

# 2012 Proposals

FY12 Annual Report ([PDF](#)) - May 10, 2013

## Community for Data Integration FY12 Project Proposals

**NOTE:** All 2012 Project Proposals have been funded.

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[CDI FY 2012 Proposal Presentation](#) to CDI Executive Sponsors on December 13, 2012

## Deadlines

Proposals need to be completed by **October 14, 2011**. This means that all fields in the table below need to be complete by that date or your proposal will not be considered.

Proposal ranking will be completed by October 30, 2011.

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## Tech Stack Working Group

Project Topic	Tasks	Resources Required	Deliverables	Benefits to USGS Scientists	In-Kind Funding Provided	Total Funding Required
<a href="#">Python port of GDP client tools (WPS) w/ hooks for ArcGIS Toolbox</a>	<ul style="list-style-type: none"> <li>Develop python functions to execute GDP web processing services</li> <li>Develop python based ArcGIS Toolbox to return GDP data products</li> </ul>	<ul style="list-style-type: none"> <li>Developer with knowledge of Python and ArcGIS data models.</li> <li>Travel Funds for two, three-day face to face meetings.</li> </ul>	<ul style="list-style-type: none"> <li>Python scripting tools and ArcGIS toolbox to access GDP web processing services.</li> </ul>	The creation of a python module will allow many commonly-used scientific software tools (ArcGIS, Python, R, Matlab, Microsoft Office) to access GDP analysis functionality. The GDP is now accessible through an interactive web page, which is another system to learn and data formats to navigate.	Opens CIDA's Geo Data Portal functionality to scientific app clients	\$40,000
<a href="#">Citizen Science Observation Platform - Using Curated Twitter and GeoRSS Enabled Feeds</a>	<ul style="list-style-type: none"> <li>Establish unique Twitter account to accept incoming direct messages</li> <li>Develop submission protocol; Develop scripts to mine Twitter stream API</li> <li>Visualization modules for chart, map and timeline</li> </ul>	Social Media web technician - student intern	<ul style="list-style-type: none"> <li>Twitter based protocol for biological observations</li> <li>Reusable code modules to mine Twitter stream API</li> <li>Web-based visualization modules for geospatial, and chart display of contributed information</li> <li><b>Results (to be) presented at a Citizen Science Workshop technical session</b></li> </ul>	The proposed project leverages existing efforts toward the use of social media systems for delivery of information into a web based visualization framework. Rather than support the development of an expensive system developed in-house, this proposal suggests the use of cloud-based social media system Twitter to provide a robust observation platform. Development efforts will be directed at utilizing the substantial Twitter API feature set to query the media stream for species observation submissions. Citizen science participants will be encouraged to use the Twitter direct message system to submit species observations using a pre-defined schema. Observations will be extracted from the Twitter stream, and processed using geospatial, chart and timeline modules.	<p><b>Leverage</b> The proposed Twitter-based observation platform will leverage the development efforts of the USGS Earthquake Center. The USGS Twitter Earthquake Detector (USGS TED) has received several awards and media recognition for its social media earthquake detection system. The developers at USGS TED have offered to provide the harvest and spatial engine that currently drives the system. By providing the backend system, the TED team will significantly shorten the development timeline and overall cost of the proposed project. The project will also receive programming resources provided in-kind by the University of Hawaii.</p> <p><b>Funding</b> In Kind \$6,250 for application development</p>	

• § 2,750 (travel for student intern to present results of travel for face-to-face meeting with USSSEARTHQUAKE CENTER affiliates and incidentals)

• in-kind support from CSSA and EW

in-kind support from FORT Collins Science Center Mobile Apps group

<p>USGS Mobile Applications Development Support Framework</p>	<p>Establish and support a USGS Mobile Environment website to provide support of portable hardware devices, application development and application delivery. The development of a framework to fully support this endeavor will require input and involvement by Core Science Systems, Enterprise Information, Science Quality and Integrity, Office of Communication, Publishing and the mobile community.</p> <p>Coordinate a workshop to bring a small group of experts together to draft the framework to support Hardware/Device Management, Application Development Support and Policies, Guidelines and procedures, and Application Delivery. Parties include: Core Science Systems, Enterprise Information, Science Quality and Integrity, Office of Communication, Publishing and possibly other Mission Areas</p> <ul style="list-style-type: none"> <li>• Areas to be explored, supported and developed include, but are not limited to Community of Practice, Code Repositories, Use Cases, Development Cycle Templates, Decision trees for application development, code review and testing processes, security reviews, cross platform requirements, Internal vs. External development requirements, hardware blacklist, etc.</li> <li>• Investigate support of "hack-a-thons" or contests to facilitate development of applications using USGS data</li> </ul>	<p>Proposal is to cover costs for travel and a facilitator (10 3-day trips to one locale). Management support and follow up meetings will be required in order to ensure success for this critical process.</p>	<p>Having a known and advertised one-stop shop for this information will save many staff hours that would be spent researching options and requirements.</p> <p>In order to facilitate and expedite application development across USGS we will establish a single site, or one-stop-shop that is supported by multiple responsible parties. The site will be built to allow delegated access to update appropriate guidance. This proposal will support:</p> <ul style="list-style-type: none"> <li>• Establishing a clear understanding of the areas of responsibility across these organizational lines</li> <li>• Developing the framework to allow for the information to be well organized and supported</li> <li>• Finding and decisions (to be) presented at a Citizen Science Workshop technical session</li> </ul>	<p>Supporting a one-stop-shop that provides content and is supported by multiple organizational units will facilitate and expedite application development and support. Ensuring that a clear understanding of the areas of responsibility across these organizational lines and developing the framework to allow for the information to be well organized and supported will be critical.</p> <p>(More...)</p>	<p>This project will cross many organizational units in USGS who have responsibility with regard to Mobile devices, application and application delivery. Every staff involved will develop expertise and explore background information on their own time.</p>

\$20,000 and \$10K in in-kind pre-meeting labor

<p>HTML5 GIS functionality for Openlayers</p>	<p>Coordinate with the OpenLayers lead developers on implementing client-side HTML5 compliant Canvas layer raster imagery processing that would work in any HTML5 standard compliant browser.</p>		<ul style="list-style-type: none"> <li>- Ability to Calculate statistics for visible map image (count per pixel color, total sq-area for pixel color)</li> <li>- Ability to Clip (intersect) visible map image with a polygon (county, watershed,...) - also calculate statistics for clipped region.</li> <li>- Compare/filter multiple map layers (basic raster algebra). Example: User could effectively view only land cover data above a certain elevation and capture statistics.</li> </ul>	<ul style="list-style-type: none"> <li>- Land Cover Change, Ecosystems</li> <li>- Would allow online raster analysis through browser technologies and avoid local data replication</li> <li>- Alternative to other web map technologies (flash)</li> <li>- Lots of potential mobile applications</li> <li>- Any raster analytic application that can benefit from dynamic visualization (i.e., instant visual feedback from user input, e.g., slider functionality).</li> </ul>	<p>The Land Cover Analysis Tool (LCAT) and Chesapeake Online Adaptive Support Toolkit (COAST) have been developed and provide raster analysis capability. This would improve the functionality and performance of both existing applications and potentially improve other web map based USGS projects. This is a component of a toolkit the OpenGeo will be building with substantial amounts of in kind development time.</p>	<p>\$22K</p>
<p>Augmented Reality - Visualizing Biological Species Occurrences Over A Real Time Display</p>	<ul style="list-style-type: none"> <li>• Create ArcGIS geodatabase of species occurrence locations;</li> </ul>	<ul style="list-style-type: none"> <li>• Expose point locations through a webservice API; Register point service through Layer platform; * Load and view species locations in mobile viewer on Android and iPhone platforms</li> </ul>	<p>Mobile GIS technician - student intern; iPhone/Android SDK</p>	<ul style="list-style-type: none"> <li>• ArcGIS species occurrence point layer <ul style="list-style-type: none"> <li>* Dynamic Map Service - render point layer into a queryable dataset.</li> <li>* Layer Endpoint and Mobile AR Viewer</li> <li>* Registered national species occurrence layer available through a robust mobile augmented reality platform   The proposed project leverages efforts of Biological Informatics Program to aggregate species data into a web-based geospatial platform and makes use of existing information networks from USGS scientific staff and participating USFWS/NPS Inventory and Monitoring programs. Efforts leverage ongoing work to develop species occurrence information systems within USGS (eg. BISON).</li> </ul> </li> </ul>	<p>Mobile application developer technician - student intern (in-kind)  Project lead - CSAS data coordinator (in-kind)  Species occurrence records acquired by USGS research scientists and aggregated through web-map services at University of Hawaii (leveraged resources)  Point layer developed by CSS programming staff working on Biodiversity Information Serving Our Nation (leveraged resources)  * in-kind support from CSS-NGP  * in-kind support from Fort Collins Science Center Mobile Apps group</p>	<ul style="list-style-type: none"> <li>• \$185 (travel fee student intern)</li> </ul>

<p>Expand TNM Save As/Open in to USGS Wide</p>	<p>Vet the TNM Concept Discover issues for expanding Explore JSON Context Scope Explore Standardization Process Explore how have 1 Save As /Open In App service that USGS can use leveraging TNM efforts</p>	<p>Representatives from other USGS areas interested in Mashup Travel \$ may be needed</p>	<p>USGS Wide approach to Mashup Same Context File Demos of Open Mashup in other Viewers Preferably OpenLayers, Flex, Silverlight and JS API Mashup reader developed for reuse</p>	<p>In FY11, the team is proposing to continue supporting these two users – ArcMap and Web User – by combining the two user stories and automating the web transition to the heavy client. Supporting a user who is searching and exploring services on the web, mashing them up, and wanting to setup the same mashup context view in heavy clients like ArcMap or Google Earth with one-click and without needing technical support to do so.</p>	<p>1. Travel \$ possible # Partners after reviewing the concept may want development \$ (i.e. Developer time salary contributions for partners like EGSC, WIM, CIDA time) # External ad-hoc ESRI talent reachback as needed or help broker the NGA Palanterra x3 and ArcGIS.com discussions as Px3 moves to the ESRI Context (Batten)</p>	<p>• Tr a v e l \$ - 1 4 0 d a y s of la b or . 5 to . 7 5 F TE fo r C D I F u n d i n g a c r o ss L C A T (3 0) . W I M (3 0) . C I D A (1 0) . a n d N G P (1 0) T o t a l : \$ 4 8, 0 0 0  </p>
<p>ScienceBase //Geo Data Portal Integration face to face work support, training, and outreach.</p>	<p>Sciencebase and Geo Data Portal development and management teams meet face to face for planning and code sprints.  Sciencebase and Geo Data Portal representatives prepare and present training and conduct usability testing.</p>	<p>Travel funds for face to face meetings and training.  Travel funds for: - 2 CIDA Staff to Fort for 3 days - 2 Fort Staff to CIDA for 3 days - 3 trips for 1 Fort and 1 CIDA staff to TBD USGS offices. (maybe Reston, Denver, and Menlo Park?)</p>	<p>Efficient and effective development of ScienceBase features that leverage the data integration framework and tools developed for the Geo Data Portal project.  Greater awareness of the ScienceBase system and Geo Data Portal tools and what they can do for science teams around the bureau.  Input from (formal?) usability testing to feed back into the projects for improvement according to the needs of real users.</p>	<p>Helps raise awareness and trains scientists to use the ScienceBase-Geo Data Portal integrated system. These scientists are not associated with already funding projects (NCCWSC) and would not find out about this system without CDI funded training.</p>	<p>Substantial development of both ScienceBase and the Geo Data Portal systems. Already a data integration framework and trajectory. Interested user community that needs the capability for visualization, access, and hosting of large complex datasets.</p>	<p>\$30,000</p>

<p><b>NWIS Web Services Snapshot for ArcGIS [Final phase -- Improving access to corporate USGS databases]</b></p> <p><a href="http://tx.cr.usgs.gov/snapshot">http://tx.cr.usgs.gov/snapshot</a></p>	<p>Task 1: Support and maintenance  Task 2: Training, outreach, and awareness  Task 3: Software enhancements and updates  Task 4: Testing and revision  Task 5: Publish the software and website.</p>	<p>Three to six FTE, 1 to 10 PP each</p> <p>Travel funds for presentations, education and outreach</p> <p>SPN funds for abstract and presentation review</p>	<p>1. ArcGIS 10 Add-In software package.*</p>	<p>1. Training and information sessions.  # Feedback to web services developers.  # A public-facing user community website  # Training and technical documentation.  # Publicly-available source code.  # Issue tracking database.  # Software testing results.** <i>To be made available on the user community website.</i>  Produced to leverage USGS investment in streaming data from web services, the NWIS Web Services Snapshot represents the next generation of data retrieval and management. The newest Snapshot tool allows instant access to NWIS data from four different web services through ArcGIS, software available to all USGS scientists in all mission areas. Increased data retrieval efficiency reduces the steps required to retrieve and compile water data from multiple sites from what can be more than 30 steps to just a few clicks. As an end-user education tool, it promotes use of NWIS data from both web services and the NWIS database, which increases the production of scientific research and analysis that uses NWIS data. The Snapshot database design enables efficient data compilation and preparation which is fundamental and pre-requisite to achieving the USGS Science Strategy vision of integrated ecosystem science based on integrated data.</p>	<ul style="list-style-type: none"> <li>• Leveraging NWIS Web Services <ul style="list-style-type: none"> <li>* Extending previous work by David McCulloch, Brian Reece, and Texas Water Science Center CDI-supported Snapshot software</li> <li>* Leveraging ArcGIS Desktop enterprise license</li> <li>* In kind contributions from Core Science Informatics, Energy and Minerals, Fort Collins Science Center, CIDA, NWISWeb, and ten USGS science centers</li> <li>* In kind contributions from external reviewers at partner institutions</li> </ul> </li> </ul>	<p>\$119K</p>
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<p>Mobile application to collect nationally consistent data of fish passage barriers in the United States to meet needs for hydrologic and ecological assessments AND conservation planning decisions.</p>	<ul style="list-style-type: none"> <li>Evaluate and document differences between USFWS Fish Passage Decision Support System and fish passage mobile database pilot developed for Texas</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate and document changes needed for a national Fish Passage Barrier Mobile Application <ul style="list-style-type: none"> <li>* Modify Fish Passage Mobile to accommodate changes in schema</li> <li>* Develop a plan for soliciting input from USGS scientists of Science and Water Science Centers, USFWS Regional Offices, and the states through the Association of Fish and Wildlife Agencies' Fisheries and Water Resources Policy Committee</li> <li>* Testing and documenting results of FP Mobile using select representatives from USFWS and USGS scientists</li> <li>* Work with NHD program to link the fish passage barrier events to NHD and NHDPlus.</li> <li>* Develop an Open File Report that demonstrates relevance to multiple federal and state agencies and stakeholders</li> </ul> </li> </ul>	<p>Personnel time:  * IT Specialist 424 hours; GIS + other specialists 40 hours  [direct=\$36999.16; indirect=\$19,800.84]  ] Ecosystems and Water Mission Areas coordination time (in-kind) to identify appropriate contacts for researcher feedback  * BIP coordination time (in-kind) to facilitate coordination with USFWS Headquarters Office, regional USFWS Fish Passage Coordinators, and federal and state partners associated with National Fish Habitat Partnership  * NHD Program (in-kind) coordination to facilitate appropriate methods and outlet for data delivery for NHD and NHDPlus formats  Enterprise Publishing Network: Open File Report (\$12,000)</p>	<ul style="list-style-type: none"> <li>Multi-agency data application (for Android and iPhone mobile devices) to collect fish passage barrier data including capture of photo and GPS coordinates  * Consistently formatted database of fish passage barriers events linked to NHD to provide access to additional USGS data.  * Database hosted via servers at the Texas Water Science Center.  * Open File Report that demonstrates the coordination among federal and state agencies by providing a national resource.  * Output delivered through web map viewer for the National Fish Habitat Action Plan  Phase 2: Implement continued feedback from scientists   Benefit to USGS, USFWS as well as state agencies, NGOs, academia, as well as other science agencies.  In addition this can be used as a model for national implementation for FPDSS field collection, data management and storage.</li> </ul>	<p>1st order: Direct funds from FWS and USGS for tool development, maintenance and ongoing support.  2nd order: In-kind work from field personnel collecting the data.  3rd order: In-kind support in the form of continued maintenance of the current NHD high resolution database.  4th order: In-kind support from USGS and the BLM in the form of HEM Tools for future incorporation into the NHD.</p>	<p>FY12 Phase 1: \$68,800</p>
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## Semantic Web Working Group

Project Topic	Tasks	Resources Required	Major Outcomes Deliverables	Benefits to USGS Scientists	In-Kind Funding Provided	Total Funding Needed
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<b>Semantic Technologies for Integrating USGS Data</b>	<p>1.) Create project team  2.) Data set analysis and selection of prototype focus  3.) One-week workshop to analyze use case and develop prototype  4.) Demonstrate the prototype, technologies and methodologies at the 2012 CDI Workshop  5.) Publish documentation  6.) Utilize prototype to feed data into USGS national fisheries initiatives.</p>	<p>- Consultant (\$4K)  - Travel for 8 (\$12K)  - Water Science Domain Expert Salary (\$3K)  Resources:  - Team Salaries  - Infrastructure  - Aquatic Gap Contribution to prototype</p>	<p>1.) Access points for querying integrated use case data sets  2.) Demonstration of semantic prototype at 2012 CDI meeting  3.) Evaluation of impact on existing data systems  4.) Open-file report documenting the semantic technology stack and methodology  5.) Prototype will be leveraged for the expansion of USGS national fisheries work.</p>	<p>1.) <b>single access point to multiple data sets:</b> the prototype will produce an information foundation for fish habitat research that will be a "mashup" of data from multiple USGS data systems that are currently fragmented among the former USGS Divisions  2.) <b>provide guidance to others on semantic techniques</b> that could automate and expedite the data discovery and integration for use by project scientists  3.) <b>answer the question, how will this work for my data?</b> documentation will be published for the USGS science community regarding the advantages and disadvantages of using semantic technology for different types of data sets  4.) <b>repeatable technical infrastructure:</b> technical documentation will be provided for anyone wishing to install the semantic technology stack in their own environment in order to use it with data sets of interest to their own scientific research.  5.) <b>USGS data relevancy will be elevated</b> for use in national, cross agency aquatic habitat initiatives.</p>	<p>1.) Project Team Salaries (Contributions from team members in Hazards, CSS, Water, Ecosystems)  2.) Infrastructure Support provided by CSS CSAS  3.) Aquatic Gap will provide funding for prototype work and future expansion</p>	\$19,000
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## Data Management Working Group

Project Topic	Tasks	Resources Required	Major Outcomes Deliverables	Benefits to USGS Scientists	In-Kind Funding Provided	Total Funding Needed
<b>Data Management Website Phase 2</b>	<ul style="list-style-type: none"> <li>- Continue building website content including: best practices, tools, recommended reading, and data management planning tool.</li> <li>- Usability testing on website</li> <li>- Continue development of internal website with eventual migration to external website presence.</li> <li>- On-going maintenance of website and content</li> </ul>	<ul style="list-style-type: none"> <li>- Web Developer (1/2 FTE)</li> <li>- Usability Testing Expert (2 PP)</li> <li>- Subject Matter Experts (to provide content) (majority in-kind with 1 PP for salary costs where needed)</li> <li>- Project Manager (2 FTE, 2PP/each)</li> </ul>	<ul style="list-style-type: none"> <li>- A website containing comprehensive data management content including best practices, tools, references, and identified USGS points-of-contact.</li> <li>- Comprehensive data management content and identified USGS points-of-contact</li> <li>- Basic reference for scientists</li> <li>- Facilitating knowledge transfer</li> </ul>	<ul style="list-style-type: none"> <li>- USGS researchers will have easy access to the standards, tools, and best practices that will ensure adherence to consistent data management best practices thru a library of data management resources and educational products.</li> <li>- Provides one location for USGS data management-related projects to be hosted.</li> <li>- Increasingly, scientists need ready access to information and data management resources in USGS. For example, many journals are requiring data prior to acceptance of a scientific paper for publication, which requires that USGS scientists know the policies and procedures for responding to that request and others like it.</li> </ul>	USGS Volunteer time + \$15,000 Federal Employee time	\$45,000
<b>Data Management Training and Education Phase 2</b>	<ul style="list-style-type: none"> <li>- Solicit input from USGS Mission Areas, Geographic Areas, CDI, etc. on Phase 1 FY11 Data Management Education Products</li> <li>- Interface with Data Management Website Working Group to make materials available.</li> <li>- Begin development of content for a USGS data management training program based upon existing materials and data management training</li> <li>- Development of format /structure for data management training workshop</li> </ul>	<ul style="list-style-type: none"> <li>- Project Manager (2 FTE, 2 PP)</li> <li>- Subject matter experts (in-kind)</li> <li>- Content/training materials developer (1 FTE, 3 PP)</li> </ul>	<ul style="list-style-type: none"> <li>- Data management education products useful to USGS and available on the Data Management Website.</li> </ul>	<ul style="list-style-type: none"> <li>- Training informs and encourages broadest possible application of data management practices.</li> <li>- Knowledge is power, and in the case of the USGS scientist, knowledge of data management practices in the Survey will increase likelihood of properly managed data that will lead to the power to better access, understand, and re-use datasets within USGS.</li> <li>- Training that sends a consistent message to all scientists about data management practices in USGS is important to maintaining the value of USGS data.</li> </ul>	USGS Federal Employee time: \$6,500	\$23,564
<p><b>USGS Science Center Adaptable Data Management Plan Implementation and Framework</b> (hyperlink to full proposal)  <b>Problem:</b> USGS science centers under all mission areas have largely operated under their own purview in the arena of data management with the level of oversight and consistency among projects varying greatly. Water science centers manage a considerable number of local, regional, and national projects in cooperation with Federal and State partners that produce data that often fall outside the interests of national USGS data Programs such as the North American Water Quality Assessment (NAWQA) and the National Water Information System (NWIS). In addition, a myriad of new data types and technical considerations requires a more formalized and consistent approach to Program and Project-level data management.</p>	<p>1.) Program and Project Business Process Assessment (using the Texas Water Science Center (TXWSC) and Alaska Water Science Center (ASC) as demonstration science center Programs)</p> <p>2.) Development of an Annotated Science Center Data Management Plan Outline for the TXWSC and ASC leveraging Layer III of the USGS Climate Effects Network Data Management Plan Framework (DMPI).</p> <p>3.) Development of a Version 1 Science Center Plan Implementation</p> <p>4.) Development of a Wiki version of each Science Center Data Management Plan Implementation</p>	<ul style="list-style-type: none"> <li>- 1 FTE for 5.25 Pay Periods</li> <li>- 1 FTE for 2.625 Pay Periods</li> <li>- Travel funds</li> </ul>	<p>1.) Summary of science center program business model considerations</p> <p>2.) Two science center plan outlines and implementations based on the framework available as reusable templates</p> <p>3.) Science center plan implementations enabled as wiki version to enhance future participation and development</p> <p>4.) Data management plan framework further informed based on this process</p>	<p>This study will advance the long-standing need for a more formalized approach to data management planning at the science center (program) level in USGS. The study will use two different science centers as test cases. Improved planning for data management and data integration is identified in the Bureau science strategy goals (U.S. Geological Survey, 2007; Burkett and others, 2011) with the need for consistent and unified data management to allow for accessible and high confidence data and information from the USGS science community.</p>	In-Kind: \$20,000	Total Requested: \$68,500



<p><b>USGS Data Management Planning and Technical Support Response</b> (CDI White Paper for USGS Implementation (Pilot to Production))</p>	<p>- Inventory existing USGS and other Support Response systems that are used to gather questions and responses, and deliver information and knowledge to solve an issue or problem. Develop the functional and operational requirements of such a system to meet USGS Program Level Data Management Support needs.  - Explore existing USGS Employee Level databases that currently contain or can contain information concerning the scope and focus of one's subject matter expertise. Internal USGS Professional Pages, and other systems will be explored as a source to query a "Best Match" of Expertise and Personnel required for Data Management Support.</p>	<p><b>Salary:</b> 1 -2 Pay periods of Salary of approximately 4-6 USGS CDI Professionals (Includes Task leader). Project members should include those with expertise in GIS Applications, aspects relating to Data Management, Database use, Data Archive methods and approaches, Meta Data creation and Content Delivery /Web Services support.  Pay Scales ranges from GS 12 to GS 14 (-\$3100.00 to \$4400 per payperiod)  <i>Low Range \$25000</i>  <i>High Range \$45000</i>  <b>Travel:</b> (4-6 people, Two face to face meetings) \$8000</p>	<p>White Paper of findings and recommendations for a Bureau-Wide implementation of efficient and effective USGS Program and Task Level support request system that consists of:</p> <ul style="list-style-type: none"> <li>• A client request notification system, support request tracking system (for the life of the request) so users and support personnel can monitor the status of the support request.</li> <li>• A knowledge management system that can contain and track documentation relating to Data Management support and solutions.</li> <li>• A Technical Human Resource Capabilities /Expertise System that matches the available Data Management Expertise to what is required by the specific Support Request.</li> <li>• A recommendation for funding and structure of a Support Team that would handle short-term, quick resolution support requests to those that require more on-site/long-term support requests than man span months or fiscal years (life of the task or project). (BWTST model of support vs direct funding of a specific employee over the life of the support request.</li> </ul>	<p>USGS Enterprise Wide Operational Support System to address ongoing Program Level Data Management challenges that includes existing USGS Personnel Resources. The direct benefit to Scientists and Programs would be to provide the necessary Data Management support and training to help jump-start a task or program to more effective and efficient Data Management in fulfillment of the Program's overall mission. On-going Data Management Support at the task or program level would have to be addressed through temporary Fiscal Year Funding of a Data Management (DM) Support person or the permanent hiring of a DM Support person at the Specific Task or Program needing the help.</p>	<p>Little to none: There may be some donation of hours during the White Paper compilation phase depending on complexity of the reporting, the number of people serving on the study team, and the level proposal funding.</p>	<p>\$3 3. 00 0 to \$5 20 00</p>
<p><b>Facilitating Knowledge Integration With a Monitoring Protocol Registry</b> – Efforts to identify, collect, and characterize online monitoring protocol libraries will provide a valuable reference resource to USGS scientists and foster coordinated science and integration opportunities</p>	<p>- Identify, collect, and characterize existing online monitoring methods and protocol collection tools that USGS manages or is a substantial collaborator.  - Identify the common elements between existing protocol libraries content and functionality.  - Evaluate results of the USGS Monitoring workshop scheduled for December 2011, that will provide information about stakeholder needs to form the future scope of monitoring library components and functionality.  - Consult with IT staff teams to determine best approaches for advancing interoperability between the systems for capturing in the recommendations.  - Develop mechanism via the Data Management website for USGS scientists to identify their needs with regards to seeking monitoring protocols for a particular methodology and or other protocol access, reference, and citation needs.</p>	<p>- Characterize existing protocol libraries, content, and categorization of content): 160 hours – 2 FTE, 1 pay period each (\$9,000);  - Leverage current NRMP participation by CSAS staff and PNAMP travel supported by CSAS  - Needs assessment (input from user community)- (inkind) staff time for outreach to user community  - Evaluation of current tools vs. needs- inkind) staff (with knowledge of tools) time to help compare needs and tool functionality  - Recommendations for next steps; prioritized implementation strategy – staff time (including IT staff time) 160 hours – 2 FTE, 1 pay period each (\$9,000)  - Leverage Web developer time of Phase 2 of Data Management Website</p>	<p>Phase 1:  - Centralized access to existing tools that collect documented monitoring protocols through the Data Management website  - Leverage the Data Management website as a mechanism for collecting USGS scientist needs for specific protocols and promote additional content into the monitoring library resources.  - Common elements identified among existing protocols that will enable interoperability among the systems  - Recommendations to CDI Data Management Working Group of which protocol libraries capture the scope of USGS scientists' research for various disciplinary work or communities of practice.  Phase 2:  Establish a working group to evaluate recommendations, and determine how complementary (terrestrial and aquatic research focused) protocol libraries could achieve interoperability</p>	<p>- Access to others' monitoring protocols, methods, study designs, etc. – knowledge sharing  - Increased awareness of opportunities for collaboration with other scientists across the U.S.  - Access to online tools that provide templates for consistent documentation of information, which can be a component of data management and best practices plans – help scientists meet requirements or future requirements  - Ability to cite published protocols in Methodology section of project metadata, project data management plan, and other documentation  - Potential for cross-linking monitoring projects to protocols. USGS scientists anticipating funding through Columbia Basin Fish &amp; Wildlife Program must document protocols and methods in MonitoringMethods.org in order to be considered for funding</p>	<p>- PNAMP reimbursable dollars to support staff time – 1 pay period  - CSAS Science Data Mgmt Staff-- 2 people for a total of 4 pay periods (includes CDI co-lead; Science Data Coordination Network)</p>	<p>F Y 12  P ha se 1: \$1 00 0 F Y 13  P ha se 2: T B D ba se d o re co m en da tio ns fr o m P ha se 1</p>

<b>USGS Survey of Scientists</b>	<ul style="list-style-type: none"> <li>- Repurpose and leverage DataONE Scientists Survey</li> <li>- Survey USGS Scientists</li> <li>- Compile and analyze results</li> <li>- Post results</li> </ul>	<ul style="list-style-type: none"> <li>- Project Manager</li> <li>- Assistance from Associate Directors</li> <li>- Statistician assistance</li> </ul>	<ul style="list-style-type: none"> <li>- A completed USGS survey with results compiled and analyzed.</li> </ul>	<ul style="list-style-type: none"> <li>- Inform our future actions to assist in USGS data management practices</li> <li>- Results of the survey will help identify where USGS is performing really well in data management, and where some gaps may exist that we can look to improve. This information will benefit scientists as they see implementation of tools, policies, or resources that will help them better do their science.</li> <li>- Identify where USGS is performing really well, and where some gaps may exist that we can look to improve.</li> </ul>	\$10,000	Potentially \$0 /In-kind funding
<b>Data Exit Survey for USGS Scientists</b>	<ul style="list-style-type: none"> <li>- Determine if any existing procedures are in practice within the bureau.</li> <li>- Compile results and add additional items from the team.</li> <li>- Create Exit Survey for USGS employees that determines if the Federal records the employee was involved with are adequately addressed.</li> <li>- Work with Office of Science Quality and Integrity to update Survey Manual</li> </ul>	Staff time only.	A USGS exit survey /interview, given to existing employees that asks such questions as "Has your data been archived?", "Is the metadata complete?", "Where is the data located?"	Establishes information, including location and status, of valuable USGS data that can be potentially re-used by future USGS scientists.		Potentially \$0 /In-kind funding
<b>Establish a formal process for USGS Data Standards</b> (Note: we are not pursuing this project this FY; this project is listed here as a reminder for a potential FY13 project.)	Create a Data Standards Process for the USGS (data elements). Includes evaluation of existing processes used by US and international organizations that could be adopted. Steps should include Propose, Evaluate, Approve, and Implement. The process will include proposing and adopting existing standards whenever possible.		<ul style="list-style-type: none"> <li>- The process itself.</li> <li>- An enterprise data dictionary that identifies and promotes the USGS data standards. Some standards already exist (ex: FIPS).</li> <li>- Criteria for proposing a new data standard for USGS that addresses a specific data quality or integration challenge, and that is not covered by an existing standard. Include a RFC component.</li> <li>- Mechanisms for the USGS to support and participate in current national and international standards organizations.</li> </ul>			TBD

## Citizen Science Working Group


Project Topic	Tasks	Resources Required	Deliverables	Benefits to USGS Scientists	In-Kind Funding Provided	Total Funding Requested
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<p>USGS Citizen Science Workshop</p>	<ul style="list-style-type: none"> <li>• <b>Plan and Conduct Workshop</b> <ul style="list-style-type: none"> <li>• Plan workshop</li> <li>• Conduct workshop</li> </ul> </li> <li>• <b>Communicate Workshop Findings</b> <ul style="list-style-type: none"> <li>• Prepare workshop materials (deliverables) for publication</li> <li>• Publish informal workshop report (to CDI)</li> <li>• Publish formal workshop report (OFR)</li> <li>• Report out findings at large national science meeting, e. g., the Participatory Science for Conservation Conference (PSCC)</li> </ul> </li> <li>• <b>Preserve and Share Knowledge</b> <ul style="list-style-type: none"> <li>• Set up and populate USGS Citizen Science website (extranet)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>In-kind Costs</b> <ul style="list-style-type: none"> <li>• Program Committee: 10 FTE (1440 hours)</li> <li>• On-Site Logistical Support: 5 FTE (3 days)</li> <li>• Participant Attendance (35 estimate)</li> <li>• Workshop Committee Attendance (4)</li> <li>• Poster Session</li> </ul> </li> <li>• <b>Direct Costs</b> <ul style="list-style-type: none"> <li>• Travel: 2 Plenary Speakers and 3 others in need</li> <li>• Workshop Committee Attendance (6)</li> <li>• Workshop Refreshments</li> <li>• Distributed Materials (name tags, folders, agendas, abstracts, list of participants)</li> <li>• OFR Preparation (0.1 FTE/ 12 months)</li> <li>• EPN Services</li> <li>• Website Preparation (0.05 FTE/ 100 hours)</li> <li>• Travel to PSCC or other suitable large national science meeting</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>1. <b>Workshop</b></li> <li>2. <b>Reports:</b> <ol style="list-style-type: none"> <li>a. <b>Open-File Report</b> (formal)</li> <li>b. <b>CDI Workshop Report</b> (informal) - Snapshot of Citizen Science Project within USGS</li> </ol> </li> <li>3. <b>USGS Citizen Science Website</b></li> <li>4. <b>Action Plan</b> for future directions in citizen science research within the USGS/DOI</li> <li>5. <b>Knowledgebase:</b> Collection and Sharing of <b>Best Practices</b></li> <li>6. <b>Proposed Guidance on Crowd-Sourced Citizen Science</b> Relative to USGS Volunteer Handbook</li> </ol>	<ul style="list-style-type: none"> <li>• <b>Mission Area Benefits</b> <ul style="list-style-type: none"> <li>• <b>Climate:</b> National Phenology Network provides extensive baseline datasets for comparison when researching the effects of climate change</li> <li>• <b>Hazards:</b> Open Street Map assists rescuers during disasters; Did You Feel It? provides more data about earthquakes and their effect on citizens</li> <li>• <b>Ecosystems:</b> National Phenology Network and Breeding Bird Survey provide extensive datasets about species that would not be collected otherwise</li> </ul> </li> <li>• <b>Increased exposure and recognition</b> for USGS CS projects within the larger scientific community, not just in their local Science Centers.</li> <li>• <b>Greatly expand data collection potential</b> by harnessing citizen scientists. Citizen scientists can provide a broad geographic 'sensor network' beyond our scientists' reach.</li> <li>• <b>USGS researchers made aware of internal and external citizen science projects and their potential value</b> to non-participating research programs</li> <li>• <b>Potential to leverage existing work</b> and achievements from other initiatives such as DataOne's Public Participation in Science and Research (2 CSWG members overlap) and Cornell's Citizen Science Central.</li> <li>• <b>Potential to leverage efforts of and create synergy among the CS researchers and the USGS External Communications and Citizen Engagement</b> team in the Office of Communications, and other DOI initiatives such as the Youth In the Great Outdoors and the White House's America's Great Outdoors programs.</li> <li>• <b>Snapshot of status of citizen science research</b> within the USGS/DOI Agencies and partners</li> <li>• <b>Increased awareness of citizen science activities within USGS/DOI and partner agencies;</b> workshop report can be distributed to other agencies to inform and educate on our efforts;</li> <li>• <b>Make USGS science more approachable and understandable</b> to students, teachers, and the general public;</li> <li>• <b>Expand science knowledge and scientific literacy</b> among citizen participants.</li> </ul>	\$87,065	\$39,331
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⚠ For more detailed information about the proposed workshop's purpose, scope, outcomes, etc., see the CSWG's:

- ★ Detailed draft of the [Citizen Science Workshop Proposal](#)
- ★ Workshop [Ideas and Discussion](#) page
- ★ Draft [Workshop Agenda](#)

## Attachments

File	Modified 
Microsoft Word 97 Document Snapshot_FY12_CDI_Proposal.doc	Oct 04, 2011 by sholl@usgs.gov
PDF File CDI_DataMgmtPlanFramework_Proposal.pdf	Oct 13, 2011 by Burley, Thomas E.
Microsoft Powerpoint Presentation CDIBriefingtoKevinLinda.pptx CDI FY 2012 Proposals Presentation to Executive Sponsors	Jan 19, 2012 by wsmcewen@usgs.gov
PDF File Snapshot_FY12_CDI_Proposal_ReducedScope_final.pdf Final NWIS Snapshot Tool proposal	Apr 03, 2012 by jcarlino@usgs.gov

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| USGS researchers made aware of internal and external citizen science projects and their potential value to non-participating research programs |