

**Support Plan  
Great Lakes Fishery and Ecosystem Restoration  
April 2006**

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# **SUPPORT PLAN**

For the  
Great Lakes Fishery & Ecosystem Restoration Program  
Authorized by Section 506 of the Water Resources Development Act of 2000  
April 2006

## **Introduction**

This document has been prepared to outline the process and procedures the Buffalo, Chicago, and Detroit Districts of the Corps of Engineers will follow in implementing the authority provided to the Corps in Section 506 of the Water Resources Development Act of 2000 (Appendix A). Section 506 specifically calls for the development of this Support Plan outlining how the Corps can support the management of the Great Lakes fisheries, in cooperation with the signatories to the Joint Strategic Plan for Management of the Great Lakes Fisheries. This was achieved by partnering with the Great Lakes Fishery Commission and contracting a consultant to engage the community of fishery managers and summarize their views. These views, along with a description of the state of the lakes and ideas about how the Corps could assist fishery managers, are summarized in the consultants report (Appendix B). This Support Plan is intended to address the needs identified in Appendix B to the extent possible consistent with Corps' policy, and in a manner similar to Corps' environmental restoration authorities managed under the Continuing Authorities Program.

## **Great Lakes Overview**

The following overview of the Great Lakes ecosystem is intended to provide a context within which the value of activities proposed under the Great Lakes Fishery and Ecosystem Restoration Program can be assessed. The geological origins, the physical, chemical, and biological changes over the last 200 years due to human activity, as well as investments in the past 40 years to address the most egregious sources of degradation, define the limits of and set the stage for efforts to restore the beneficial uses of the Great Lakes that have been lost or seriously degraded.

The Great Lakes - The Great Lakes basin covers approximately 291,300 square miles. The five Great Lakes are interconnected, and their size and depth determine how fast water is cycled through the system. The water retention time for each lake has obvious implications related to pollution loading and the degree to which land use changes in each lake's watershed affect water quality. Due to the large area covered by the lakes, the Great Lakes differ significantly in climate, physical properties, chemical characteristics, productivity, and species composition and diversity. In addition, each lake exhibits differences in temperature variations due to latitude and the depth of the basin.

Settlement and Development of the Great Lakes Basin - When the first Europeans arrived in the Great Lakes area in the 1600s, their primary focus was on the exploitation of fur-bearing animals. After the War of 1812, settlement was rapid. Commercial logging operations first began in Canada in the 1830s, and then moved progressively westward to Michigan, Wisconsin, and Minnesota. Logging operations in the basins of Lake Ontario and Lake Erie removed more than 60 percent of the upland forests of white pine by the 1860s. The removal of trees from mature forests soon exceeded the replacement by new growth, and by the turn of the century, timber production in the region declined rapidly. Where soils were appropriate, farm crops began to replace forest cover.

Water and wind erosion of soil that followed clear cutting, and subsequent frequent fires in the Upper Great Lakes, were major contributors to sedimentation that significantly decreased the productivity of many Great Lakes tributaries and shallow embayment areas. Increased agricultural activity in the basin also contributed both sediments and nutrients to the lakes. A transitional phase from 1880 to 1930 saw a second shift in the land uses in southern Ontario, New York, Ohio, southern Michigan, Illinois, and Indiana from primarily rural/agricultural to urban/industrial.

Early in the twentieth century rapid industrialization occurred in the region. Major shipping ports developed throughout the Great Lakes to transport raw materials including iron ore, coal, and other minerals mined in the region to the major manufacturing and urban centers located on the lakes. The accessibility of iron ore and other raw materials essential to the production of steel and other industrial products formed the basis for major industrial and manufacturing growth of the Great Lakes region that continued through the 1970s. Industrial growth and urbanization brought major changes to the Great Lakes. Wastewater discharges, deposition from air emissions, solid waste disposal practices, runoff from large urbanized areas, intensive agricultural production, and associated chemical contaminants all contributed to the deterioration of water quality as well as the physical habitat of the Great Lakes and their tributaries.

The construction of dams on the Great Lakes tributaries beginning in the 1800s—first for the transport of timber, then for waterpower, and later for electric generation and water supply purposes—blocked access to spawning areas and in other ways negatively affected habitat essential to many indigenous fish species. By 1940 dams had been constructed in the lower portion of nearly every major tributary to the Great Lakes; hundreds of dam structures remain in some tributary watersheds. Many dams have outlived their original purposes and are in a state of disrepair, others are nearing the end of their useful life.

Great Lakes Ecosystem - The Great Lakes basin ecosystem includes the interacting components of air, land, water, and living organisms, including humans: it is composed of a mosaic of smaller ecosystems, all of which are different, but interdependent. These small ecosystems contain interacting physical, chemical, and biological components. Each provides habitats for various living organisms. Within the populations of living organisms are the diverse genetic resources of the ecosystem that have evolved over thousands of years. This genetic legacy, consisting of evolving traits

that have survived through varied conditions over millennia, is the basis for the biodiversity of the ecosystem.

Each habitat type contains unique biological communities or aggregations of species, but many species use a variety of habitats throughout their life cycle. The primary current habitat concerns include degradation and loss of nearshore habitat and wetlands, and fragmentation of Great Lakes tributaries. Although the nearshore area represents only a small fraction of the total area of the lakes, loss of nearshore transition vegetation and the construction of shoreline structures can severely impact reproduction, survival of juvenile forms, and recruitment of many Great Lakes fish species as well as critical fish food organisms.

Healthy ecosystems require high-quality physical and chemical habitats to ensure the successful growth, survival, and reproduction of organisms. Historically, fish habitat was defined in terms of the physical structure and composition of the environment. Today, however, the definition includes both biotic and abiotic factors. The definition of habitat used in this context "... is the set of places where a fish (or group of fish) could potentially live. The needs of the fish are determined by their biology: the physical, chemical, and biological characteristics of the environment then delineate the places where they can live" (Hayes 1999 – see Appendix B). Throughout their lifecycle fish use many types of habitats. Since different species utilize an array of habitats, it is imperative that managers make decisions based on the entire life history of a species.

Habitats within the Great Lakes system are diverse and home to a variety of plant and animal species. Because of the diversity of habitats, there is a complex array of response mechanisms of both the physical and biological environment to water level changes. A decline in ecosystem health can often be directly attributed to losses of critical habitat. Shallow-water habitats near shore are more dramatically influenced by lake levels than are deep-water habitats. Small shifts in lake levels can alter the extent, structure, and functions of coastal habitats, and change the interaction of organisms between coastal and open-lake habitats. Human impacts on aquatic habitats are highest in coastal and nearshore areas.

The Great Lakes fishery and the ecological system upon which it depends cannot be fully restored to the conditions that existed prior to European settlement of the Great Lakes region. The extirpation, and in some cases extinction, of several fish species, the purposeful and accidental introduction of non-indigenous species, and the irreversible effects of major land use changes and related human activities in the Great Lakes basin will require adaptive management approaches that recognize these limitations. However, opportunities are now available that take advantage of increased public support for protection of the Great Lakes and expanded efforts to restore critical elements of the ecosystem. This support is invaluable to the recovery and stabilization of native and non-native fish populations that offer the potential for long-term sustainable benefits to residents of the Great Lakes Basin.

The principal treaties, organizations, and programs involved in Great Lakes restoration efforts include:

- 1909: Boundary Waters Treaty—established the International Joint Commission (IJC) to mediate and resolve transboundary issues related to Great Lakes resources.
- 1954: Convention on Great Lakes Fisheries—established the Great Lakes Fishery Commission to control invasive sea lamprey, coordinate fishery research, and facilitate cooperative fisheries management among the state, provincial, tribal, and Federal management agencies, including development in 1981 of A Joint Strategic Plan for Management of Great Lakes Fisheries.
- 1972: Great Lakes Water Quality Agreement of 1972—administered through the International Joint Commission in cooperation with U.S. and Canadian Federal governments, eight Great Lakes states, and two Canadian provinces to restore the chemical, physical, and biological integrity of the Great Lakes.
- 1978: Revised Great Lakes Water Quality Agreement of 1978, as amended by Protocol in 1987—facilitates development of Remedial Action Plans (RAPs) and Lakewide Management Plans (LaMPs) to restore beneficial use impairments in Areas of Concern (AOCs).
- 1992: First biennial State of the Lakes Ecosystem Conference (SOLEC)—administered through the U.S. Environmental Protection Agency and Environment Canada in cooperation with state and provincial governments to provide independent scientific reporting on the state of aquatic communities of the Great Lakes ecosystem.

These treaties, organizations and programs are discussed in more detail under ‘Institutional Arrangements and Complementary Programs’ in Appendix B.

#### Areas of Progress/Opportunity

Water Quantity - Because even relatively small changes in the mean levels of the Great Lakes can have substantial effects, the United States Congress in 1986, at the urging of the Great Lakes states, included in the Water Resources Development Act a requirement that “no water shall be diverted from any portion of the Great Lakes from within the United States, or from any tributary within the United States of any of the Great Lakes, for use outside the Great Lakes Basin unless such diversion or export is approved by the governors of each of the Great Lakes states” (Nov. 17, 1986, Amended December 11, 2000, P.L. 99-662, Title XI, 1109, 100 Stat. 4230).

Wetlands - The physical and biological elements required for wetland restoration have become better understood in the last decade and sites have been identified throughout the Great Lakes where such efforts could increase the availability of this valuable habitat type.

Tributary Riparian Zone - Conservation farming practices such as those that minimize soil erosion, decrease fertilizer and chemical applications, and maintain

vegetated strips adjacent to watercourses can minimize the negative effects of intensive agriculture on water quality and help restore natural stream habitats. The revegetation of riparian areas through the use of buffer zones or greenways, coupled with off-channel storm water detention and/or creation of wetlands to capture and treat storm water runoff, has the potential to restore habitat in Great Lakes tributary rivers and streams in urbanized areas.

Tributaries - Removing dams to reestablish free-flowing tributary rivers or providing fish passage over remaining useful structures offers a major opportunity for restoration of certain Great Lakes fish populations that have historically relied upon rivers for spawning and nursery areas. Restoring natural flow regimes in urbanized watersheds tributary to the Great Lakes will require detention/retention of storm water flows from impermeable surfaces.

Reefs - Targeted restoration of historically significant nearshore spawning reefs, where the proximate cause of their demise (e.g., sedimentation and/or dredge disposal) has been identified and controlled, may offer the opportunity to restore self-reproducing populations of nearshore, reef-spawning species such as walleye.

Shoreline Habitat - Softening or naturalizing man-made shoreline structures by re-inserting the natural physical attributes and/or reestablishing natural flow characteristics can restore critical nearshore habitat.

Great Lakes Connecting Waterways - The collective attributes of the Great Lakes connecting waterways stand by themselves as a unique, global natural resource worthy of special attention. Each of these connecting waterways could benefit from efforts to restore wetland complexes, natural flow regimes, and mitigation to replace habitat lost to accommodate transportation and hydroelectric production.

Biological Components – The composition of fish species in the Great Lakes basin has been in constant flux for at least the past 150 years. In that time, the introduction of non-indigenous species has had a major, and often devastating, impact on the fishery. A combination of chemical controls and spawning stream barriers are effective tools in reducing sea lamprey abundance in the Great Lakes. Similarly, fish barrier devices can be used in other specific applications to control the range of non-indigenous species or limit the negative effects of introduced species such as carp in confined, critical spawning and nursery areas used by valuable native species. However, elimination of non-indigenous invertebrate and fish species contained in the ballast tanks of ocean-going vessels using the Great Lakes is a major challenge. Clearly, prevention, or at the very least, reduction in the number and types of non-indigenous organisms entering the Great Lakes is much less expensive than attempting controls after the fact.

#### Status and Trends of Great Lakes Fishery

Both terrestrial and aquatic habitats within the Great Lakes watershed have been extensively altered from their natural state. Physical habitat alterations including: the construction of dams, channel dredging, the filling and destruction of wetlands, and land

use changes and related increases in pollution have negatively affected the interrelationships between species and disrupted functioning of the biological components of the Great Lakes ecosystem. The introduction of non-native species and overexploitation of fish stocks has disrupted the natural food web and dramatically changed species composition in the Great Lakes. Even if the fishery is “restored” to a healthy state, it will not have the same species composition that was in place at the time of European settlement.

SOLEC Measures - The State of the Lakes Ecosystem Conference (SOLEC) measures the state of aquatic communities by reductions in the number of indigenous species, predator/prey balance, and reproductive impairment of native species. Current conditions are generally categorized as mixed/improving throughout the Great Lakes. Lakes Michigan and Ontario and the Eastern Basin of Lake Erie are rated somewhat lower, but Lake Superior rates highest because of the fewer numbers of native species that have been extirpated and the self-sustaining lake trout populations. Aquatic habitat and wetlands have been given an overall rating of poor because of the tremendous losses in habitat quality as well as quantity. There are a few bright spots however; for example, brook trout stream habitat tributary to the Upper Great Lakes is in relatively good condition.

Recreational Fishery - In 1991, U.S. Great Lakes recreational fisheries accounted for an estimated \$1.3 billion in direct angler expenditures with an approximate total economic impact of \$2 billion to \$4 billion.

Commercial Fishery - Many native fish stocks have declined, collapsed, or been extirpated, yet total yields as measured by weight have remained relatively constant during the past century. The total value of the commercial harvest has declined significantly from its peak in the early 1900s, primarily because of the reduced harvest or loss of the more valuable, native species. Based on court decisions related to Indian treaty fishing rights beginning in the 1970s, tribal fishers now account for a significant percentage of the total value of all commercial species landed in the United States waters of the Upper Great Lakes. The dockside value of commercial fisheries in 1990, basin-wide, was \$52 million, with an estimated total economic value of \$200 million.

### **Authorizing Legislation**

The language that authorized preparation of this Support Plan appeared as Section 506 of the Water Resources Development Act of 2000 (Public Law 106-541, 114 STAT. 2645) and is provided in Appendix A. Section 506 provides for the planning, design, construction, and evaluation of projects to restore the fishery, ecosystem, and beneficial uses of the Great Lakes in cooperation with other Federal, State, and local agencies and the Great Lakes Fishery Commission (GLFC). Costs for the development of the Support Plan and for planning, design, construction, and evaluation of restoration projects are to be shared 65% Federal and 35% non-Federal. Non-Federal interests are to receive credit for the value of lands, easements, rights-of-ways, relocations, and dredged material disposal areas needed for construction. Non-Federal interests are responsible for the

operation, maintenance, repair, rehabilitation, and replacement of projects. Federal appropriations in the amounts of \$300,000 for the Support Plan and \$100,000,000 for the planning, design, construction, and evaluation of specific restoration projects are authorized.

Section 506 provides programmatic authority for restoration of the Great Lakes fishery and ecosystem, where the term Great Lakes includes the connecting channels, historically connected tributaries, and basins of the five Great Lakes, Lake St. Clair, and the St. Lawrence River to the 45<sup>th</sup> parallel of latitude. This authorization compliments earlier Corps of Engineers environmental authorities by establishing a Great Lakes specific restoration authority with a focus on support of fisheries. Section 506(c)(1) calls for development of *'a plan for activities of the Corps of Engineers that support the management of the Great Lakes fisheries'* and for development of the plan in cooperation with *'the signatories to the Joint Strategic Plan for Management of the Great Lakes Fisheries, and other affected interests'*. Management of the Great Lakes fisheries is carried out by resource management agencies of the eight states and the province that border the lakes, and various tribal organizations. These agencies, along with Federal agencies on each side of the border, were signatories to the Joint Strategic Plan for Management of the Great Lakes Fisheries (JSP) that guides the development of plans for each of the lakes. The JSP recognizes that the Great Lakes Fishery Commission's individual lake committees will be the major action arms for its implementation and for developing operational plans.

The Great Lakes Fishery Commission was established by the 1954 Convention on Great Lakes Fisheries, and consists of four Canadian commissioners (appointed by the Privy Council) and four American commissioners plus one alternate (appointed by the President) supported by a small staff in Ann Arbor, MI. The GLFC was charged with five major duties: to formulate a research program to identify measures to enhance the sustained productivity of any Great Lakes fish stock of common concern; to coordinate research made pursuant to such programs and, if necessary, to undertake such research itself; to recommend appropriate measures to the contracting parties on the basis of the findings of such research programs; to formulate and implement a comprehensive sea lamprey control program; and to publish or authorize the publication of scientific and other information obtained by the commission in the performance of its duties. At the request of the states, the province, and the tribes, the commission also has the responsibility to facilitate the implementation of the JSP. Fish-community objectives for each lake are developed by consensus by the various lake committees, which also coordinate management and research programs for each of the lakes. The JSP recognizes the role of the GLFC's Council of Lake Committees (CLC) as a formal group to evaluate recommendations made by individual lake committees and their member's agencies and to the GLFC that may affect multiple lakes or connecting channels.

Not only does Section 506 provide an environmental restoration authority that is specific to the Great Lakes basin and directs that the program be developed in cooperation with the fishery management community, it also emphasizes an evaluation

program that includes examination of the success of individual projects in consultation with the GLFC and other agencies.

## **Support Plan Development**

### **Intent of Support Plan**

As described in the legislation, the Support Plan is to be ‘a plan for activities of the Corps of Engineers that support the management of Great Lakes fisheries’. Projects should be planned, designed, and constructed to support the restoration of the fishery, ecosystem, and beneficial uses of the Great Lakes. And, the success of projects in meeting fishery and ecosystem goals should be evaluated. The focus of Section 506 is clearly on the support of resource managers in the restoration of the fishery, but the legislation also allows ecosystem restoration efforts that would restore other beneficial uses of the Great Lakes. This Support Plan has been developed to function as a program management plan for the Corps’ Great Lakes Districts, and as a guide for their activities under this authority. As Section 506 provides programmatic authorities similar to Sections 206 and 1135 under the Corps’ Continuing Authorities Program (CAP), it was important to develop a Support Plan that is similar to the operating procedures used in the CAP in order to have a consistent agency approach to environmental restoration issues. However, the plan does reflect the focus of Section 506 on fisheries and the emphasis on evaluation of projects. It also provides a framework for the involvement of fisheries management agencies in the evaluation of proposals and projects.

Fishery management on the Great Lakes is continuing to evolve from the management of people (catch restrictions etc.) to a broader aquatic ecosystem approach. This approach includes habitat restoration and protection, traditional Corps environmental activities. The Support Plan is also designed to include Corps participation in projects identified as important by the fishery management community. Projects designed to control the spread of invasive species or maintain populations of key species (sometimes using barriers, holding facilities, etc.) play an important role in the support of Great Lakes fisheries management.

### **Development Process**

Because of its interest in supporting activities to restore the Great Lakes fishery, the GLFC stepped forward to act as the non-Federal sponsor for the development of this Support Plan. The GLFC’s role as the key organization providing structure and support to the cooperation among the many fishery management agencies provided instant credibility to the Section 506 effort.

A steering committee was established composed of one participant from each of the five Great Lakes representing either a state or tribal fishery management agency, and one at-large member from academia. This committee provided consultation and guidance in the development of the recommendations, and sponsored an effort to collect additional information from Federal, state, and provincial agencies and regional organizations with an interest in restoration of the Great Lakes fisheries and ecosystem.

Public presentations were made and comments solicited at several annual Lake Committee meetings. Presentations were also made at Council of Lake Committees meetings where progress was discussed, support requested, and comments solicited. The information gathered, guidance provided by the steering committee, and existing Corps' guidance for the Continuing Authorities Program (CAP) was used by the Detroit District in developing this Support Plan. An effort was made to outline a process consistent with Corps' CAP authorities while responding to the specifically identified needs expressed by Great Lakes fishery managers as summarized in Appendix B.

### **Program Objectives**

Based upon the authorizing legislation, the desires of the fishery management community and Corps' policy, the objective of the Great Lakes Fishery and Ecosystem Restoration Program is to provide fishery managers and others interested in ecosystem restoration with a planning, design, and construction tool to:

- Preserve and restore aquatic and associated riparian habitat as part of an ecosystem approach to fishery management.
- Promote the restoration of ecosystems to promote naturally reproducing fish communities based on native or high value naturalized fish populations.
- Control the introduction and/or spread of invasive aquatic species.
- Demonstrate promising innovative approaches to fishery and aquatic ecosystem problems that have not been solved by more traditional methods.
- Restore beneficial uses to Areas of Concern in the Great Lakes.
- Evaluate the success of projects in order to make future projects better.
- Assure coordination between locally implemented restoration actions and basin wide restoration plans.

### **Project Initiation and Development**

#### Overview

Coordination with signatories to the JSP indicated that the fishery management community clearly wants to have a voice in the selection of projects and the evaluation of their success. Fishery managers want to provide their views by continuing to work through the framework of committees already established with the support of the GLFC. Some suggestions included the development of committees that would review proposals and recommend projects for construction to the Corps. This approach would give fishery managers a level of control that they desire, and can generally be achieved by entering into a cooperative agreement with the GLFC (consistent with WRDA 2000 Section 506 (d)) to provide to the Corps the views of the Great Lakes fishery management community. The Corps has determined that the role of any group of fishery/natural resource managers that are coordinated with would be to exchange information regarding: the consistency of proposed projects with basin wide management and restoration plans, the likely effectiveness and efficiency of proposed projects, and how evaluation can best be achieved. The plan for initiating and developing plans outlined

below is consistent with Section 506 of WRDA 2000 and is a blend of the approach used by the Corps for the Continuing Authorities Programs, and that developed as a result of coordination with the signatories of the JSP, as outlined in Appendix B

### Project Request

A web page will be established for the Great Lakes Fishery and Ecosystem Restoration Program on either a Corps' web site or one hosted by the GLFC, Great Lakes Information Network, or other regional entity. The site will contain an on-line application form that allows potential non-Federal project sponsors to submit preliminary information regarding a particular problem or restoration plan to the Corps for consideration. The completed application would provide the information typically contained in a letter of intent for assistance from a sponsor stating its desire to participate in a solution and acknowledging its financial responsibilities in the study and project. The web site would also provide a format for the submission of information (electronic or written) detailing the problem, proposed solution, expected benefits, the importance of these benefits, how the proposed actions fit in with ecosystem restoration plans for the basin, and estimated costs. Benefits would be determined by comparing with and without project future conditions, and risk factors that may affect benefits would be discussed. Project proposals would be accepted at any time.

The responsible Corps' district would review the application (electronic or written) to determine if the proposed activity was suitable for consideration under Section 506 and if the applicant is an eligible non-Federal sponsor. For a project to be considered suitable for this authority it should: (1) Address one or more of the Program Objectives discussed earlier, (2) Involve planning, design, and construction activities where Corps' expertise would significantly aid in project completion, (3) Be consistent with Corps' policy, and (4) Have a problem and potential solution that are well documented to allow rapid movement towards implementation, or be an innovative solution to a persistent Great Lakes problem. Corps' districts would use these criteria and other factors to make a determination whether to request project specific funding to prepare a preliminary restoration plan, suggest the proposal be looked at under another authority, or find it not suitable for Corps' involvement. Initial determinations and contacts with the applicant would be funded using program coordination funds. If at any time it is determined that a project is not in the Federal interest, it will be terminated.

A non-Federal sponsor may meet the requirements of Section 221 of the Flood Control Act of 1970 (a legally constituted public body with full authority and capability to perform the terms of its agreement and to pay damages, if necessary, in the event of failure to perform), or can be a non-profit entity or private interest. If future requirements for operation, maintenance, repair, replacement and rehabilitation (OMRR&R) are anticipated, the non-Federal sponsor must be able to demonstrate a long-term capability to ensure appropriate operation and maintenance would be provided. Whether or not OMRR&R is needed, it must be clear that the proposed project would continue to function effectively throughout its planned life. It is anticipated that regional environmentally oriented non-governmental organizations, state and local governments,

and Indian Tribes and their properly designated agencies, would be among the most common non-Federal sponsors.

#### Coordination with Great Lakes Fishery Managers

After the district confirms the eligibility of the proposed project and sponsor, the district would forward the collected project information to the GLFC or their designees. The cooperative agreement to be established between the Corps and the GLFC would ask for a minimum of two face-to-face meetings of Great Lakes fishery management representatives annually to discuss proposals, studies, and project evaluations. These project review meetings would be augmented as needed by electronic communications to minimize study delays. The GLFC would build upon their existing interagency committee structure to carry out these meetings, and would provide the Corps with the results of such meetings. This would provide the means for the Corps' Great Lakes Districts and their Major Subordinate Command (MSC) to exchange information with representatives of the Great Lakes fishery management community.

As the Council of Lake Committees (CLC) represents the lake committees that have developed the fish-community objectives and deal with ongoing fishery management issues, it is expected that the GLFC would include the CLC or its representatives when considering individual projects. The CLC or their representatives would be asked to provide information regarding the consistency of the planned project with fishery restoration objectives, the likely success of the project, and areas which may need particular attention in later stages of planning and project development. If requested by the GLFC, a consultation process between the GLFC (or their representatives) and the Corps would take place prior to the project proceeding. When a project is proposed which is not fisheries oriented but is eligible based on improvements to beneficial uses, the responsible district may wish to seek alternative sources of expertise to fill the role described for the GLFC here. In these cases the GLFC or their representatives would be informed and be given the opportunity to comment on the proposed activity.

The GLFC (or their designees) would provide comments to the Corps following each project review meeting. This would allow the Corps' Great Lakes Districts and their Major Subordinate Command (MSC) to periodically prioritize work. The Corps district responsible for the study would consider GLFC comments when preparing the Preliminary Restoration Plan (PRP) and subsequent documents. As comments are received the district again may determine that the proposed project does not warrant Corps participation or that it is better suited for consideration under another Corps authority such as Section 206. Throughout the planning, design, construction and monitoring of a project, the GLFC designated committee (or its representative) would be kept informed of progress made and be given the opportunity to provide their views. Details regarding how this will be accomplished will be established during the development of an interagency agreement between the Corps and the GLFC.

#### Project Planning and Design

For proposed projects that are oriented towards fishery and ecosystem restoration on the Great Lakes and appear to be consistent with management goals for the lakes, and

Corps' policy, the district would submit a request for funding of up to \$25,000 to the MSC for initiation of a reconnaissance level planning study. This request would occur after confirming the eligibility of the proposed project and sponsor. To minimize project delays, the request may occur before receiving feedback from the GLFC designated committee. When funds are received by the district, a project delivery team would be assembled.

Project delivery teams used to complete studies and plans would be formed primarily of personnel from the participating Corps district and the non-Federal sponsor. Outside experts would be added when needed, and where projects are designed to provide fishery restoration benefits, the GLFC (CLC or other designees) would be given the opportunity to have a representative on the team. Ultimately, plan selection would be based upon comparison of expected benefits and costs between alternative plans. Where the range of alternatives available support it, cost effectiveness and incremental cost analysis would be used. However, it is recognized that some projects that may be proposed under this authority are parts of larger management plans, and the range of reasonable alternatives will be limited. This may be particularly true when dealing with control of invasive species or innovative demonstration projects.

The initial phase of the planning process would be the Reconnaissance Phase and include preparation of a Preliminary Restoration Plan. The PRP will serve as the initial decision document for determining whether continued Federal interest is warranted into the next phase. The PRP consists of a narrative outline containing available project information, a table containing pertinent financial information, and a map showing both the vicinity and immediate area of the project. The nature and scope of the ecosystem restoration features shall be outlined, the outputs projected based on a comparison of future with and without project conditions, and the importance of these outputs discussed. Known risk factors, if any, affecting output, quantity, quality and sustainability should also be considered prior to preliminary identification of a recommended plan. Coordination with a willing non-Federal sponsor is an important element of this phase. Before continuation of the study, a letter of intent from the sponsor acknowledging its financial (and other) responsibilities in the study and project (if approved) must be obtained. Prior to submittal of the PRP to the MSC for approval appropriate project information will be made available to the GLFC designated review committee for comment regarding the project's potential success and importance, and its consistency with larger scale fishery restoration plans. The views of this review committee will be forwarded to the MSC for their consideration prior to approval of the PRP.

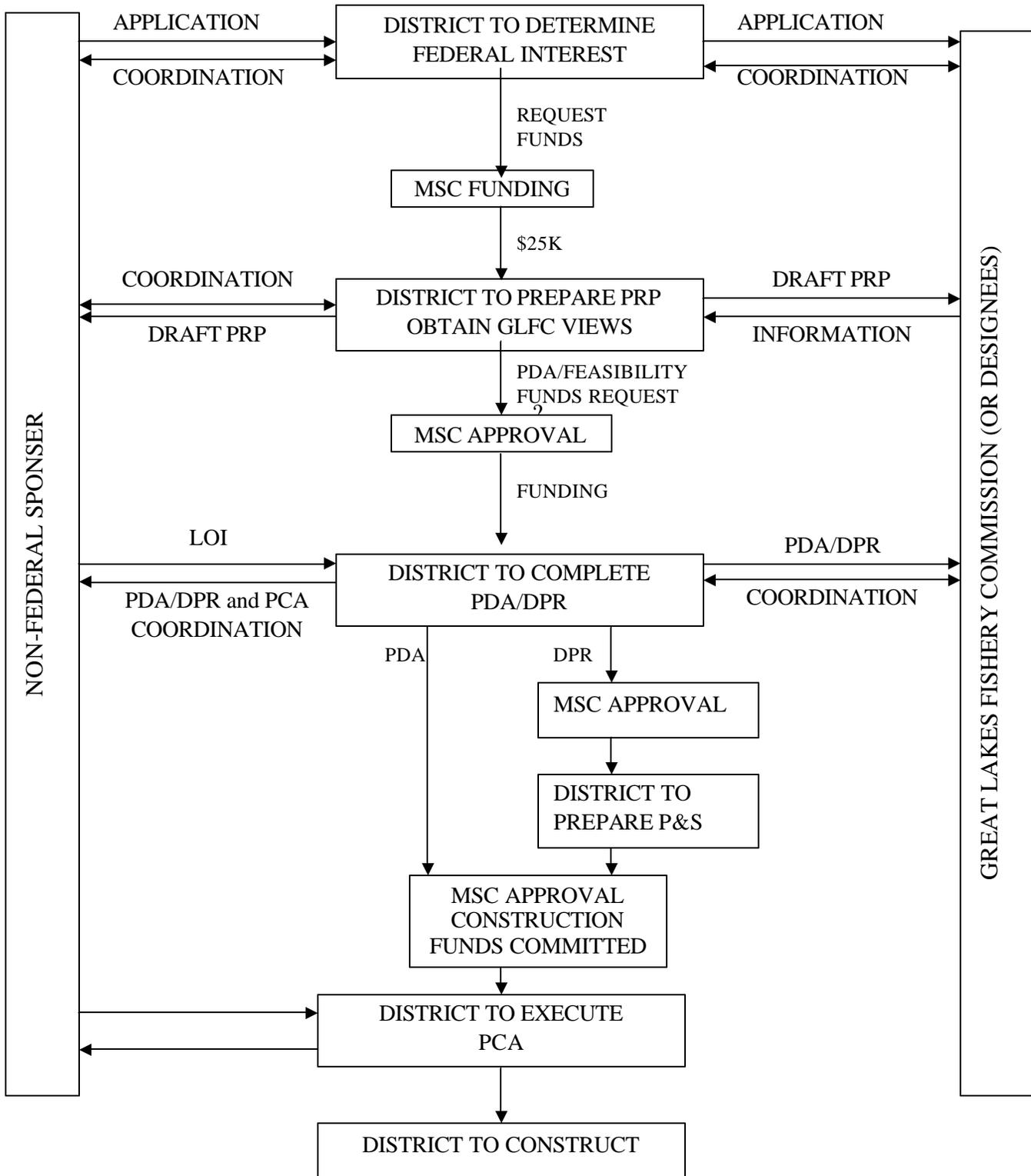
Submittal requirements for MSC approval of PRPs under Section 506 would be consistent with those developed for Sections 206 and 1135 as defined in the Great Lakes and Ohio River Division's 'Management Principles and Standard Operating Procedures for the Continuing Authorities Program' (see Appendix C). After review, resolution of comments and MSC approval, the district would request funds for detailed planning of the project based upon cost estimates contained in the PRP. In cases where total Federal project costs (through project completion) are expected to be less than \$1 million, the next phase would be a Planning Design Analysis (PDA) Report. When Federal costs are

expected to exceed \$1 million, the next step would be the preparation of a Detailed Project Report (DPR) during the feasibility phase. In infrequent cases where Federal costs may exceed \$10 million, procedures consistent with those required for specifically authorized projects contained in ER 1105-2-100 would be followed.

Detailed project planning would be initiated when resources are available. This phase (PDA or feasibility) would complete the plan formulation process, including the selection of the recommended plan, generally in accordance with guidance for planning studies specifically authorized by Congress. District staff would use a rule of reasonableness and professional judgment to perform the appropriate level of detail of analyses, and produce a quality project in a reasonable time and at a reasonable cost. Simplified evaluation procedures may be adopted for low risk/low cost projects when the consequences of failure are minimal and do not pose a threat to human life or safety.

The level of detail shall be appropriate to the scope and complexity of the recommended solution and sufficient to proceed directly into the preparation of plans and specifications. Risk and uncertainty analyses of all project outputs should be undertaken using procedures appropriate to the size and complexity of the project. The report would include a narrative of plan formulation, a description of the recommended plan, an evaluation plan, and an updated cost estimate and schedule. Plan formulation activities should include an examination of all reasonable alternatives for effectiveness and efficiency. Decisions about design and benefits will be based on generally accepted quantitative methods and best professional judgment. When necessary, the professional judgment provided by Corps employees would be supplemented by other scientists from the fishery management community, GLFC, CLC, or other sources. All required National Environmental Policy Act (NEPA) documents would be completed during the PDA/feasibility phase, and water quality certification obtained where needed (to the extent consistent with state permitting authorities). The non-Federal sponsor would be provided a copy of the Project Cooperation Agreement (PCA), and negotiations between the district and the sponsor should be substantively complete prior to completion of the phase. When the planning report has been drafted the Corps would make copies available to the GLFC, CLC, their representatives or others to assure that the plan as formulated is consistent with larger scale restoration plans and the project as planned would be complete, effective, efficient, and acceptable. The district would use any information obtained to revise the plan or seek additional technical review where necessary.

SECTION 506 PROJECT DEVELOPMENT PROCESS  
 (For Projects not exceeding \$10M in Federal Costs)



At the completion of the PDA or DPR the planning portion of the report would undergo a Corps' independent technical review (ITR) to assure appropriate planning standards have been met. The ITR would be consistent with the guidance provided in the MSC Quality Assurance Standard Operating Procedures (SOP) on conducting such activities. ITR teams would generally consist of personnel from the Corps district leading the study, supplemented by outside experts as needed. For projects where Federal costs are expected to exceed \$1M, a MSC Regional Technical Specialist would lead the ITR team. After resolution of ITR comments, the district would provide the PDA/DPR to the non-Federal sponsor and ask for a letter of intent (LOI) acknowledging their financial and other responsibilities in the study and project (if approved) and their willingness and ability to execute the PCA.

As part of a PDA Phase, design activities would be completed and plans and specifications prepared without seeking additional approvals. When the plans and specifications are completed, costs are determined to an accuracy of +/-10%, PCA coordination with the non-Federal sponsor is substantively complete, and NEPA documentation, appropriate ITR/BCOE and other reviews and certifications are complete, a submittal package as described in the MSC standard operation procedures for the CAP would be prepared and forwarded to the MSC for project approval.

Where the Federal share of the total project cost is expected to exceed \$1 million and a Detailed Project Report (DPR) is being prepared, additional review and approval is required prior to initiating development of plans and specifications for the construction contract. During this feasibility phase alternatives would be developed and evaluated, and a final project plan and design selected. Decision documentation (DPR) would be prepared following the guidance covering feasibility phase report content in ER 1105-2-100. NEPA documentation would also be completed and regulatory requirements met to the extent possible. A real estate plan and project evaluation plan would be developed, ITR completed, and the DPR made available for GLFC, public and agency review. A submittal package as described in the MSC Standard Operating Procedures for CAP would be prepared and forwarded to the MSC for approval.

After MSC approval of the DPR and the receipt of funding, the responsible district would proceed with preparation of Plans and Specifications (P&S) for a construction contract. This phase consists of all technical and procurement activities after decision document approval. The activities conducted after receipt of the HQUSACE initial plans and specifications work allowance and before construction are considered to be part of the Plans and Specifications phase. These funds are included in the total project implementation cost.

In cases where the total Federal cost of the project is expected to exceed \$10 million, the procedure for specifically authorized projects will be followed. These projects will be provided to Headquarters/ASA(CW) for review and approval.

### Evaluation Plans

Section 506(c)(3) specifically requires the development of a program to evaluate the success of the projects in meeting fishery and ecosystem restoration goals. Evaluation plans would be developed during project planning and be a part of the PDA, DPR or feasibility report. These plans would be developed in consultation with the non-Federal sponsor, and the GLFC (CLC or their designees) if they wish to participate. Evaluation activities would be considered part of project costs and cost shared accordingly. The primary purpose of monitoring and evaluation is to compile information that would assist in making future decisions regarding investments at the particular project site and elsewhere in the Great Lakes. As such, the level of monitoring and evaluation required would vary with the type of project. Innovative, complex projects may require extensive evaluation, particularly if the approach may be applied elsewhere. Small, simple projects using techniques that are well developed may require little monitoring and evaluation. Partnering with other Federal, state, and academic institutions is encouraged as a way to reduce monitoring/evaluation costs and improve quality.

A monitoring and evaluation component of all projects will include at least the following:

- A concise statement of the goals, and to the extent practical, quantifiable objectives (or project benefits).
- Implementation monitoring that confirms that the restoration activities were completed as designed.
- An explanation of the criteria used to determine the extent of monitoring and evaluation proposed.
- A description of the monitoring/evaluation plan as proposed.
- An estimate of the cost of monitoring and evaluation activities.

In general, it is anticipated that monitoring/evaluation would not exceed three years or 1% of total project costs. Any proposed exceptions to these guidelines must be coordinated with and approved by HQUSACE. These exceptions may occur in cases where more extensive monitoring is warranted to provide information critical to future decision-making. All evaluation plans should include periodic progress reports and a final evaluation report to be prepared for submittal to the Corps with subsequent distribution to the GLFC, non-Federal Sponsor, and appropriate natural resources agencies.

Monitoring and evaluation activities would be carried out as defined in the PDA, DPR or feasibility report. Monitoring/evaluation plans could be modified with the agreement of the Corps and the non-Federal sponsor. The GLFC (CLC or other designated representative) would be informed of any significant changes in the overall plan. Modifications to the plan that result in changes in cost would be reflected in the financial closeout of the project. If the Corps is to carry out monitoring/evaluation activities the non-Federal share shall be provided at the beginning of each fiscal year in which work is to occur.

### Project Cooperation Agreement

The development and approval of a model Project Cooperation Agreement (PCA), and the delegation of appropriate approval and execution authorities are critical to the efficient execution of the GLFER Program. It is anticipated that a proposed model PCA would be submitted along with the first project proposed for construction.

### Construction

Once construction funds are committed, the PCA has been executed, and real estate certified, the district can advertise the project. After construction is completed, the non-Federal sponsor would be provided with an Operation and Maintenance manual. Construction contracts, requests for additional construction funds, and completion reports would be handled as outlined in the CAP SOP for Environmental Authorities in Appendix C or in place at the time of the action.

### Cost Sharing

Section 506 defines the Federal share of the cost of planning, design, construction and evaluation of a project at 65%. The remaining 35% is assigned to the non-Federal sponsor. For the purpose of cost sharing, project costs under Section 506 include everything from the beginning of the PRP (reconnaissance phase) through the completion of monitoring and turning the project over to the non-Federal sponsor. The sponsor will be credited for the value of any lands, easements, rights-of-way, relocations, or dredged material disposal areas (LERRDs) provided for carrying out the project. The ASA (CW) will review and approve any credits the non-Federal sponsor may receive for services, materials, supplies, or other in-kind contributions including monitoring. Creditable in-kind contributions can only occur after the non-Federal sponsor and the Corps enter into a cost sharing agreement. Credits for in-kind services are limited to the lesser of 17.5% of the total project cost, or the remaining non-Federal obligation after the LERRDs credit has been applied to the 35% non-Federal share. The project would be initially fully federally funded but subject to 35% cost recovery from the non-Federal sponsor when the PCA is signed. Payment schedules would be developed consistent with current guidance for the Section 206 and 1135 programs.

For projects in urban areas where land values are high, a non-Federal sponsor may agree to waive reimbursement for the value of LERRD that exceeds its share of total project costs. The amount of LERRD value for which reimbursement is waived by the non-Federal sponsor shall not be included in total projects costs for cost sharing purposes. Notwithstanding that a non-Federal sponsor may agree to waive reimbursement for the value of LERRDs as stated above, compliance with the following principles must continue:

- a. The project must be formulated so that only the lands necessary to implement the project are required for the project;
- b. The estimated value of all project LERRD must be considered in comparison of alternatives for plan selection;

- c. The non-Federal sponsor must comply with all applicable provisions of PL 91-646 (as amended), and implementing regulations, for all LERRD that it must acquire to implement the project; and
- d. The project decision document must document that the non-Federal sponsor has voluntarily agreed to waive reimbursement for the value of project LERRD as stated above, and the Project Cooperation Agreement (PCA) must be appropriately revised and approved.

#### Operations and Maintenance

The operation, maintenance, repair, rehabilitation, and replacement of projects carried out under this section shall be a non-Federal responsibility. Non-Federal sponsors must demonstrate that they have the capability to meet this responsibility over the life of the project.

#### Approval Authorities

Approval authorities would be similar to those for existing CAP studies in the MSC. The district could approve Project Management Plans, Fact Sheets, and execute approved Project Cooperation Agreements (PCAs). The MSC would approve Preliminary Restoration Plans, Planning Design Analysis (PDA) documentation, Detailed Project Reports, PCAs consistent with the model, and projects that are in compliance with policy. ASA(CW) would approve Project Cooperation Agreements that deviate from the model, projects that exceed \$10 million in Federal costs, and projects that are not in compliance with policy or VTC guidance.

#### Policy Compliance and Quality Assurance

Technical review, policy compliance and quality control are district responsibilities. The quality assurance programs and Quality Management Plans (QMP) applicable to the Continuing Authorities Programs of both the division and district would cover the documents produced under this authority. At the division level, process and procedures will be monitored and/or audited as outlined in the division QMP. Periodic audits will be convened as needed and as scheduled consistent with Quality Assurance Audits.

#### Post Construction Modifications

If a completed project is found not to be operating as originally intended, the Division Commander may initiate a federally funded reconnaissance study of the project. This report would serve as the decision document regarding undertaking corrections as addressed in ER 1165-2-119 and outlined in the CAP standard operating procedures. Modifications of a constructed project that are beyond the scope of design deficiencies or operations and maintenance activities may be proposed as a new project under Section 506 or other authorities. These proposed modifications would be evaluated using the same procedures described above to determine if there is a Federal interest in making the modification. Modifications proposed that involved no Federal funding would require the approval of the Corps and all appropriate permits.

## Communication Plan

Communications and outreach will play a large role in the success of the Great Lakes Fishery and Ecosystem Restoration (GLFER) Program. The geographic scope of GLFER, the wide variety of potential projects, and the myriad of agencies with fishery management authority on the Great Lakes suggests the coordination needed, and perhaps most importantly, the expectations of the state and tribal resource management agencies will require a different communications approach than may be common to other Corps programs. As partners in this program are expected to play a very active role, successful communication efforts must take into account the past relationship between state, tribal, and Federal agencies operating in the Great Lakes, and the emphasis the agencies have historically placed on their primary management responsibility.

To accompany the Support Plan, there will be developed a Communications Strategy. The Great Lakes Fishery Commission, in partnership with the Corps will develop this strategy. It is envisioned that the Corps and its partners will need to communicate with several audiences as the program is implemented. For instance, some of the key audiences include:

- Elected officials so that they are apprised of restoration efforts;
- Fishery management partners (state and tribal agencies), to build awareness of the possibilities offered by this program and to develop restoration partnerships;
- Stakeholders, to communicate important fishery restoration initiatives carried out by the Corps and its partners; and
- Cities and local governments, to inform them of how this program might work to improve their communities.

This Communications Strategy will build upon briefings and meetings conducted during the development of the Support Plan. The following activities would be conducted during the development of the communications plan:

- Collaboration between the GLFC and the Corps on key messages, strategies, and implementation of communication tactics;
- Development of a target audience contact list and media lists;
- Development of a readily identifiable look to communication materials, with distinctive logo, stationery, and format;
- Identification of specific examples of types of projects that would be eligible for funding;
- Completion of face-to-face information meetings with Great Lakes fishery managers, including signatories to *A Joint Strategic Plan for Management of the Great Lakes Fisheries*;
- Development of a Web page and link from the GLFC, COE or other regional websites;
- Research and message posting on relevant List-serves (e.g., Great Lakes Information Network).

## **Program Management Responsibilities**

### **Coordination**

A program management team would be responsible for overseeing the activities of the Buffalo, Chicago, and Detroit Districts to facilitate the Corps in being an active participant in the full range of Great Lakes fishery and ecosystem restoration initiatives. This team would consist of five representatives. There will be one member from each of the Great Lakes Districts and the MSC, and a Corps program coordinator. It is critical to integrate the activities of complementary Great Lakes programs managed by Federal, regional and international entities, and large private foundations to maximize the benefits of projects constructed under this program and to take advantage of any synergy that can be created between agencies in order to leverage limited funds. Assuming adequate funding is available, coordination funds should support the management team to at least do the following: (A) Participate in and periodically report to the GLFC Lake Committees and the Council of Lake Committees, (B) Meet, attend workshops, or otherwise communicate with administrators of other major programs that have direct application to the Great Lakes fisheries and ecosystem to develop collaborative projects and coordinated activities, and (C) Consult with the GLFC designated representatives of the signatories of the Joint Strategic Plan for the Management of the Great Lakes Fisheries on at least an annual basis to reassess program projects and priorities. Many of these activities would be the responsibility of the program coordinator. Due to the proximity of the GLFC (the primary representatives of the signatories to the Joint Strategic Plan) and the Great Lakes Commission to Detroit, the program coordinator would be stationed in the Detroit District.

### **Financial Management -**

Coordination funds for the Great Lakes Fishery and Ecosystem Restoration Program will be distributed early in each fiscal year by the MSC to the Great Lakes Districts from the program amount set aside by HQUSACE. These funds would be used to support early project related activities (those occurring before PRP funding), and general program coordination and support activities. The program will follow the reprogramming guidelines and thresholds established in EC 11-2-189 and other legislative directives. The District Commander is responsible for monitoring funds as described in the MSC CAP standard operating procedures.

HQUSACE will determine the project funds available at the beginning of the fiscal year. Funds will be allotted by study and project to the district based on the request of the MSC Commander. HQUSACE will commit construction funds based on the schedule provided by the MSC and subject to available/anticipated funding. The MSC Commander must receive commitment of construction funds prior to execution of the project cooperation agreement.

### **Reporting Requirements**

The program coordinator will prepare an annual report that summarizes coordination activities, studies initiated, studies completed, construction activities, and

evaluation efforts. The report will include a fiscal summary for the program with projected future financial requirements, an evaluation of the accomplishments of the overall program, and any feedback received from others regarding program operations. The report will be prepared and provided by the lead district to the MSC for approval and submittal to HQUSACE. The program coordinator will also provide a copy of the approved report to the GLFC, CLC and other interested organizations, and be available to brief these organizations on the progress of the program.

#### Change Management

This Support Plan is expected to change over time as the Great Lakes Fishery and Ecosystem Restoration Program matures and the Corps' partnership with Great Lakes fishery interests develops. As this program would be generally operated like a Continuing Authorities Program (CAP) activity, future changes in CAP will be reviewed for applicability to this program. Applicable changes in the CAP SOP that occur to improve operating efficiencies or respond to changes in the organization of the Corps will be reflected in this program. Specific changes to the Great Lakes Fishery and Ecosystem Restoration Program may require modification of the Support Plan. Such modification will be undertaken when necessary, and approved by the MSC.

#### Administration/Coordination Costs

The following activities have been identified as Administration/Coordination activities suitable for funding under the Coordination Account for Section 506 of the Water Resources Development Act of 2000. Coordination Account activities for this program would be funded at \$50,000 annually, and would be fully funded by the Federal government and not subject to the cost sharing provisions of Section 506. Administration and coordination costs for this program would include such things as:

- (1) Non-project specific activities such as participation in regional meetings, professional conferences, environmental sustainability conferences and interagency coordination meetings including those sponsored by the Great Lakes Fishery Trust, the Great Lakes Collaboration, the Great Lakes Fishery Commission, the Great Lakes Commission, the International Joint Commission, etc. Collaboration with other programs participating in ecological restoration efforts on the Great Lakes is essential to the success of this program.
- (2) Development and negotiation of a programmatic cooperative agreement with the Great Lakes Fishery Commission (GLFC) to guide proposal evaluation activities and other interactions with the community of Great Lakes fishery managers. Development of this agreement will be a significant task early in the program. Periodic review and modification of this interagency agreement and the model project cooperation agreement in subsequent years is anticipated and would also be suitable for coordination account funding. This

agreement should remain a “living document” and its evolution should reflect the development of the Corps’ relationship with the Great Lakes community that the program is intended to serve.

- (3) Briefing and interaction with a GLFER interagency proposal evaluation team established by the GLFC under the Council of Lakes Committee (CLC). CLC meets twice a year.
- (4) Initial communications, meetings and site visits for proposed /prospective projects. This activity would include meeting with potential project sponsors to review site conditions and discuss potential restoration opportunities until a potential Federal interest is identified, and a decision is made by the non-Federal sponsor and the Corps to initiate a formal study.
- (5) General program administration, responding to data calls, responding to inquiries from outside the Corps, budgeting (P2 and other activities), periodic reporting as required by Section 506, and electronic posting of program activities and application requirements.

#### Project Funding and Prioritization

Project specific funding would be determined as a project develops. Funding for individual projects would be \$25,000 for Reconnaissance Phase activities.

Priorities for funding of projects would be determined considering the following factors (in random order):

- The availability of cost sharing partnerships.
- The availability of required real estate.
- The importance placed on the project by fishery management agencies.
- How close a project is to completion of construction.
- How close a study is to completion of the current phase.
- Non-Federal sponsor request for reimbursement for LERRD value in excess of the cost sharing requirement.
- Project cost effectiveness.

The MSC will consider these factors when determining how to allocate available funds between projects.



