FY15 PROJECT PROPOSAL SUMMARY PAGE

New Project

Project Title: Supplemental Data Management Support for EVOSTC Monitoring Programs

Project Period: February 1, 2015 – January 31, 2017

Primary Investigator(s): Rob Bochenek, Alaska Ocean Observing System (AOOS)

Abstract: The EVOSTC Long Term Monitoring (LTM) and Prince William Sound Herring Research and Monitoring (PWS Herring) programs propose an ambitious monitoring and research agenda. These efforts could facilitate a more thorough understanding of the effects of the oil spill if the new data and information on the spill-affected ecosystems are effectively managed and collated along with historical data on these systems. Based on feedback acquired from the EVOSTC Science Panel and staff, we propose a supplemental data management effort to execute on major tasks that have been deemed of high importance but are not being addressed by existing data management projects supporting EVOSTC programs (Projects 1412011D and 1412011C). This project proposes to increase the data management support for both LTM and PWS Herring programs by establishing a data coordinator position to improve metadata quality and best practices. Investigators also propose to process primary data into preservation-ready formats ensuring long term preservation of the data resource. Furthermore, this project will develop mechanisms to transfer and integrate LTM and PWS Herring program data products into DataONE, National Oceanographic Data Center and the United States Geological Survey Ocean Biogeographical Information System (OBIS-USA).

Estimated Budget:

EVOSTC Funding Requested* (*must include 9% GA)*:

FY15	FY16	FY17	FY18	FY19	TOTAL
174.2K	**180.2K**				**354.4K**

(Funding requested must include 9% GA)

Non-EVOSTC Funds to be used:

FY15	FY16	FY17	FY18	FY19	TOTAL
698K	**~700K**				**1,398K**

**If the amount requested here does not match the amount on the budget form, the request on the budget form will considered to be correct.*

Date: September 10, 2014

I. EXECUTIVE SUMMARY

Three data management-related projects have been previously funded by EVOSTC. The first project, led by the Alaska Ocean Observing System (AOOS), was titled "Data Management Support for the EVOSTC Long Term Monitoring Program" (Project #14120114D). The second project, also led by the Alaska Ocean Observing System (AOOS), was titled "Data Management Support for the EVOSTC Prince William Sound Herring Research and Monitoring Program" (Project #1412011C). Together, they provided data management support for EVOSTC's Long Term Monitoring (LTM) and Prince William Sound Herring Research and Monitoring (PWS Herring) programs and had the following objectives: (1) provide data management oversight and services using the AOOS Ocean Workspace as a tool for sharing data within these research programs prior to publication, (2) consolidate, standardize, and provide access to study area datasets, (3) develop tools to help user groups access, analyze and visualize information produced by the LTM effort, and (4) integrate LTM and PWS Herring data, metadata and information products into the AOOS data management system for long term storage and public distribution and use.

A third project was led by the National Center for Ecological Analysis and Synthesis (NCEAS) titled "Collaborative Data Management and Holistic Synthesis of Impacts and Recovery Status Associated with the Exxon Valdez Oil Spill" (Project #114120120). That project's funded objectives included the following: (1) provide data management oversight and services, (2) consolidate, standardize and provide access to study area data sets, focusing on retrospective analyses, synthesis and model development, (3) develop user tools to access, analyze and visualize LTM and PWS Herring data, (4) organize, analyze and model historical datasets, (5) integrate data into the AOOS data management system, (6) augment AOOS/IOOS preservation and interoperability system with other data systems through integration of DataONE services, and (7) conduct additional broad synthesis activities on spill impacts and recovery as part of whole-ecosystem analysis through NCEAS working groups.

After the NCEAS-led project was initiated, it became clear that integrating DataONE services into the AOOS/IOOS interoperability services (Project #114120120, Objective 6) would require significant time and effort on the part of AOOS, which was serving as an unfunded partner. The funding-to-work disparity was noted in the EVOSTC Long Term Programs Data Management Meeting on January 29-30, 2014 (EVOS Data Meeting Summary, Pg 2). Notes from that meeting describe EVOSTC staff encouraging AOOS to become a DataONE Member node, a process that can be facilitated by NCEAS but requires technical development from AOOS staff. Becoming a DataONE member node will provide EVOSTC with replication beyond the redundancy provided by Axiom’s data centers in Portland and Providence. As a member node, a copy of all of the LTM and PWS Herring data in the AOOS data system will be distributed across other nodes in the DataONE network.

In addition to EVOSTC data distribution and archiving needs, both ongoing data management projects observed the need for a dedicated data coordinator position. In the initial proposal, program researchers were thought of as being enabled to organize their own files, author their own metadata, and meet data input and processing milestones with minor supervision and oversight. However, the depth and breadth

of the EVOSTC programs along with the myriad of data formats, conventions and personalities required full-time attention, and the LTM program hired a full-time program coordinator (Dr. Tammy Neher). The leadership of that program coordinator in the program greatly improved the quality, organization and metadata throughout the program. However, notes from EVOS Data Meeting Summary suggest that more metadata detail is still needed. They give suggestions on specific issues (e.g., weather or instrument abnormalities, deviations from published standard operating procedures, etc.), and they note a position similar to the LTM program coordinator position should be identified for the PWS Herring program. (EVOS Data Meeting Summary, Pg 3). Furthermore, the current program coordinator will shift their focus away from data coordination tasks in FY15 and FY16 to more aggressively support the Gulf Watch synthesis effort. For these reasons, it is critical for the success of both EVOSTC programs that resources be dedicated to support data coordination.

In addition to using DataONE as a distributed archive, the EVOSTC staff and science panel suggested EVOSTC designate a trustee agency to manage a complete and official repository of all EVOSTC data and metadata (EVOS Data Meeting Summary, Pg 5). Another task for the data coordinator will be to coordinate with trustee agencies to drive discussion on an appropriate destination for such a repository, and to plan the mirroring of AOOS repository in the agency.

Previous proposals for the EVOS LTM and PWS Herring program proposals outlined the relevance of the proposed monitoring, data management and syntheses efforts to the EVOSTC 1994 Restoration Plan goals. Management and dissemination of the monitoring data collected through these programs is critical in order to allowing outside researchers and the public to evaluate, share, and build upon measured outcomes of restoration for all of the scientific priorities described in the restoration plan.

II. COORDINATION AND COLLABORATION

A. Within a EVOTC-Funded Program

The Research Workspace technology being used for data management of the Gulf Watch Alaska program is designed to help facilitate the integration of datasets across disciplines and researchers within the Gulf Watch program. This technology is also being used by the EVOSTC sponsored herring program. Teams and investigators are able to access each other's datasets in a seamless fashion.

B. With Other EVOSTC-funded Projects

The Research Workspace is also being used to organize and centralize data and electronic resources for historic EVOS funded projects. NCEAS and AOOS data management teams have been working together over the span of the project to salvage and document as much information as possible for historic EVOS data that is in jeopardy of being lost to time.

C. With Trustee or Management Agencies

In September 2013 the data management team released the Alaska Ocean Observing System's Gulf of Alaska (GOA) Data Portal, which integrates data and project information produced by Gulf Watch Alaska researchers with a large number of additional GIS, numerical modeling and remote sensing data

resources. The team was able to leverage the AOOS Ocean Data Explorer portal which has been developed using other funding (primarily NOAA) and has these additional features: an integrated search catalog which allows users to search by category or key word, ability to preview data before downloading files, and advanced visualization tools. The platform provides open access to a large array of valuable scientific information that can be accessed and used by mangers and scientists with Trustee Council agencies. AOOS data management has worked with several data consumers within USGS, NPS, BOEM and NOAA in accessing and using data contained within this data portal. The Research Workspace is also being used by the North Pacific Research Board's Gulf of Alaska Integrated Ecosystem Research Program. Historic data acquired through that program is also being provided to Gulf Watch Alaska PIs.

III. PROJECT DESIGN

A. Objectives

1) Provide additional, needed data management support for LTM and PWS Herring programs.
2) Implement technical mechanisms to transfer LTM and PWS Herring program data from the AOOS data system to national archives and systems maintained by Trustee Council agencies.

B. Procedural and Scientific Methods

Objective 1. Provide additional, needed data management support for LTM and PWS Herring programs.

Task 1: Establish data coordinator position to lead the PWS Herring program and assist the LTM program.
AOOS, through its technical arm at Axiom, will hire a data coordinator to lead the PWS Herring program data ingestion effort. The position will be modeled after the LTM data coordinator position that met with great success. Their job description will entail following the conventions laid out by the LTM data coordinator to create a cohesive organizational scheme between the two programs, assist PIs to meet data and metadata submission benchmarks, and quality control metadata from PIs to ensure it is both understandable and meets requirements. The data coordinator will be available to the LTM program and LTM data coordinator as well.

Task 2: Process primary level data into preservation-ready formats.
Managing data from ecosystem-level integrated research programs can be particularly challenging due to the variety of data collection protocols and the vast range of environmental and oceanographic variables studied. Data may derive from automated real-time sensors, remote sensing satellite/observational platforms, field/cruise observations, model outputs, and various other sources. Physical and biological data produced by EVOSTC research programs generally exists in ad hoc data structures (spreadsheets and databases) as primary level data. Though the data may be in a state which can be utilized by the scientist or project team, in many cases the primary level data is not in a form ready to be submitted to national archives or guaranteed to be accessible for perpetuity. Axiom staff will

process physical oceanographic data sets into CF-compliant netCDF file collections. Biological data will be structured into tabular database structures which conform to Darwin Core schema requirements.

Task 3: Help PWS Herring program PIs generate metadata for existing data, and add NCML metadata to preservation-ready LTM and PWS Herring data.
Generating standardized metadata is critical to ensure that the research investment is capitalized in future research efforts in addition to reducing duplication of effort and increasing data discovery and usability. The data coordinator from this project will lead PWS Herring program PIs in generating complete metadata for their information, akin to the data coordinator employed by the LTM program. In addition, the data coordinator will review and polish NCML metadata files attached to the preservation-ready netCDF file collections produced for both the LTM and PWS Herring programs in Task 2.

Objective 2. Implement technical mechanisms to seamlessly transfer LTM and PWS Herring program data from the AOOS data system to systems maintained by national archives and Trustee Council agencies.

Task 1: Extend the LTM (Gulf Watch Alaska) data portal to participate in the DataONE network as a DataOne Member Node.
Becoming a DataONE member node is non-trivial and involves both structural and technological enhancements of the LTM data portal. AOOS already ensures long term availability of data and hosts metadata documents alongside data products. But AOOS will have to create a specific, preservation-oriented repository that uses persistent IDs (i.e. DOIs) and "resource maps" to document the relationship between data products and metadata documents in a data package. (http://mule1.dataone.org/ArchitectureDocs-current/design/DataPackage.html). In addition, mechanisms to make individual content update and archiving activities transparent to end users must be implemented.

Task 2: Integrate LTM and PWS Herring program biological data into the USGS Ocean Biogeographic Information System USA (OBIS-USA).
In order to be submitted to an OBIS-USA node, biogeographical information must conform to the OBIS-USA Schema, an extension of Darwin Core Version 2. Axiom engineers will develop scripts that will create OBIS-USA Schema records of LTM and PWS Herring program datasets that contain species observation and location data. These scripts will populate as much of the OBIS-USA schema record as is possible from a given file, leaving blank any remaining fields in the schema record to be filled in by the LTM or PWS Herring program investigators. These scripts will operate on LTM and PWS Herring program data that has been processed into netCDF files. When these script-generated OBIS schema records require the manual input of dataset information, or if there are files containing biogeographical information that cannot be processed into netCDF files, the Data Coordinator will assist the program investigators with the creation or modification of OBIS schema records for their data.

Task 3: Submit archive data packages to NODC for long term preservation.
This task completes the preparation of EVOS LTM and PWS Herring program data for long-term preservation that will begin with the processing of the data into netCDF files. The Data Coordinator will

engage NODC staff to verify the current submission workflow; work with EVOS investigators to evaluate the quality and completeness of metadata in the Workspace and written into the netCDF files; verify that all supplemental files required to understand the dataset are in appropriate formats for long-term preservation; and work with investigators to address any identified issues. When the dataset is ready, the Data Coordinator will use an FTP-based submission process coordinated with the NODC and used by Axiom throughout 2013 to submit data from the Chukchi Sea Environmental Studies Program to the NODC.

C. Data Analysis and Statistical Methods

AOOS Data Management Strategy

The overarching strategy of the AOOS data system involves implementing end-to-end technological solutions that enable complex data layers to explored in user-friendly applications, while allowing the underlying information to be accessible by external data assembly systems (i.e., interoperability). This approach has been described in detail in prior proposals; however, this strategy is summarized below to give context to the methods that follow.

The AOOS data system is designed around a four-tiered technical approach. Tier 1 involves the storage and replication of data, models and metadata at a local level. In tier 2, Interoperability systems are connected to the tier 1 data resources. These interoperability systems connect tier 1 data, as well as data and metadata from other external sources to the wider network of commercial and scientific users. Tier 3 at AOOS consists of an internal database describing variables, parameters, and the context of each data resource. It draws data and metadata from the interoperability systems below in the same way that external users can use the underlying data. Tier 4 includes the web applications and visualization and analysis tools developed by Axiom to provide access to and understanding of the underlying data. These Tier 4 products are what users interact with to explore and learn from the underlying data. This system was designed to ease rapid data discovery and access, improve understanding of the physical and marine environments, and be in accordance with the data management standards of the national Integrated Ocean Observing System.

Data Coordinator Position

The data coordinator hired by the LTM program has served as program management liaison to the AOOS data team. In this role, she has successfully tracked and improved the rate of data and metadata submission into the Workspace, worked with PIs to increase quantity and quality of metadata written in the Workspace and submitted in other standardized formats, and helped Axiom analysts understand LTM program data for processing and visualization. The Data Coordinator to be hired for this proposal will perform similar work for the PWS Herring program using data and metadata submission and improvement benchmarks developed by or in collaboration with the LTM coordinator. The Data Coordinator position description will be written in collaboration with the LTM coordinator and PWS Herring program management immediately after funds have been awarded in FY15 Quarter 1. Though the description will not be completed until February 2015, the general responsibilities of the position and the focus of the integrated research and monitoring effort will require that the person hired have a

background in environmental or marine science, experience with or knowledge of the metadata standards that will be used (ISO 19115, ncml, and Darwin Core), and demonstrated communication, project management, and planning skills.

Cyber-Infrastructure Development

The AOOS data team will work with NCEAS software engineers to establish the Gulf Watch portal as a functioning DataONE member node. This process will involve adhering to an agile software development methodology. Software engineers from Axiom and NCEAS will participate in weekly scrum style stand up meetings to discuss progress, address issues and plan future development tasks. Issues and progress will be tracked by a shared GitHub instance.

Processing-for-Preservation Workflow

The AOOS data team has already begun work converting LTM program CTD data into 4-dimensional netCDF files that will integrate data from multiple years and sampling locations of data into a self-describing data product. These data will serve as a test case for the workflow that will take data from raw instrument or ad hoc project formats into preservation-ready data packages. Although the final workflow may change based on lessons learned from the CTD data, the initial plan for the proposed work is as follows:

1. The Data Coordinator will engage LTM and PWS Herring program PIs to verify that data from the prior collection season has been added to the Workspace, organized, processed, and documented. When the coordinator and PIs agree that the data is ready, the coordinator will notify Axiom data analysts that the dataset is ready to be converted into a netCDF file.
2. Axiom analysts will process the readied dataset into a netCDF file. NetCDF is a self-describing format, and attributes within the file are used to provide machine-readable metadata that will always be with the file. Some of these attributes will be populated by the analyst during the data conversion; the rest will be populated by the Data Coordinator with the help of the LTM or PWS Herring program PI responsible for the dataset.
3. Completed netCDF files will be placed in replicated storage and served through a THREDDS server (http://www.unidata.ucar.edu/software/thredds/current/tds/) making the data available through standard interoperability feeds (openDAP, NetcdfSubset) to be ingested by other data systems. The THREDDS server includes services to view the variable information and metadata encoded in the netCDF file as NCML (NetCDF Mark-up Language), evaluate metadata completeness using the UDDC rubric, and convert the NCML into an ISO 19115 document via the ncISO service.
4. Axiom analysts will run separate OBIS schema record generator scripts on the netCDF files and on any of the ad hoc project datasets that have regularized formatting but aren't appropriate for netCDF conversion. The OBIS schema is based on Darwin Core Version 2, a metadata standard for biological data. The Data Coordinator will work with LTM and Herring program PIs to complete any required fields in the schema records that the scripts cannot populate. Once complete, the OBIS schema records will be submitted to OBIS-USA at the USGS.

5. The Data Coordinator will work with PIs to combine raw data, netCDF versions of the data, robust metadata records, and any appropriate supporting documents (SOPs, calibration files, etc) into data packages for deposit into the DataONE member node associated with the LTM data portal. The coordinator will be responsible for depositing the completed package in the repository for the DataONE node.
6. The Data Coordinator will submit data packages to the NODC by adding the completed data package into a folder in the FTP server used by the NODC to accept data accessions from AOOS for long-term preservation, notifying the NODC that there is a new accession for archiving, and working with LTM and Herring program PIs to complete the NODC Submission Information Forms (SIF).

D. Description of Study Area

The majority of this project will involve the general spill affected area. Specific areas of focus include those areas in PWS, Lower Cook Inlet, and Kodiak where herring fisheries currently do, or historically did occur. The north, east, south, and west bounding coordinates of this area are 59.767, -145.837, 61.834, and -154.334

IV. SCHEDULE

A. Project Milestones

Objective 1. Provide additional, needed data management support for LTM and PWS Herring programs through a dedicated data coordinator position.

Axiom will hire the Data Coordinator as soon as possible after funding is awarded, no later than the end of the April 2015, in FY 15 Quarter 1. Axiom staff will begin processing additional LTM and PWS Herring program data into netCDF files for easier archiving, integration, and processing will begin FY15 Quarter 1 and will be addressed throughout the entire life of the project following the annual cycle of field data collection and analysis by principal investigators.

Objective 2. Implement technical mechanisms to seamlessly transfer LTM and PWS Herring program data from the AOOS data system to systems maintained by Trustee Council agencies and national archives.

Planning to become a DataONE Member Node will begin in FY15 Quarter 1, with implementation work spread across the two-years of funded work. Planning and the development of scripts to create OBIS schema records will begin in FY15 Quarter 2. These scripts will be completed by the end of FY15 Quarter 3, with submissions to OBIS-USA beginning FY15 Quarter 4 and continuing through the end of the project in FY16. In FY15 Quarter 1, Axiom staff will engage NODC staff to verify submission processes and make any necessary changes. Submission of preservation-ready data to the NODC will begin in FY15 Quarter 3.

B. Measurable Project Tasks

Specify, by each quarter of each fiscal year, when critical project tasks (for example, sample collection, data analysis, manuscript submittal, etc.) will be completed. Please format your schedule like the following example.

FY 15, 1st quarter (Feb 1, 2015 - April 30, 2015)

February	Project authorized and funded by EVOS Trustee Council
February	Axiom begins hiring process for data coordinator
February	Axiom staff begin processing primary data into preservation ready netCDF
March	Begin collaboration with NCEAS to design DataONE member node for Gulf of Alaska Portal
August	Initiate processing of 2012-2014 field season data into preservation formats
April	Engage NODC staff to review submission processes

FY 15, 2nd quarter (May 1, 2015 - July 31, 2015)

May	Data Coordinator engages PWS Herring program management and PIs
May	Participate in annual PI meeting
May	Make any changes necessary to established NODC submission process
June	Begin creation of scripts for creation of OBIS schema records from netCDF formatted data
June	Begin implementation to become DataONE member node

FY 15, 3rd quarter (August 1, 2015 – October 31, 2015)

August	Initiate processing of 2015 field season data into preservation formats
September	Submission of preservation-ready data to NODC begins
September	Prototype of development DataONE member node functioning
October	Submission of 2012-2014 field season data to NODC complete

FY 15, 4th quarter (November 1, 2015 - January 31, 2015)

November	Initial submission of 2012-2014 field data to OBIS-USA
November	DataONE production member node task scoping complete
December	Submission of 2015 field season to NODC Complete
January	Attend Alaska Marine Science Symposium

FY 16, 1st quarter (February 1, 2016 - April 30, 2016)

March	Submission of 2015 field data to OBIS-USA complete

FY 16, 2nd quarter (May 1, 2016 - July 30, 2016)

May	Participate in annual PI meeting

FY 16, 3rd quarter (August 1, 2016 – October 31, 2016)

August	Initiate processing of 2016 field season data into preservation formats

September	Testing of production level DataONE member node

FY 16, 4th quarter (November 1, 2016 - January 31, 2017)

November	Final submission of data to OBIS-USA
December	Submission of 2016 field season to NODC Complete
January	Gulf Watch data portal fully operation as DataONE member Node
January	Attend Alaska Marine Science Symposium
January	Submission of 2016 field data to OBIS-USA complete

V. PROJECT PERSONNEL
Attached

VI. BUDGET

A. Budget Spreadsheet (Attached)

B. Sources of Additional Funding

AOOS brings a significant level of leveraged resources, infrastructure, regional data management projects and partnerships to this proposed effort. The data management effort for the LTM and PWS Herring projects could not be accomplished for the budgeted amount by a team without these leveraged resources.

AOOS – (540k to AOOS DM) Alaska oceanographic data management effort. Supports open source, standards based data system that serves up and archives real-time sensor feeds, models & remote sensing data, GIS data layers, and historical datasets. Data system developed on interoperability concepts and meets NOAA Integrated Ocean Observing System standards and protocols for streaming data feeds to national data assimilation centers. Data Management Committee chaired by Dr. Phil Mundy provides ongoing advice, prioritization and direction to the team at Axiom Consulting & Design. AOOS board is made up of federal and state agencies, and major marine research institutions in the state that have committed to data sharing. The AOOS board has committed to supporting a statewide data system for as long as AOOS exists. Federal funding is stable, although we would like to see it increase. In the event AOOS was to end, all data and data products would be transferred to the University of Alaska.

1. NPRB GOAIERP – (80K) During this project year, NPRB will be providing funding to the AOOS data management team to support the Gulf of Alaska Integrated Ecosystem Research Program, which is performing research in the same area as Gulf Watch.
2. USFWS Seabird Data System – ($50K) Project involves the creation and population of a series of new seabird metric databases (diet and productivity) and integrating these new databases with legacy seabird databases (species distribution and abundance at seabird colonies, pelagic species distribution and abundance, USGS seabird monitoring databases and NPRB's North Pacific Seabird Diet Database). Modern spatially explicit, web based data entry interfaces have and continue to be developed to assist researchers existing in distributed agencies to contribute their historic and current seabird metric data into standard data structures. Project will result in vastly

increasing the amount and quality of seabird species distribution, diet and other seabird data available for use in retrospective analysis and management. Though data includes areas around all of Alaska, most available data is located in GOA and PWS.

3. AOOS – collaborator with Alaska Data Integration Working Group – an initiative with the Alaska Climate Change Executive Roundtable – to develop protocols for serving up project data to increase data sharing among federal and state agencies.
4. AOOS and NOAA – initiatives to develop data sharing agreements with private sector, including oil & gas companies.
5. Kenai Fish Habitat Partnership/Cook Inlet Regional Citizens Advisory Council (28K) – contract with Axiom to develop a data management system for their oceanographic and contaminants data in Cook Inlet.
6. NOAA (80K) – Project to Axiom to develop a Cook Inlet beluga sightings database.

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
PROGRAM BUDGET PROPOSAL AND REPORTING FORM

Budget Category:	Proposed FY 12	Proposed FY 13	Proposed FY 14	Proposed FY 15	Proposed FY 16	TOTAL PROPOSED	
Personnel	$0.0	$0.0	$0.0	$129.9	$134.4	$264.3	
Travel	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Contractual	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Commodities	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Equipment	$0.0	$0.0	$0.0	$0.0	$0.0	$9.9	
Indirect Costs (*will vary by proposer*)	$0.0	$0.0	$0.0	$29.9	$30.9	$138.4	
SUBTOTAL	$0.0	$0.0	$0.0	$159.8	$165.3	$749.9	
General Administration (9% of subtotal)	$0.0	$0.0	$0.0	$14.4	$14.9	$29.3	
PROJECT TOTAL	**$0.0**	**$0.0**	**$0.0**	**$174.2**	**$180.2**	$354.3	
							-
Other Resources (Cost Share Funds)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	-

FY12-16

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

PROGRAM SUMMARY PAGE

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:			Months	Monthly		Personnel
Name	Project Title		Budgeted	Costs	Overtime	Sum
Rob Bochenek	Information Architect		1.0	10.1		10.1
Vacant	Data Coordinator		6.0	8.1		48.6
Ross Martin	Software Engineer		4.0	9.3		37.2
Luc Mehl	Data Analyst		4.0	8.5		34.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
			Subtotal	36.0	0.0	
					Personnel Total	$129.9

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY15

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

FORM 3B
PERSONNEL & TRAVEL DETAIL

Version 9/2/14

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description		Contract Sum
If a component of the project will be performed under contract, the 4A and 4B forms are required.	**Contractual Total**	$0.0

Commodities Costs: Description		Commodities Sum
	Commodities Total	$0.0

FY15

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

FORM 3B
CONTRACTUAL & COMMODITIES DETAIL

Version 9/2/14

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		New Equipment Total	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY15

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

FORM 3B
EQUIPMENT DETAIL

Version 9/2/14

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Personnel Costs:			Months	Monthly		Personnel
Name	Project Title		Budgeted	Costs	Overtime	Sum
Rob Bochenek	Information Architect		1.0	10.4		10.4
Vacant	Data Coordinator		6.0	8.4		50.4
Ross Martin	Software Engineer		4.0	9.6		38.4
Luc Mehl	Data Analyst		4.0	8.8		35.2
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
						0.0
			Subtotal	37.2	0.0	
					Personnel Total	$134.4

Travel Costs:	Ticket	Round	Total	Daily	Travel
Description	Price	Trips	Days	Per Diem	Sum
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
					0.0
				Travel Total	$0.0

FY16

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

FORM 3B
PERSONNEL & TRAVEL DETAIL

Version 9/2/14

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

Contractual Costs: Description		Contract Sum
If a component of the project will be performed under contract, the 4A and 4B forms are required.	**Contractual Total**	$0.0

Commodities Costs: Description		Commodities Sum
	Commodities Total	$0.0

FY16

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

FORM 3B
CONTRACTUAL & COMMODITIES DETAIL

***EXXON VALDEZ* OIL SPILL TRUSTEE COUNCIL**
DETAILED BUDGET FORM FY 12-FY16

New Equipment Purchases: Description	Number of Units	Unit Price	Equipment Sum
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
			0.0
		New Equipment Total	$0.0

Existing Equipment Usage: Description	Number of Units	Inventory Agency

FY16

Program Title: Supplemental Data Management Support for EVOSTC Monitoring Programs
Team Leader: Rob Bochenek, AOOS

FORM 3B
EQUIPMENT DETAIL

Version 9/2/14

Boerner, Catherine (EVOSTC sponsored)

From: Rob Bochenek <rob@axiomalaska.com>
Sent: Monday, September 29, 2014 12:25 PM
To: Boerner, Catherine (EVOSTC sponsored)
Cc: Molly McCammon; Kris Holderied; tammy.neher@noaa.gov; Scott Pegau; Katrina Hoffman
Subject: Supplemental DM Task Budget Breakdown
Attachments: EVOS Supplemental DM Project Task Breakdown Budget.xlsx

Hi Catherine,

Per your request, attached is a task budget breakdown for the following tasks as defined in the new DPD AOOS/Axiom submitted:

1) HRM/Gulfwatch Program Data Coordination
2) Data One Integration
3) NODC Submission (NOAA TC Agency)
4) OBIS-USA Submission (USGS TC Agency)

These tasks are dependent upon each other and interconnected. Tasks 2-4 depend heavily upon the execution of Task 1 (data coordination). Without theenhanced coordination of data we are going to have a hard time integrating data into DataOne, OBIS-USA and NODC. Also, tasks 3 and 4 (submission of data to NODC and OBIS-USA) enhance data coordination as well. So, if these tasks (3 and 4) are not funded, then our overall ability to effectively coordinate data (task 1) will be reduced. I know that you are looking for a budget structure that allows the TC to "pick and choose" components but the lines of distinction between these tasks really are overlapping.

The attached spreadsheet contains 2 tabs. One tab is for FY15 task breakout and the other is for the FY16 task breakout. This gives you an idea of the budget allocation among tasks in the comprehensive budget. However, if you choose to fund less than the entire project, we would have to give you a revised budget for the new SOW that would likely be more than the individual task in a comprehensive budget.

--
Rob Bochenek
Information Architect
Axiom Consulting & Design
(907)230-0304 - Cell
www.axiomalaska.com
rob@axiomalaska.com

Staff	Monthly Costs
Rob Bochenek	$10,100
Ross Martin	$9,300
Luc Mehl	$8,500
Data Coordinator (Vacant)	$8,100

Staff - Task - Months	Task 1	Task 2	Task 3	Task 4	Task 5	Total Time by Staff Member
Rob Bochenek	0.25	0.25	0.25	0.25		1
Ross Martin		4				4
Luc Mehl			2	2		4
Data Coordinator (Vacant)	6					6

Staff - Dollars	Task 1	Task 2	Task 3	Task 4	Task 5	Total Cost by Staff Member
Rob Bochenek	2,525.00	2,525.00	2,525.00	2,525.00	0.00	10,100.00
Ross Martin	0.00	37,200.00	0.00	0.00	0.00	37,200.00
Luc Mehl	0.00	0.00	17,000.00	17,000.00	0.00	34,000.00
Data Coordinator (Vacant)	48,600.00	0.00	0.00	0.00	0.00	48,600.00
Total	**$51,125.00**	**$39,725.00**	**$19,525.00**	**$19,525.00**	**$0.00**	
Indirect	**$11,758.75**	**$9,136.75**	**$4,490.75**	**$4,490.75**	**$0.00**	
Total With Indirect	**$62,883.75**	**$48,861.75**	**$24,015.75**	**$24,015.75**	**$0.00**	
				Total Funds	**$159,777.00**	

Task Number	Task Description
1	HRM/Gulfwatch Program Data Coordination
2	Data One Integration
3	NODC Submission (NOAA - TC Agency)
4	OBIS-USA Submission (USGS TC Agency)
5	

Staff	Monthly Costs
Rob Bochenek	$10,400
Ross Martin	$9,600
Luc Mehl	$8,800
Data Coordinator (Vacant)	$8,400

Staff - Task - Months	Task 1	Task 2	Task 3	Task 4	Task 5	Total Time by Staff Member
Rob Bochenek	0.25	0.25	0.25	0.25		1
Ross Martin		4				4
Luc Mehl			2	2		4
Data Coordinator (Vacant)	6					6

Staff - Dollars	Task 1	Task 2	Task 3	Task 4	Task 5	Total Cost by Staff Member
Rob Bochenek	2,600.00	2,600.00	2,600.00	2,600.00	0.00	10,400.00
Ross Martin	0.00	38,400.00	0.00	0.00	0.00	38,400.00
Luc Mehl	0.00	0.00	17,600.00	17,600.00	0.00	35,200.00
Data Coordinator (Vacant)	50,400.00	0.00	0.00	0.00	0.00	50,400.00
Total	**$53,000.00**	**$41,000.00**	**$20,200.00**	**$20,200.00**	**$0.00**	
Indirect	**$12,190.00**	**$9,430.00**	**$4,646.00**	**$4,646.00**	**$0.00**	
Total With Indirect	**$65,190.00**	**$50,430.00**	**$24,846.00**	**$24,846.00**	**$0.00**	
				Total Funds	**$165,312.00**	

Task Number	Task Description
1	HRM/Gulfwatch Program Data Coordination
2	Data One Integration
3	NODC Submission (NOAA - TC Agency)
4	OBIS-USA Submission (USGS TC Agency)
5	