats.	\$6,900,000
North American Wetlands Conservation Act Grants Program	Provides matching grants to private or public organizations or to individuals who have developed partnerships to carry out wetlands conservation projects.	^b

Partners for Fish and Wildlife (Private Lands Program)	Provides restoration expertise and financial assistance to private landowners, tribes, and other conservation partners who voluntarily restore fish and wildlife habitat on their properties. The program targets interjurisdictional fisheries. Activities started in 1987.	\$268,500
U.S. Department of Interior – Office of Environmental Policy and Compliance		
Damage Assessment and Restoration Program	The purpose of this program is to restore injuries from oil spills and hazardous material discharges to the Department of Interior's trust resources by assessing damages and settling with responsible parties.	^b
U.S. Department of Interior – U.S. Geological Survey (Table 5.3 continued)		
Cooperative Water Program	This is a cost-sharing partnership between USGS and nonfederal agencies. The program funds the collection of directly comparable basic hydrologic data, studies of specific water resources problems, and hydrologic research.	^b
U.S. Environmental Protection Agency		
Brownfields Assessment, Revolving Loan Fund, and Cleanup Grants	<i>Assessment</i> grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfield sites. <i>Revolving Loan Fund</i> grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide subgrants to carry out cleanup activities at brownfields sites. <i>Cleanup</i> grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites.	^b
CWA Pollution Control (Section 106 Grants)	This program develops and implements comprehensive monitoring programs at the state and tribal levels to address all water quality management needs under the CWA. Section 106 awards grants to states and to eligible Indian tribes as base program support to maintain their surface water and groundwater programs.	^b
Clean Water Indian Set-Aside Grant Program	Provides grants to Indian tribes for planning, design, and construction of wastewater systems.	^b
Clean Water State Revolving Fund	Provides grants to states for the construction of wastewater treatment facilities and implementation of state management plans.	^b
Drinking Water State Revolving Fund	Provides grants to states to establish drinking water state revolving funds, whose purpose is to support drinking water system infrastructure improvements. These grants provide loans and other types of financial assistance to eligible public water supply authorities.	^b
Five-Star Restoration Program	To provide funds to four intermediary organizations--the National Association of Counties, the National Association of Service and Conservation Corps, the National Fish and Wildlife Foundation, and the Wildlife Habitat Council--which then make challenge grants, provide technical support, and opportunities for information exchange to enable community-based wetland and riparian restoration projects.	^b
Great Lakes Program – CWA Section 104(b)(3) Water Quality Cooperative Agreements/Grants	GLNPO, in concert with Regions 2, 3, and 5; makes funding available pursuant to CWA Section 104(b)(3) for activities in the Great Lakes Basin and in support of the Great Lakes Water Quality Agreement. State pollution control agencies, interstate agencies, other public or nonprofit private agencies, institutions, and organizations are eligible. Assistance (through grants, cooperative agreements, and interagency agreements) is available for projects reducing the level of toxic substances in the Great Lakes; protecting and restoring vital habitats, protecting human health; and restoring and maintaining stable, diverse, and self-sustaining populations..	^b
Nonpoint Source Implementation (CWA Section 319) Grants	This program provides formula grants to assist states in implementing U.S. EPA-approved CWA Section 319 nonpoint source management programs. The program is jointly administered at the federal level by NOAA and U.S. EPA, and at the state level by coastal management and water quality agencies.	\$13,236,025 ^c
Superfund Technical Assistance Grants for Citizen Groups at Priority Sites	Provides funds to community groups to permit them to hire technical advisors who can assist the groups in interpreting technical information concerning the assessment of potential hazards and selection and design of appropriate remedies at sites eligible for cleanup under the Superfund Program.	^b

^aUnless otherwise noted, the funding figures in this column represent federal fiscal year expenditures.

^bGreat Lakes basin funding is not known for this program.

^cFunding amount for Niagara River Toxics Management Program and New York Areas of Concern.

^dFunding amount Region 2 only.

^eIncluded in CZM funding amount.

3. State Water Resources Programs with Funding and Granting Capabilities

With the exception of Illinois, all of the Great Lakes states participate in the CZM. The Coastal Zone Management Programs of Indiana, Michigan, Minnesota, Ohio, Pennsylvania, and Wisconsin use parts of the annual grant award from NOAA to make sub-grants to local governments, nonprofit groups, and state agencies. Projects are selected for funding according to state priorities as described in each program's annual project application announcement. The project sponsors need to provide state or local matching funds (usually 1:1) for grants received under any of the state CZMs.

In 1989, the governors of the eight Great Lakes states created an endowment fund program called the Great Lakes Protection Fund (GLPF). Seven Great Lakes states --Illinois, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin--have contributed \$81 million to the fund's permanent endowment. Indiana has not contributed to the fund. The GLPF endowment is invested to produce income. Two-thirds of the fund's net income is dedicated to regional projects that produce tangible improvements to the health of the Great Lakes ecosystem. The remaining third is distributed annually to the member states, in proportion to their original contribution, so they can support local projects that match up with their priorities. Recipients include state agencies, academia, industry, and nongovernmental groups, as well as collaborative partnerships among these groups.

Two Great Lakes states, Michigan and New York, fund a great part of their environmental restoration activities through bond programs. In 1996, New York voters endorsed the Clean Water/Clean Air Bond Act, a major environmental initiative championed by Governor George E. Pataki. In 1998, Michigan voters approved the Clean Michigan Initiative, which replaces the 1988 Quality of Life Bond Fund.

The Clean Michigan Initiative is a general obligation bond, that is, its funds are to be used as approved by the voters. Of the total approved amount of \$675 million, the State of Michigan has \$335 million to clean up contaminated sites and to promote brownfield redevelopment. Each year, the DEQ must seek an annual appropriation from the state assembly to be able to use Clean Michigan Initiative funds. As part of this request, the DEQ must submit a list of the cleanup project sites that includes a description of planned remedial actions as well as their estimated cost.

New York's Clean Water/Clean Air Bond Act (Bond Act) authorizes a total of \$1.75 billion for five environmental categories: clean water (\$790 million), safe drinking water (\$355 million), clean air (\$230 million), brownfields (\$200 million), and solid waste (\$175 million). Under each of these categories, the state administers a variety of programs that provide grants and other resources to state agencies, municipalities, and community organizations for a wide variety of environmental projects. The selection process for Bond Act projects includes a review by independent committees of environmental experts and community members. The Bond Act authorizes \$25 million of the total of \$1.75 billion to implement priorities for the Great Lakes.

All of this funding has already been awarded to fund a total of 33 projects. The funded projects address Great Lakes priorities as identified in the Lake Ontario and Lake

Erie LaMPs, the Niagara River Toxics Management Plan, and RAPs for New York's AOCs. Funded projects include 19 municipal wastewater projects, eight nonpoint source water pollution control projects, and six aquatic habitat projects.

State pollution control agencies have programs to administer State Revolving Fund grants and other CWA-related funding from the U.S. EPA. An example is Minnesota's Clean Water Partnership (CWP), which provides local governments with resources for nonpoint-source projects. In addition to passing through federal grants to local recipients, Minnesota's CWP also provides matching funds for eligible CWA Section 319 projects.

CWP funding for local water-quality projects is awarded in two phases: (1) in the resource investigation phase, a diagnostic study and implementation plan are completed; (2) in the project implementation phase, best management practices (BMPs) identified in the first phase are implemented. BMPs may, for example, include sedimentation ponds or wetland restoration. The financial assistance is available through grants or low-interest loans. Grants are available for up to 50 percent of the project costs. Loans can only be used for the project implementation phase but may cover the entire cost of implementation or supplement a grant. Local governments can also use loans to set up their own programs to provide pass-through loans to private parties.

Table 5.3
State Water Resources Programs with Funding and Granting Capabilities in the Great Lakes Basin

Program Name	Purpose	Program expenditures (1992–2001) ^a
Illinois Environmental Protection Agency		
Illinois Great Lakes Protection Fund	The Illinois GLPF program funds special studies and projects related to Great Lakes research, cleanup, restoration, or pollution prevention. The projects are selected as part of the states' budget process.	\$5,000,000
Indiana Department of Natural Resources		
Indiana Lake Michigan Coastal Program	Indiana participates in the CZM via the Indiana Lake Michigan Coastal Program. The purpose of Indiana's coastal program is to enhance the state's role in planning for and managing natural and cultural resources in the coastal region of Lake Michigan and to support partnerships between federal, state and local agencies and organizations.	^b
Lake and River Enhancement Program	This program funds restoration activities by providing technical or financial assistance for projects that reduce nonpoint source sediment and nutrient pollution in Indiana's and adjacent state's surface waters.	^b
Michigan Department of Environmental Quality		
Clean Michigan Initiative	A \$675 million general obligation bond program that is used for environmental restoration activities such as the cleanup of brownfields and greenspace preservation.	\$255,900,000
Michigan Coastal Management Program	Michigan's Coastal Management Program was developed under the CZMA and approved in 1978. Since then, the Program has assisted organizations in protecting and enhancing their coastal areas, funded studies related to coastal management and helped to increase recreational opportunities in Michigan's Great Lakes coastal area.	^b
Michigan Great Lakes Protection Fund	By mandate, Michigan's GLPF program only funds research projects by universities and for-profit groups. The research project agenda is determined each year by a MDEQ technical advisory board and may be based on legislative direction, recommendations from MDEQ departments, or current environmental issues.	\$5,199,601

Minnesota Board of Water and Soil Resources (Table 5.3 continued)		
Comprehensive Local Water Planning Challenge Grant Program	Provides financial and technical assistance to counties for development and implementation of local water plans.	\$428,732
Erosion, Sediment Control, and Water Quality Costshare Program	Provides funds to soil and water conservation districts for cost-sharing conservation projects that protect and improve water quality by controlling soil erosion and reducing sedimentation. This restoration program provides technical and financial assistance to landowners who install permanent nonproduction-oriented practices to protect and improve soil and water resources.	\$1,293,298
Local Water Planning and Wetland Conservation Act	This block grant program assists local governments in implementing four state-mandated programs. Water planning grants are available for restoration activities related to implementing comprehensive water plans and the local administration of grants.	\$976,313
Minnesota Department of Natural Resources		
Conservation Partnership Program	Provides grants to private organizations and local units of government for activities related to restorations of fish, wildlife, and native plant habitats. The program also funds research to improve fish and wildlife habitats.	^b
Lake Superior Coastal Program (CZM)	Minnesota's Lake Superior Coastal Program provides grants to preserve, protect, develop and where possible restore or enhance coastal resources along Minnesota's north shore of Lake Superior.	^b
Minnesota Pollution Control Agency		
Basin Planning	MPCA created this program in 1995 to coordinate water management efforts around the state's 10 major drainage basins by focusing financial and staff resources upon key water resource management priorities. The program provides support to local and state agencies and citizen groups to develop watershed plans for making sound resource management decisions.	\$175,000
Clean Water Partnership	Funds activities related to runoff from agricultural and urban areas. The program provides funds to local governments for projects that protect and improve lakes, streams, and groundwater resources in Minnesota. Funds can be requested for research, cleanup, restoration, or pollution prevention projects.	\$2,613,798
Minnesota State Planning Agency		
Minnesota Great Lakes Protection Fund	By state statute, funds from Minnesota's GLPF can only be spent to protect water quality in the Great Lakes. Grants are awarded to finance projects that advance goals of the binational Toxic Substances Control Agreement and Water Quality Agreement. Projects involve research, cleanup, restoration, or pollution prevention activities.	\$987,000
New York State Department of Environmental Conservation		
Clean Water and Clean Air Bond Act	This program was established in 1996. It consolidates the funding application processes of several state agencies and programs. One of the major programs is the Environmental Protection Act and Fund, which addresses brownfields cleanup and restoration, land and open space conservation, and waterfront revitalization. Other consolidated programs focus on water quality, safe drinking water systems, and other environmental conservation efforts.	\$428,820,724
New York Great Lakes Protection Fund	New York's GLPF program provides for overall intra- and interstate coordination and planning of the state's Great Lakes programs, and is a source of grants for research, data collection, technology development, policy analysis, and outreach.	\$1,494,053
Ohio Department of Natural Resources		
Great Lakes Coastal Restoration Grant Program	The Great Lakes Coastal Restoration Grant program provides reimbursement to groups who wish to undertake coastal restoration and water quality improvement projects in the Ohio Lake Erie coastal area and drainage basin. The funds are available through NOAA's Coastal Zone Management Program and are administered by ODNR's Office of Coastal Management.	^b

Ohio Environmental Protection Agency (Table 5.3 continued)		
Clean Ohio Fund	This program, since 2002, awards grants for cleanup and restoration of polluted areas and the preservation and conservation of farmland.	^b
Ohio Lake Erie Commission/Lake Erie Protection Fund (Ohio Great Lakes Protection Fund)	The Ohio GLPF program provides grants to fund research, support cleanup and restoration efforts, and educate nonprofit, government, or public entities seeking to protect or enhance Lake Erie.	\$6,943,894
Pennsylvania Department of Environmental Protection		
Growing Greener Grant Program	This program began in 1999 to address critical concerns related to education and outreach, as well as wetland restoration, soil erosion and sedimentation controls, and creek assessments in Lake Erie tributaries.	\$700,000
Pennsylvania Coastal Zone Management Program	Through annual federal grants, CZM provides technical and financial assistance to local governments and state agencies to control development in coastal hazard areas, improve public access, protect natural resources, expand strategies to improve local economies, and promote proper planning. The program also provides technical assistance to federal and state agencies in conserving coastal resources and to property owners with bluff recession problems.	\$938,000
Pennsylvania Great Lakes Protection Fund	The Pennsylvania GLPF provides grants to fund education, research, and monitoring activities.	\$253,721
Wisconsin Department of Administration		
Wisconsin Coastal Management Grants Program	Wisconsin's Coastal Management Program (WCMP) is the state's participation in NOAA's CZM. WCMP awards grants to projects that support the management, protection and restoration of Wisconsin's coastal resources or increase public access to the Great Lakes. Local units of governments in WI's 15 coastal counties, state agencies, tribal governments, regional planning commissions, universities, colleges, technical schools and non-profit organizations are all eligible.	^b
Wisconsin Department of Commerce		
Brownfields Grant Program	Provides financial assistance for brownfields redevelopment and related environmental remediation cleanup and restoration projects.	^b
Wisconsin Department of Natural Resources		
Site Assessment Grants	This grant program was started in 2000 to provide local governments with grants to perform the initial investigation of contaminated properties and other eligible activities. Its focus is the restoration and cleanup of abandoned, idle, or underused industrial or commercial facilities and sites.	^b
Sustainable Urban Development Zone Program	This 1999 WDNR pilot program operates in cooperation with other state agencies and the cities of Milwaukee, Green Bay, La Crosse, Oshkosh, and Beloit. Funds may be used to investigate environmental contamination and clean up brownfields properties in these cities.	\$1,700,000
Wisconsin Great Lakes Protection Fund	The Wisconsin GLPF program provides funds to municipalities and other governmental units, groups, nonprofit organizations, universities and others for various projects. Funds are used for (1) implementing activities included in RAPs, (2) restoring or protecting fish and wildlife habitat in or adjacent to Lake Michigan or Lake Superior, or (3) planning or providing information related to cleaning up or protecting the Great Lakes.	\$2,224,914

^aUnless otherwise noted, the funding figures in this column represent state fiscal year expenditures.

^bGreat Lakes basin funding is not known for this program.

4. Foundation Programs with Funding and Granting Capabilities in the Great Lakes Basin

Dozens of foundations and trusts provide grants and loans for environmental projects or other water resources-related programs or projects. Most foundations have a very specific, and often localized, purpose. The Great Lakes Fishery Trust, for example, was created to compensate the citizens of Michigan for the lost use and enjoyment of fishery resources of Lake Michigan resulting from the operation of the

Ludington Pumped Storage Plant. The George Gund Foundation, another example, makes environmental grants for projects focused on the greater Cleveland, OH, area. The Great Lakes Information Network (GLIN) has a database of foundation funding and granting sources (<http://www.glin.net/infocenter/news/funding.html>). Specifically, the following three foundations maintain major nationwide funding programs with wide applicability to Great Lakes restoration activities in the basin:

The Environment Program of the Charles Stewart Mott Foundation supports efforts to conserve freshwater ecosystems in North America, including the Great Lakes. Grants are provided to improve capacity building for environmental organizations and to protect and restore selected freshwater ecosystems through conservation activities.

The Environment Program of the Joyce Foundation supports various policy initiatives, including long-term efforts to protect the Great Lakes environment, and provides grants to organizations for environmental projects. Program priorities include making improved water quality a goal of state and federal policies on land use, transportation, and agriculture; establishing a better understanding of the supply of and demand for Great Lakes water; and promoting policies that encourage water infrastructure projects to be less capital intensive and more environmentally sensitive, as well as more cost effective.

The General Challenge Grant Program of the National Fish and Wildlife Foundation (NFWF) awards grants to foster cooperative partnerships that conserve fish and wildlife and the habitats on which they depend. Challenge grants are designated for projects that advance specified priority actions and meet certain “challenge” criteria. For example, the Five-Star Challenge program is for restoration efforts that involve partnering, funding, and/or participation of all of the following “five stars” in the project: (1) schools or youth organizations; (2) local or tribal governments; (3) conservation organizations or local citizen groups; (4) state and federal resource management agencies; and (5) foundations or other funders. Projects are awarded that address priority actions by promoting conservation, work proactively to involve other conservation and community interests, leverage NFWF-provided funding, and evaluate project outcomes. Eligible recipients include federal, state, and local governments, educational institutions, and nonprofit organizations.

Table 5.4.
Foundation Programs with Funding and Granting Capabilities in the Great Lakes Basin

Program Name	Purpose
Charles Stewart Mott Foundation	
Environment Program	Provides grants to improve capacity building for environmental organizations and to protect and restore selected freshwater ecosystems through conservation activities.
Joyce Foundation	
Environment Program	Provides grants to organizations for environmental projects. Program priorities include making improved water quality a goal of state and federal policies on land use, transportation, and agriculture; establishing a better understanding of the supply of and demand for Great Lakes water; and promoting policies that encourage water infrastructure projects to be less capital intensive and more environmentally sensitive, as well as more cost effective.
National Fish and Wildlife Foundation	
General Challenge Grant Program	Awards challenge grants to foster cooperative partnerships to conserve fish and wildlife and the habitats on which they depend. General challenge grants are available to federal, state, and local governments, educational institutions, and nonprofit organizations.