
Name of Organization: USACE

Type of Organization: Federal Agency

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Project Title: Development of a Database for Great Lakes Sediment Data

Project Category: Contaminated Sediments

Rank by Organization (if applicable): 1

Total Funding Requested (\$): 137,000 **Project Duration:** 2 Years

Abstract:

The U.S. Army Corps of Engineers and the Environmental Protection Agency's Region 5 jointly developed the Fully Integrated Environmental Local Decision Support (FIELDS) system in 1998 for storing and exchanging sediment data. The FIELDS system is actually a system of seven linked databases developed by a Corps contractor who evaluated typical Great Lakes sediment testing projects and used that data to develop the databases. The FIELDS system allows precise input of locational information for linking with a Geographic Information System (GIS). Data analysis can focus on an individual harbor or can allow comparison of several harbors on the Great Lakes.

The proposed effort would update the Corps and Great Lakes Commission to the latest version of the FIELDS system in cooperation with Region V of the EPA. The Corps would also partner with the Wisconsin Department of Natural Resources (WDNR), which is currently compiling copies of all data reports available for the Fox River and Green Bay. The sediment data from the WDNR's Fox River database would be converted to the FIELDS system, allowing it to merge with the Corps' data currently in the system. Additional reports would be evaluated and as many as 100,000 records would be added to the database (a record would be defined as an individual chemical or physical measurements).

Concurrent with development of the updated FIELDS database a centralized web page would be created for hosting the FIELDS data. Efforts would include development of a clickable map showing the AOC and allowing the execution of some simple queries (i.e. metals concentrations or PCB concentrations). The effort would focus on two primary Areas of Concern, Fox River/Green Bay and Milwaukee, although all FIELDS data currently in the database would be made available over the internet.

Geographic Areas Affected by the Project

States:

<input type="checkbox"/>	Illinois	<input type="checkbox"/>	New York
<input type="checkbox"/>	Indiana	<input type="checkbox"/>	Pennsylvania
<input checked="" type="checkbox"/>	Michigan	<input checked="" type="checkbox"/>	Wisconsin
<input checked="" type="checkbox"/>	Minnesota	<input type="checkbox"/>	Ohio

Lakes:

<input checked="" type="checkbox"/>	Superior	<input checked="" type="checkbox"/>	Erie
<input checked="" type="checkbox"/>	Huron	<input type="checkbox"/>	Ontario
<input checked="" type="checkbox"/>	Michigan	<input type="checkbox"/>	All Lakes

Geographic Initiatives:

<input type="checkbox"/>	Greater Chicago	<input type="checkbox"/>	NE Ohio	<input type="checkbox"/>	NW Indiana	<input checked="" type="checkbox"/>	SE Michigan	<input checked="" type="checkbox"/>	Lake St. Clair
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Primary Affected Area of Concern: All AOCs

Other Affected Areas of Concern:

For Habitat Projects Only:

Primary Affected Biodiversity Investment Area: Not Applicable

Other Affected Biodiversity Investment Areas:

Problem Statement:

RAP Coordinators and Regulators often complain of a lack of a centralized database for sediment data information that would allow them to track the level and extent of in-place pollutants. The problem is caused by the fact that dozens of State, Federal and private interests are collecting data. The data reports are typically part of the "gray literature" which other agencies, and the public, are not aware of. Furthermore data is typically not available in digitized format, units of measurement vary and locational data is imprecise.

There currently exists a database for sediment data that was developed by Region V of the Environmental Protection Agency and the Detroit District of the U.S. Army Corps of Engineers. The Fully Integrated Environmental Local Decision Support (FIELDS) data is stored in both dBase and Oracle formats, and plans call for the system to convert to Equis software in the near future. The FIELDS database allows users to query the database for a variety of topics and map that data using Arcview or similar GIS packages. Base maps currently being used include Corps of Engineers design files, digital orthophotos, digital raster graphics of USGS topographic maps, and MIRIS base maps. The recent release of digital NOAA charts should greatly improve mapping capabilities for Great Lakes Areas of Concern.

When the initial stages of the database were completed in 1998 the database contained 121 sampling projects sponsored by the Corps of Engineers, Michigan Department of Natural Resources, the EPA, the Ontario Ministry of Environment, and others. At that time the database included sediment data for several Great Lakes Areas of Concern, including Saginaw River and Bay, the Detroit River, the St. Clair River, the Rouge River, the St. Marys River, and the Clinton River. The EPA has also continued to develop the FIELDS database and has modified and expanded the capabilities of the system to address particular agency concerns and problems. Unfortunately, when funding expired for the effort there was no designated long-term caretaker for the database. Both agencies continued populating the database and the Corps' Detroit District has added data for Areas of Concern including the Duluth-Superior Harbor, Milwaukee Harbor, and the Fox River/Green Bay. Concurrently the Wisconsin Department of Natural Resources has been developing a separate system for compiling data from the Fox River and Green Bay. The Fox River database was developed by a contractor for the Wisconsin Department of Natural Resources and contains over 300,000 data points from 24 different sampling events, studies, or investigations. The WDNR's Fox River database does not contain any of the monitoring data conducted by the Corps over the last twenty years and does not allow comparison among different AOCs.

Proposed Work Outcome:

There exists a need for a central repository of sediment data for the RAP sites that would provide the RAP Coordinators and the public a way to view and evaluate sediment data across AOCs and even across Lakes. Unfortunately the FIELDS data is not available on a web site, and the data from many State and Federal agencies have yet to be included. The Detroit District and Region V are however using the FIELDS system and have continued to input additional data. The Great

Lakes Commission would provide a potential repository for this information in their role as the lead on the Great Lakes Dredging Team.

The Corps would initially coordinate with GLNPO, Region V, the Great Lakes Commission, and the WDNR to get all agencies up to date with the latest version of FIELDS. This would likely involve a workshop held in Chicago. Partners would identify priorities for data entry. All agencies would be asked to provide for the meeting a list of sampling projects in the AOCs. WDNR personnel would provide information on the Fox River database. Based on the workshop, the Detroit District would develop a scope of work for a contractor to convert the Fox River database to the FIELDS system. A second contract would input additional data reports not currently digitized.

Concurrently the Corps would pursue creating a web page for the database. A Contractor would develop a clickable map, which allows the users to focus on a specific region or AOC and pose simple queries. The query results would be plotted on the user's screen. The Contractor would coordinate with RAP Coordinators to help identify appropriate queries.

Project Milestones:

Dates:

Exchange Data/Define Roles	10/2000
Upgrade all Partners to FIELDS 1.5/Train	03/2001
Compile reports to be added to database	05/2001
Develop Data Input Screen for FIELDS	09/2001
Review Contractor Submittals	01/2002
Web-based Sedmnt Data for Milw Online	04/2002
Current FIELDS database on-line/Training	06/2002
Project End	08/2002

Project Addresses Environmental Justice

If So, Description of How:

This project does not have a specific environmental justice component.

Project Addresses Education/Outreach

If So, Description of How:

Links could be established to the sediment data web page from the Corps' Web pages and the GLNPO and Region V web page. The partners would agree to operate and maintain the web site for a minimum of five years.

Project Budget:

	Federal Share Requested (\$)	Applicant's Share (\$)
Personnel:	87,000	80,000
Fringe:	0	0
Travel:	4,000	6,000
Equipment:	0	0
Supplies:	0	0
Contracts:	46,000	59,000
Construction:	0	0
Other:	0	0
Total Direct Costs:	137,000	145,000
Indirect Costs:	0	0
Total:	137,000	145,000
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

Under Authority of Section 401 of the Water Resources Development Act of 1990 the Corps can match non-Federal funds for the engineering and technical support to the development of Remedial Action Plans. Therefore the Detroit District would apply for funds to match the contribution of the Wisconsin Department of Natural Resources. In addition, the Corps' Detroit District would contribute \$25,000 per year toward the effort (\$50,000 total) plus the cost to acquire the Equis software. GLNPO's contribution would be approximately 48% of the total project cost.

Description of Collaboration/Community Based Support:

Partners in this program include:

Army Corps of Engineers - Detroit District
Great Lakes Commission
Wisconsin Department of Natural Resources
EPA - Region V