Cook Inlet Information Management and Monitoring System **FY2001 Request: $315,000**
Reference No: 32421

AP/AL: Appropriation
Project Type: Information Systems
Category: Health/Human Services
Location: Statewide
Contact: Tom Chapple
House District: Statewide (HD 1-40)
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Estimated Project Dates: 07/01/2000 - 06/30/2005

Brief Summary and Statement of Need:
The purpose of this project is to enhance and expand upon the Exxon Valdez Oil Spill Trustee Council funded project entitled "Cook Inlet Information Management & Monitoring System (CIIMMS)". The project coordinates development and implementation of tools to improve data categorization and search functions.

Funding:	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	Total
Fed Rcpts	$315,000						$315,000
Total:	$315,000	$0	$0	$0	$0	$0	$315,000

☐ State Match Required ☑ One-Time Project ☐ Phased - new ☐ Phased - underway ☐ On-Going
0% = Minimum State Match % Required ☐ Amendment ☐ Mental Health Bill

Operating & Maintenance Costs:

	Amount	Staff
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	
Totals:	0	0

Additional Information / Prior Funding History:

Project Description/Justification:
This is a new project request for FY2001 seeking authorization to expend federal funds, requiring a 40% match. Match funding will be obtained from various sources including in-kind services from local water quality projects and Exxon Valdez Oil Spill (EVOS) Trustee Council funded projects . The purpose of this two-year capital improvement project is to expand the focus for establishing a statewide information management system, which is based on an extensive needs assessment and includes a broad base of user support. This project will add three specific geographic regions. Long-term maintenance and operation of the system, once established, becomes an integral function of the agency's routine operation. The project is based upon the design principles from the EVOS Trustee Council funded project entitled "Cook Inlet Information Management & Monitoring System (CIIMMS)", which was modeled after the successful Chesapeake Bay Information Management System (http://www.chesapeakebay.net/).

The Chesapeake Bay system is premised on the recognition that critical resource management issues facing a multi-state-bounded watershed are so intertwined, that a comprehensive, integrated ecosystem and community-based approach was necessary to solve complex resource management issues. Local governments, local citizens and industry participate with state and federal government programs to integrate different types of data and resolve complex analyses. A workshop was sponsored by the Chesapeake Bay Program to help design an integrated, accessible information management system. Over 80 individuals from Federal, State and local government agencies, academic institutions, nonprofit organizations, citizens groups, and Chesapeake Bay Program consultants and contractors participated in the workshop. General recommendations called for:

· Promoting an Executive Council Directive on data and information management.
· All data must be accompanied by standardized metadata (information about information).

· Reach an agreement among data providers on developing data standards.
· As much information and data as is feasible should be available over the Internet.
· The overall system should be appropriate for the needs of a diverse user group and diverse data formats.
· The system must allow users to query information that is both spatial/geographic and textual.
· It is imperative that the system be easy to use for the full-range of data users.
· The system should be a hybrid system that is part centralized, part decentralized.

The vision for CIIMMS develops a comprehensive information system for the Cook Inlet watershed based on the latest Internet technologies that enables a wide range of users to contribute, identify, share and access valuable information about the watershed and related activities. This readily scalable, statewide information management & monitoring system vision applied to other geographic areas of the state is dependent upon a broad base of users and user groups within the geographic area of interest. Currently, the only maps served through the system are those already created and available through other web sites. A long-term (3-4 year) need identified through an extensive user survey was the development of a public, on-line, mapping capability that has bandwidth implications.

This project provides for expansion to a statewide information management & monitoring system. It will add three specific geographic regions: the Interior Fairbanks region covering an approximate area bounded by Denali Park to the South, the Yukon River to the North, the Forty Mile River to the East and Galena to the West; the Valdez/Cordova and Copper River areas; and the northern Southeast Panhandle. The project continues with the collaborative partnership established between Department of Environmental Conservation (DEC) and the Department of Natural Resources, along with many other state and federal agencies, such as: the Alaska Department of Fish & Game, US Geological Survey, US Forest Service, US Environmental Protection Agency, and the University of Alaska in addition to a variety of local government and non-profit organizations and private industry. These collaborative relationships are essential to expand upon and improve the Cook Inlet architecture for a broadened statewide application.

This project establishes independent IIS (Internet) and SQL (database) servers that manage information across the state. It completes the acquisition of software essential for automation of information search capabilities and improves data integration through WEB-enabling agency resource databases that focus beyond Cook Inlet. The project coordinates the development and implementation of tools to improve data categorization and search functions across the state, while maintaining adherence to existing Alaska Geospatial Data Clearinghouse (AGDC) and Federal Geospatial Data Clearinghouse (FGDC) standards, whenever appropriate.

An important component of expanding statewide implementation is to produce tools that enable a unified approach to information management. This project specifically helps users contribute, identify, share and access resource management and environmental data by allowing for its discovery within a distributed ownership and maintenance architecture. The statewide system serves as a portal to search for and access information owned and managed by its originator. The system points the user to the "gatekeeper" of the information. Data distribution is within the guidelines and under direct control of the data originator. Information search features provide information on any conditions and limitations to data access. The data originator serves as the "gatekeeper" to the data and defines the rules by which data may be accessed. The original prototype developed one approach to the "gatekeeper" concept for the Alaska Department of Fish & Game (ADFG). Access to anadromous fish stream geospatial data requires the on-line identification of the user and data application prior to downloading ADFG data over the Internet.

Several high priority water quality datasets which are candidates for data discovery, access, and analysis through the system are maintained by ADEC, ADF&G, EPA, US Geological Survey (USGS), Cook Inlet Aquaculture Association, Minerals Management Services (MMS), Cook Inlet Regional Citizen's Advisory Council, and Cook Inlet Keeper. These datasets focus on ground water, surface water, discharge, and biological resources.

The prototype focuses on the Kenai River watershed and is under public review. Second year EVOS (FFY00) funding would allow the EVOS prototype to expand to the entire Cook Inlet watershed and improve and expand upon its functionality. Blue Angel Technologies Software used by the statewide information management system was partially purchased through EVOS and provides the capability to search multiple web servers simultaneously (web harvest) and provide access to the information. This software will be used to automate the harvest of strategic information from designated web servers across the target areas of expansion, demonstrated successfully on the prototype. The harvested resource management and environmental information will be catalogued and stored on the SQL server to expedite the user's search for information.

The WEB-based information management system is hosted on shared DEC, IIS and SQL servers. This project hosts an expanded information management system on independent IIS and SQL servers. Independent servers are needed due to anticipated traffic from multiple and simultaneous search queries, to reduce conflicts with DEC intranet database applications. The project seeks to establish more widely accepted and simpler ways to discover and acquire information through consistent application of metatags (specific elements of information) and on-line entry of metadata (information about information).

This is a new systems development project and upgrade/enhancement to the department's existing capabilities. It broadens and expands the system to handle an increasingly larger, statewide focus. It builds and expands upon what EVOS funding initiated.

Specific hardware, software, consulting services, or other items to be purchased with this expenditure are:
- IBM compatible, Intel processor SQL Server, disk space storage and software licensing, systems software and applications training;
- IBM compatible, Intel processor IIS WEB Server and systems software and training;
- Complete the purchase of Blue Angel Technologies MetaStar Suite of Software for Web applications development;
- Consulting services to configure Blue Angel software for specialized development applications; and
- Contractual services to convert existing water-related databases for WEB-enablement.

This project encourages public participation by communities that may be affected by development activities and the general public who are affected by the decisions regarding how projects are permitted. It also encourages participation of community groups and the public at large to the maximum extent practicable. The project provides the public access to clear, comprehensive water quality and other resource information for their geographic location in a timely manner. It enhances the public's right-to-know about water quality and other resource issues by creating a platform to integrate disparate, but geographically related information.

This project enhances service to the public by accelerating and better coordinating the water quality permitting process. It expedites information retrieval for permitting decisions and expedites search and access to resource information, within and between agencies, for more effective evaluation of cumulative impacts. A more efficient permit review process reduces the applicant's development costs, allowing for a greater return on their investment and reducing the cost of goods and services to the general public.

This project is consistent with the Department's long-range technology plans by:
- Accelerating the implementation of an SQL database server and departmental WEB server;
- Enhancing the Department's ability to manage geographic information with tools specifically designed to accomplish the task; and
- Integrating the permit process through creation of a platform to consolidate disparate data sets and translate these data sets into useful, resource management decision-making information.

The Administration's technology goals are addressed by this project through:
- Improving public access to information though the use of integration and translation tools that make information useable;
- Making readily available information accessible to the public through the World Wide Web is an improvement to Alaska's widely dispersed population over long distances and remote locations;
- Training at both the agency level and the community level assures the knowledge to use the tools;
- Maximizing service to the public by making water quality information readily available in a useable format, assuring the public's right-to-know and allowing the public to make informed decisions regarding how a permit applicants activity may impact their community;
- Reducing time by agency staff to fulfilling information requests;
- Increasing time for analysis of impacts to water quality, mitigation alternatives and effective monitoring, thereby optimizing government services;
- Use of the Internet to communicate information and make it accessible to the public; and
- Creating a departmental information infrastructure with Internet access stimulates the need for vendor support from the private sector and creates a public access platform that serves to fuel a locally driven engine to generate additional capabilities at the community level.

It is anticipated that with the successful implementation of this project, other public resource agencies may want to model

its capabilities after they have time to evaluate its utility. Additionally, the improved access to water quality and other resource information is not limited to the general public, but will be available to any other agency involved in resource management and permitting. This will serve to expedite that agency's review, improve its decision-making process, and help to eliminate costly duplication of effort by identifying the availability of a variety of processed information in useful formats. It will reduce redundant data processing between agencies.

If the project is not approved the resource agencies will continue to manage data using manual processing techniques that serve to retard the permit decision-making process. Data redundancy will continue to drain resources. Data will remain "undiscoverable", and possess minimum usability. Data will remain in formats not useable by either the public or agencies to make informed decisions because it is too costly or untimely to translate into a useful format. Information will be generated on a critical demand basis to the extent existing resources are capable, communicated in a fragmentary fashion, and in an untimely manner. Permitting decisions at both the local level and the agency level will continue to be made with incomplete information and in a manner that does not fully recognize the cumulative impacts associated with the permitting action.