

Fiscal Year 2012 National Environmental Information Exchange Network Grant Program

Solicitation Notice

**U.S. Environmental Protection Agency
Office of Environmental Information
Office of Information Collection
Information Exchange and Services Division
Information Exchange Partnership Branch
August 2011**



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Exchange Network Grant Program
Solicitation Notice**

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FY 2012 National Environmental Information Exchange Network Grant Program Solicitation Notice

Overview Information

Agency Name and Office: U.S. Environmental Protection Agency (EPA), Office of Environmental Information (OEI)

Funding Opportunity Title: FY 2012 National Environmental Information Exchange Network Grant Program

Announcement Type: Availability of Funding Solicitation Notice

Funding Opportunity Number: EPA-OEI-12-01

Catalog of Federal Domestic Assistance (CFDA) Number: 66.608

Dates: November 4, 2011 – Deadline for submitting applications to EPA
July 31, 2012 – Expected Award of FY 2012 Exchange Network Grants

I. Funding Opportunity Description

EPA, states, tribes, and territories, are working together to implement the Exchange Network (EN), a secure, Internet- and standards-based way to support electronic data reporting, sharing, and integration of both regulatory and non-regulatory environmental data. EN Partners exchanging data with each other or with EPA, should make the Exchange Network and the Agency's connection to it, the Central Data Exchange (CDX), the standard way they exchange data and should phase out any legacy methods they have been using. More information on the Exchange Network is available at www.exchangenetwork.net.

The Exchange Network Grant Program provides funding to states, tribes, inter-tribal consortia and territories to develop and implement the information technology and information management capabilities they need to actively participate in the Exchange Network. This grant program supports the exchange of environmental data and collaborative work within the Exchange Network. Grantees may also use grant funds for the standardization, exchange and integration of geospatial information to support work to preserve and improve the environment, natural resources, and human health.

I-A. Background

EPA and its state, tribal, and territorial partners continue to invest collaboratively to expand the Exchange Network. In 2007, the Exchange Network Leadership Council (ENLC) issued the Exchange Network Strategic Plan that committed to “building a state-of-the-art Environmental Information Exchange Network which will become the preferred method for exchanging environmental data in support of better environmental decision-making.” The Plan’s objectives include completing infrastructure, exchanging environmental data, and expanding use of the

Network to support environmental decision-making. EN Grant Program applicants can access the EN Strategic Plan at <http://www.exchangenetwork.net/ENStrategicPlan.pdf>.

EPA expects the statutory authority for the Fiscal Year 2012 Exchange Network Grant program to be provided under the State and Tribal Assistance Grant (STAG) heading within EPA's Fiscal Year 2012 appropriation act. The FY 2012 President's Budget requests \$10,200,000 for the National Environmental Information Exchange Network Grant Program. Funding of grant applications under this Solicitation Notice is subject to the availability of program funds in the FY 2012 annual appropriation for EPA.

I-B. Grant Program Funding History and Results

FY 2012 is the eleventh year of the Exchange Network Grant Program. From FY 2002 to FY 2011, EPA has provided approximately \$162 million for state, tribal, and territorial awards and associated program support through the grant program. As of June 2011, all 50 states, 86 tribes and five territories have participated in developing the Exchange Network at some level. For descriptions of previously awarded Exchange Network grants, please see <http://www.epa.gov/exchangenetwork/grants/index.html>. For information on the progress of the data exchanges, see <http://www.exchangenetwork.net>.

I-C. Assistance Activities

This Solicitation Notice requests that states, tribes, inter-tribal consortia, and territories develop and submit applications to support the exchange of data among Exchange Network partners. Applications must focus on the Exchange Network priorities stated in Section I-E. Applications must commit to and clearly describe the development and implementation of EN tools and services reusable by other partners or the development and implementation of technologies and services directly related to Exchange Network activities. Examples of EN activities are contained in Section I-E and in Appendix B. Applicants may propose projects that include activities other than those listed as examples, provided they are consistent with the EN priorities.

EPA will determine the eligibility of each applicant (see section III-A). EPA will then evaluate applications from eligible applicants based on the evaluation criteria in Section V-A. Appendix B of this Solicitation Notice offers more detailed information on data exchanges and priority EN project areas. Applicants are responsible for reading and complying with the instructions and criteria found in this Notice.

I-D. Environmental Results Supported by Assistance Activities

EPA's mission is to protect human health and the environment. Timely access to information supports strong environmental decision-making and improves the ability of EPA, with its state and tribal partners, to carry out that mission. The Exchange Network helps states, territories, tribes, and EPA share environmental information more efficiently and effectively over the Internet. Efficient sharing of high-quality data among EN partners strengthens their ability to make sound environmental decisions including improved priority setting and resource targeting.

Applications under this Solicitation must clearly demonstrate support of the EPA 2011-2015 Strategic Plan, Cross-Cutting Fundamental Strategies, Objectives of "Strengthening State, Tribal,

and International Partnerships” and “Expanding the Conversation on Environmentalism”. (EPA’s 2011-2015 Strategic Plan can be found at: <http://epa.gov/planandbudget/strategicplan.html>)

It is EPA policy to directly link work supported by assistance agreements to the Agency’s mission and Strategic Plan. Grant applications, assistance agreements, and work plans must all have outcomes that lead to or are instrumental in achieving environmental results supporting Agency’s mission and Strategic Plan goals.

Goals, Outputs, Outcomes and Environmental Results

EPA recognizes that Exchange Network projects do not *directly* produce environmental results, and will therefore evaluate applications based on the major technical and non-technical outputs and outcomes of the proposed work. **Each proposed goal should have at least one outcome the applicant expects will lead to or be instrumental in achieving an environmental result.**

<p>Examples of Project Outputs:</p> <ul style="list-style-type: none"> ➤ development of schema ➤ development of publishing tools ➤ issuance of RFPs <p>Examples of Project Outcomes:</p> <ul style="list-style-type: none"> ➤ improving the timeliness and accuracy of environmental data ➤ reducing burden and costs associated with data management and reporting ➤ supporting better decision-making by building data access for environmental professionals and the public ➤ facilitating place-based decision-making through the inclusion of quality locational data which transcend jurisdictional boundaries

Figure 1-1 below shows an example of relationship of a proposed goal, its outputs and its outcomes leading to environmental results.

Goal 1 – Implement WQX Flow	Goal 1 Outcome(s)
	1. Supports timelier, more accurate data to improve environmental decision-making by Agency managers 2. Supports better understanding of environmental conditions by the public and other interested parties.
Output	Scheduled Date
1.1 Select contractor for flow	December 2012
1.2 Data mapped to XML schema	March 2013
1.3 Implement sustained WQX Flow	September 2013
1.4 Written documentation of implementing WQX	January 2014
1.5 Publish web service	September 2014

Figure 1-1: Example workplan for an EN flow showing the relationship of goals, outcomes and outputs

- Each goal should result in a major deliverable, such as a sustained data flow.
- Applications should list and schedule major outputs that lead to achieving a goal.
- Each goal should have at least one outcome that leads to environmental results.

I-E. Program Priorities

EPA expects Exchange Network assistance agreement supported projects to improve the exchange of and access to high-quality environmental data from public and private sector sources. With this outcome in mind, applications should demonstrate the implementation of the tiered EN program priorities below. Applications that include tier 1 goals will receive more points than those with tier 2 goals, which, in turn, will receive more points than those with only tier 3 goals (see section V for more details).

Tier 1 Activities:

- Development and deployment of AQS, RCRAinfo, UIC, data exchanges (EPA will count funding requests for a state's second UIC program that expands the types of wells included in the data flow as Tier 1. EPA will count funding requests to implement additional RCRAInfo modules as Tier 1).
- Network publishing using web services to allow EN partners and the public to access, integrate, and analyze information from sources across the Network.
- **Collaborative Opportunity:** a partnership application that includes joint State and/or Tribal efforts to map to the SDWIS schema, expanded to include compliance monitoring (e.g., parametric, sampling schedules) data, and development and deployment of web services that Exchange Network partners can use to consume the data specified in this expanded schema.
- **Collaborative Opportunity:** Transitioning to one of the cloud based node platforms that EPA will implement. EPA is evaluating two cloud models for the Exchange Network including a multi-instance node model and a multi-tenant application model (descriptions of each cloud model and more details on this collaborative opportunity can be found in Appendix C). EPA will setup and maintain this infrastructure in a central, shared cloud environment. EPA expects these models will be most valuable for small to medium sized partners needing more cost efficient ways to manage their nodes and decrease operational costs. EPA is currently developing and testing the details of these models. The focus of this opportunity is to cover the transition cost for partners to move from a physical node implementation to either a virtual node (multi-instance) or into the multi-tenant (shared) node implementation. **Applicants should clearly state which of the two cloud models they are requesting funding for. Funds for this activity will be awarded as cooperative agreements.**

Tier 2 Activities:

- Development and deployment of data exchanges for national priority systems, other than those in tier 1 and as identified in section II of Appendix B, including:
 - Emission Inventory System (EIS)
 - Electronic GHG Reporting Tool (eGRET)
 - Integrated Compliance Information System - National Pollutant Discharge Elimination System (ICIS-NPDES)
 - Net Discharge Monitoring Reports
 - Assessment TMDL Tracking and Implementation System (ATTAINS)
 - eBeaches
 - Safe Drinking Water Information System (SDWIS) (the standard SDWIS data exchange for reporting violation data)
 - Water Quality Exchange (WQX)

- Facility Registry System (FRS)
 - Toxic Release Inventory System (TRIS)
- Development and implementation of applications using web services to allow data access to EN partners and the public; projects must use EN technology that can be shared by EN partners
 - Enhancement (adding new data elements, expanding geographic coverage, additional parameters, historical data) of existing priority data exchanges
 - Integration of FRS web services into state data systems
 - Expansion of national priority system data exchanges already implemented by the applicant to potential network partners that are ineligible to apply for Exchange Network grants on their own (e.g., states partnering with locally delegated governments) through collaborative re-use of existing tools and services
 - Development and deployment of a Cross-Media Electronic Reporting Rule (CROMERR) system upgrade, described in a CROMERR application previously approved by EPA
 - **Collaborative Opportunity:** Partnership to develop multi-program CROMERR application for states that currently do not have an enterprise-wide approach; application should seek to leverage existing solutions approved by EPA.
 - **Collaborative Tribal Opportunity:** Tribal governments and inter-tribal consortia are eligible to apply for Exchange Network grants to build tribal capacity that will result in enhancing environmental programs on tribal lands and the ability to share environmental data electronically with EN partners. Collaborative tribal capacity building applications must include multiple tribes and identify tribes with existing capacity that can serve as mentor. Collaborative tribal capacity applications must identify specific outputs and outcomes that result in the increased ability to share environmental information/data electronically with EPA and/or other EN partners (e.g., developing a backend database for a priority data system).

Tier 3 Activities:

- Development and deployment of other innovative data exchanges (e.g., emergency response, open dump, surface coal mining data integration and reporting, support for sustainable development through sharing data related to transit, zoning/master plan, building permits and LEED buildings and infrastructure initiatives such as water quality laboratory data reporting) that are applicable to multiple partners.
- Geo-enabling national priority system data exchanges
- Implementation of *new*, open-source Node 2.0-compliant tribal nodes or node clients (tribal requests for resources should be limited to hardware needs and installation/configuration in applicants environment); please note that grant resources are not available in FY 2012 to support upgrading existing nodes to the Node 2.0 specification.
- Additional activities identified by program offices in Appendix B

EPA will score an innovative application as Tier 1, such as the Homeland Emergency Response System (HERE), if the applicant will be implementing a new national or priority system data flow for SDWIS, UIC, AQS, or RCRA Info. For example, EPA would score an application that includes completion of the RCRAInfo Handler data exchange as a component of a HERE exchange as Tier 1. If, on the other hand, the applicant is implementing an application such as HERE that is integrating existing data flows, and the application does not propose a new Tier 1

flow, then EPA would score this application as either Tier 2 or Tier 3 based on the goals included in the narrative. For example, a application that includes HERE implementation, integrating an *existing* RCRAInfo Handler data exchange and a new implementation of WQX would be a Tier 2 application.

I-F. Partnership Agreements

In addition to the collaborative opportunities identified in the previous section, applicants may propose collaborative activities such as:

- pursuing priority activities in formal collaboration with other Exchange Network partners;
- developing, with partners, exchanges of data not previously available or exchanging data not previously shared among partners, such as environmentally-related human health data; geospatial data; data needed to fill current data gaps; or data related to pollution prevention practices, technologies, or case studies; and
- developing, with partners, exchanges of data EN partners need to address environmental issues across a multistate region or in support of a Large Aquatic Ecosystem (e.g., Gulf of Maine, Great Lakes, Long Island Sound, Chesapeake Bay, San Francisco Bay-Delta, Monterey Bay, Lake Tahoe Puget Sound, U.S./Mexico border, Gulf of Mexico). One example of such a project would be to use the Exchange Network to share watershed monitoring data and the analytical results produced by watershed analysis tools.

Project narratives and budgets should explain specifically why the proposed project requires additional resources available through a partnership assistance agreement. Reasons for additional funding may include project complexity or activities in support of partner collaboration. See Section III-C, “Eligibility Criteria for Partnership Applications,” before making any financial commitments to project partners or listing these partners in your application.

II. Award Information

The Catalog of Federal Domestic Assistance number for the Exchange Network Grant Program is 66.608 (<http://www.cfda.gov>).

II-A. General Information

In FY 2012, EPA expects to award about \$10,000,000 for 40 to 50 grants of up to \$350,000. The exact number of grants will depend on the final amount of EPA’s appropriation for the grant program, the number of applications submitted to EPA by the application deadline, the amounts of proposed budgets, and the outcome of application reviews.

EPA expects that most awards will be in the \$50,000 to \$200,000 range. **Awards to a single applicant cannot exceed \$200,000. EPA may make a limited number of awards to collaborative, partnership assistance agreements. Budgets for these projects cannot exceed \$350,000.** EPA remains committed to, at a minimum, awarding tribal assistance agreements of approximately 10 percent of the appropriated funds. The amount awarded to tribes may be greater than this minimum level, depending on the merit of tribal applications and on the competitive review of all applications. The standard period of performance for each project is

two years. EPA expects to announce the FY 2012 Exchange Network Grant program awards during April 2012 and award the grants by August 2012.

EPA reserves the right to partially fund applications by funding discrete portions or phases of proposed projects. If EPA decides to partially fund a project, it will do so in a manner that does not prejudice any applicants or affect the basis upon which the application or portion thereof, was evaluated and selected for award, and therefore maintains the integrity of the competition and selection process.

Additional Awards: EPA reserves the right to make additional awards under this announcement, consistent with Agency policy, if additional funding becomes available after the original selections. EPA will make any additional selections for awards no later than six months from the date of the original selections.

II-B. Types of Assistance

EPA may award assistance agreements funded through the Exchange Network Grant Program as grants or cooperative agreements, in-kind services, or performance partnership grants. EPA will consider an applicant's preferences when the Agency decides what type of assistance to award.

EPA uses assistance agreement vehicles to transfer funding and services to a recipient to accomplish a public purpose. Unlike contracts, grants are structured and managed to ensure the project benefits the recipient toward the identified public purpose. Exchange Network assistance agreements allow recipients to develop infrastructure, systems, and capacity to electronically report environmental information and participate fully on the Network. Applicants should identify and justify requests for the various structural elements available within their assistance agreement to best achieve their project goals. EPA will consider the following options for awarding EN resources:

- **Grant or Cooperative Agreement.** Grants represent direct funding to a recipient to support an identified project with defined environmental results. A cooperative agreement anticipates substantial involvement from EPA, in collaboration with the recipient, to achieve project results. If the recipient does not identify a preference, EPA's default award will be a grant.
- **Direct Funding or In-Kind Services.** EPA will consider grantee requests to use all or a portion of awarded grant funds to provide in-kind services to the recipient through an EPA contract vehicle. Applicants should request and justify project efficiencies they expect from this approach.
- **Single Grant or Performance Partnership/Consolidated Grants.** An applicant whose organization has an existing Performance Partnership Grant (PPG) with EPA may request any new grant recommended for funding be incorporated into the PPG. Similarly, a territorial applicant whose territory has a Consolidated Grant (CG) with EPA may request that new awards be incorporated into the CG. Absent a request from the recipient for inclusion within a PPG or CG, EPA will award the grant in a stand-alone vehicle.

II-C. Funding Restrictions

Applicants may propose EN project funding for costs associated with personnel salaries and fringe benefits, Intergovernmental Personnel Act Agreements (IPAs) travel, travel related to Exchange Network activities, equipment, supplies, contractual costs, in-kind services provided by EPA, and indirect costs. Applicants may *not* use EN funding for the following functions (see Appendix A for definitions.):

- **Construction costs.**
- **Operations and maintenance** including previously developed and implemented EN projects.
- **Workshops and Conferences** that are not initiated, advertised, and conducted for the benefit of the recipient and other state, tribal, territorial, or local representatives or public participants or are conducted primarily for EPA's benefit.
- **Pre-Award Costs** not previously requested to cover pre-award costs incurred 90 days or less before the award date.
- **Management Fees** in excess of the direct costs and indirect costs at the rate approved by the applicant's cognizant audit agency, or at the rate provided for by the terms of the agreement negotiated with EPA.

III. Eligibility Information

III-A. Eligible Applicants

Examples of Eligible Project Leads:

- State Department of Environmental Quality
- Territorial Environment Division
- Tribal Council on behalf of two or more tribal environmental and/or health agencies
- State Department of Public Health
- Tribal Water Quality Administration
- State Office of the Chief Information Officer
- Regional Air Quality Board delegated authority for the air program
- State university where the university or the university system is formally designated as an instrumentality of the state

Eligible applicants for the Exchange Network Grant program include states, U.S. Territories (i.e., American Samoa, the Commonwealth of the Northern Mariana Islands, the District of Columbia, Guam, Palau, Puerto Rico, the U.S. Virgin Islands), federally recognized Indian tribes and native villages, and inter-tribal consortia of federally recognized tribes (e.g., the Northwest Indian Fisheries Commission because their membership is primarily federal recognized tribes and they have sufficient controls to ensure tribes will benefit from funding).

Other entities, such as regional air pollution control districts, and some public universities may apply for assistance if they are agencies or instrumentalities of a state under applicable state laws. These entities, as well as other entities that submit applications asserting they are

agencies or instrumentalities of a state, must provide with the application a letter from the appropriate state Attorney General certifying that the applicant is an agency or instrumentality of the state. If the application does not contain the required documentation, the application will not be considered.

EPA recognizes that some EPA programs are delegated to local governments, which are responsible for reporting data to EPA. Local governments that can demonstrate that they are instrumentalities of the state by providing the documentation described in the preceding paragraph, are eligible to apply for Exchange Network Grants. Most local governments that are delegated to implement EPA programs, however, are not agencies or instrumentalities of the state (i.e., a true agency or instrumentality is under the direct control of the state and the management of a state agency or instrumentality may generally be changed by the state executive or other state officials) and, therefore, are not eligible to apply. EPA encourages such entities to partner with a state applicant to allow for their data to be reported and shared through the Exchange Network. Interstate commissions and other interstate entities are not eligible to apply and are also encouraged to partner with a state applicant.

Applicants with questions about eligibility can contact Ryan Humrighouse, Exchange Network Grants Program Manager, at (202) 566-1680 or humrighouse.ryan@epa.gov. They may also attend Exchange Network Users meetings to learn about and discuss Exchange Network projects and technology. Applicants not meeting the eligibility criteria may consider collaborative work with eligible organizations. EPA will only evaluate applications with eligible entities identified as the lead implementing agency for the project.

III-B. Threshold Criteria for Eligibility

These are requirements that, if not met by the time of application submission, will result in elimination of the application from consideration for funding. EPA will only evaluate applications from eligible entities (see above). EPA will notify applicants it deems ineligible for funding consideration as a result of the threshold eligibility review within 15 calendar days of the ineligibility determination.

1. EPA will only review proposed goals that lead to the completion of tiered activities in the Priorities Section (I-E) or additional activities identified in Appendix B. Examples of EN activities are contained in Section I-E and in Appendix B. Applicants may propose projects that include activities other than those listed as examples, provided they are consistent with the EN priorities.

2.a. Applications must comply with submission instructions and requirements in Section IV and Appendix D of this announcement or else they will be rejected. Section IV and Appendix D require that a project narrative not exceed ten pages. EPA will not review any page beyond this limit.

2.b. Applicants must submit applications postmarked or electronically submitted on or before the application submission deadline published in Section IV and Appendix D of this announcement.

2.c. EPA will consider applications postmarked or submitted after the submission deadline late and late submissions will be returned to the sender without further consideration unless the applicant can clearly demonstrate that it was late due to EPA mishandling. Applicants should confirm receipt of their application with Ryan Humrighouse (humrighouse.ryan@epa.gov) as soon as possible after the submission deadline – failure to do so may result in EPA not reviewing your application.

3. EPA will not fund any activities or deliverables for which the entity has previously received funds. If an application is similar to a previously funded activity, applicants must briefly discuss how previously funded activities differ from current activities proposed or how the current application will complement or build on past or ongoing accomplishments.

4. All **state government applicants** must provide an Implementation Plan describing how their state will implement all national and priority system data exchanges (for which the applicant is responsible) identified in the sample Implementation Plan in Appendix H. ***EPA will not review state applications that do not include this Implementation Plan.*** The Implementation Plan must contain sufficient detail to demonstrate a strategic approach to fully implementing the Network for all applicable national and priority system flows. EPA encourages applicants to coordinate with other agencies within their state to provide a comprehensive, statewide Implementation Plan for all national and priority data exchanges within the Exchange Network. The Implementation Plan does not count as part of the 10-page maximum page limit for the project narrative

Territorial and tribal applicants are not required to submit an Implementation Plan. However, territorial and Tribal applicants may wish to include an Implementation Plan to provide increased details on how the specific proposed project will contribute to their long-term participation in the Exchange Network.

At a minimum, the Implementation Plan *must* address the following:

- Identify which of the ten national and priority system data exchanges the applicant is responsible (authorized or delegated) for flowing data to EPA or receiving data from EPA using the Exchange Network. Direct users of national and priority systems are not required to flow data through the Exchange Network.
- Provide the date of your agency's most recent flow for any of the data exchanges it has completed. If your Agency's most recent data flow was before July 1, 2010, explain why the data exchange was discontinued and include the target date for when you plan to resume the flow.
- For each national and priority system data exchange for which the applicant has not yet flowed data, identify the target date for flowing data.
- If there are any national and priority system data exchanges to which the applicant does not plan to participate in, the applicant must explain why. Reasons include not being delegated to implement the program, applicant is a direct user of an EPA system, an EPA system will not be ready to accept data, or other business reasons.
- Describe any technical or organizational impediments to fully implementing all national and priority system data exchanges by the end of 2012 and any solutions you may have

identified. Provide any other information that may help EPA evaluate this Implementation Plan.

5. EPA will not review applications with a project period of more than two-years, applications from a single applicant with a budget of more than \$200,000 or multi-partner, collaborative applications that have budgets over \$350,000.
6. EPA will not review an application or a part of an application that requests funding to upgrade an existing node to the Node 2.0 specification.

III-C. Eligibility Criteria for Partnership Applications

EPA will consider the higher funding limit (\$350,000) for projects that include more than one Exchange Network partner. For these, one eligible entity must lead the collaborative effort and assume program and financial responsibility for the project. Partners must state their support, through a letter of intent or other written mechanism included within the application, for specific project activities within the partnership application.

The lead applicant for a partnership application must demonstrate within their application the project's support for Exchange Network priorities and explain how the partnership components justify a need for the additional partnership funding. **EPA will not consider coalitions formed from within a single state, territorial, or tribal government (e.g., coalition of environment and health departments within a state) as eligible partnerships. EPA will limit funding for intrastate projects of this sort to the maximum funding for a single-jurisdiction grant, which in FY 2012 is \$200,000.**

III-D. Cost Sharing or Matching

Exchange Network grants do not require cost sharing or matching of funds by applicants.

IV. Application and Submission Information

Applicants for the FY 2012 Exchange Network Grant program must submit a application package to EPA by November 4, 2011. EPA will accept applications for National Environmental Information Exchange Network grants in one of two ways: 1) a hardcopy mailed or delivered application, including one original, two copies or; 2) an application submitted electronically through the grants.gov website. EPA will confirm receipt of each application with an e-mail to the contacts listed in the cover letter.

The specific requirements of the application package and each document included with the package are available in Appendix D, which outlines the format for the project narrative (no more than ten-single-spaced pages) and provides detailed application instructions. Appendix G provides a checklist of required documents to submit. Fillable versions of these forms are available at <http://www.epa.gov/ogd/AppKit/application.htm>

EPA may require applicants approved for funding to submit additional or updated documents to complete the funding package. EPA will provide further instructions for submittal of additional or updated documents at that time.

IV-A. Submission Date and Time

Signed and completed application packages as described in Appendix D must be sent electronically via grants.gov, postmarked or delivered by an overnight courier service **no later than 11:59 PM Eastern Standard Time, November 4, 2011**. EPA will return application packages to the sender without further consideration if they are postmarked, sent electronically through grants.gov, or delivered by an overnight courier *after* the published closing date and time.

IV-B. Intergovernmental Review

This funding opportunity is *not* subject to Executive Order (EO) 12372, “Intergovernmental Review of Federal Programs.”

IV-C. Partnership Agreements

EPA awards funds to one eligible applicant as the recipient even if other eligible applicants are partners, co-applicants, or members of a coalition or consortium. The awardee is accountable to EPA for the proper expenditure of funds, programmatic and administrative reporting and attainment of program and environmental results.

Grantees may provide subgrants or subawards to fund partner work within the overall project, provided the recipient complies with applicable requirements for subawards or subgrants including those contained in 40 CFR Parts 30 or 31, as appropriate. Successful applicants cannot use subgrants or subawards to avoid requirements in EPA grant regulations for competitive procurement by using these instruments to acquire commercial services or products from for-profit organizations to carry out its assistance agreement. For more detailed information on partnership agreements, contracts, and subawards, please see Appendix F.

EPA panels will review applicants’ qualifications, past performance, and reporting history, and will consider, as appropriate and relevant, the qualifications, expertise, and experience of formal partners. Applicants should detail their own project roles and responsibilities, experience and past performance and those of their formal partners. Section V, below, describes in detail the evaluation criteria and process EPA will use to make selections under this Notice.

IV-D. Pre-application Assistance and Communications

In accordance with EPA's Assistance Agreement Competition Policy (EPA Order 5700.5A1), EPA staff will not meet with individual applicants to discuss draft applications, provide informal comments on draft applications, or provide advice to applicants on how to respond to ranking criteria. Applicants are responsible for the contents of their applications. However, EPA will respond to questions in writing, including electronic mail, from individual applicants regarding threshold eligibility criteria, administrative issues related to the submission of the application, and requests for clarification about the announcement. Questions should be addressed to Ryan Humrighouse (humrighouse.ryan@epa.gov). Applicants can find answers to frequently asked questions, helpful tips, and links to the required application forms at <http://www.epa.gov/exchangenetwork/grants/index.html>

IV-E. Confidential Business Information

In accordance with 40 CFR 2.203, applicants may claim all or a portion of their application as confidential business information. EPA will evaluate confidentiality claims in accordance with 40 CFR Part 2. Applicants must clearly mark applications or portions of applications they claim as confidential. If no claim of confidentiality is made, EPA is not required to make the inquiry to the applicant otherwise required by 40 CFR 2.204(c) (2) prior to disclosure. The Agency, however, considers competitive applications confidential and protected from disclosure prior to the completion of the competitive selection process.

V. Application Review Information

V-A. Evaluation Criteria

EPA review panels will evaluate and score applications from eligible applicants using the evaluation criteria in this section. The EPA Selection Official will make the final funding decisions based on an applicant's score and other factors as discussed in section V-B.

Project Outputs and Outcomes Leading to Environmental Results (20 points): EPA will evaluate the clarity of project outputs, outcomes and environmental results (such as improved environmental decision-making) and of the method for tracking them using these criteria:

- Does each goal in the application include at least one outcome that leads to an environmental result? These might include outcomes such as improving the timeliness, completeness and accuracy of environmental data; reducing the burden and costs associated with data management and reporting; or supporting better environmental decision making by enhancing data access for environmental professionals and the public, as well as providing high quality locational data, facilitating place-based approaches and community-oriented initiatives. (10 points)
- Does the application include a plan that allows the applicant to track and report to EPA progress towards achieving the project's expected outputs and expected outcomes leading to environmental results? Each grant-funded goal, such as a completed data flow, should have several outputs scheduled over the project period. (10 points)

Project Feasibility and Approach (20 points): EPA will evaluate the feasibility of proposed projects using the following criteria:

- Does the design of the project appear to be within the technical capabilities of the applicant? (5 points)
- Does the application clearly describe project roles and responsibilities for the applicant and, for collaborative projects, each partner? (5 points)
- Does the project narrative clearly describe how the applicant's IT/IM staff will collaborate with environmental or health programs to integrate project outputs into the programs' business operations, thereby increasing the likelihood that the project will achieve its desired outcomes and results? (5 points)
- Applicants must commit to re-use existing EN tools or share new tools with EN partners and register, where appropriate, into ENDS or RCS. For innovative flows, applicants must demonstrate that the project will use Exchange Network technology and result in the development of reusable services for the Exchange Network. (5 points)

Exchange Network Priorities (30 points): EPA will evaluate how an application advances Exchange Network objectives (Section I-D) and the consistency of proposed work with EN priorities (Section I-E). More details on data exchange activities are in Appendix B or the EN website at <http://www.exchangenetwork.net/exchanges/>.

Under this criterion, projects that include at least one Tier 1 activity will receive the maximum 30 points. If an application is for a Tier 2 priority, and does not include any Tier 1 activities, it will only be eligible for a maximum of 20 points. Similarly, projects proposing only Tier 3 activities will receive 15 points.

Budget, Resources and Key Personnel (15 points): EPA will evaluate: (1) the budget's appropriateness including the amount allocated to each goal and its adequacy to support and complete the proposed work; and (2) the qualifications of the project manager and other key personnel to perform the project.

- Does the application include an appropriate amount budgeted for each goal in the project narrative? (10 points)
- Does the application document the qualifications of the project manager and other key personnel to perform the proposed work? (5 points)

Past Performance (15 points): EPA will evaluate applicants on their progress towards achieving the expected results under prior Exchange Network grants and as reported in Exchange Network Grant semi-annual progress reports (past recipients who have a poor semi-annual reporting record will receive a reduced score). If an applicant does not have prior Exchange Network grants then they will be evaluated based on their progress towards achieving the expected results under other prior federal agency assistance agreements (an assistance agreement is a grant or cooperative agreement and not a contract) performed within the last 3 years.

Please note that in evaluating applicants under this criterion, the Agency will consider the information provided by the applicant and may also consider relevant information from other sources including agency files and prior or current grantors to verify or supplement the information supplied by the applicant. If an applicant does not have any relevant or available past performance or reporting information, the application should state this and will receive a neutral score for this criterion of 7 points. If the applicant does not provide any response for these items, the application will receive a score of zero for this criterion.

V-B. Review and Selection Process

EPA review panels will base their evaluation and ranking of applications on the criteria listed in section V-A. The EPA reviewers will submit comments and rankings and make funding recommendations to the selection official, the Assistant Administrator of the Office of Environmental Information (OEI) or his or her designee who will make the final funding decisions. The EPA selection official may decide to partially fund a project to focus limited resources only on those demonstrated goals and results of each project that support the stated Exchange Network priorities within this Solicitation Notice.

Other Evaluation Factors: In making the final funding decisions from among the most highly scored applications, the EPA selection official may consider one or more of the following factors:

- EPA programs' ability or readiness to support proposed project activities;
- geographic distribution of funding;
- selection of higher priority activities over other assistance activities;
- ensuring participation in the Exchange Network by federally recognized Indian tribes and inter-tribal consortia; and
- EPA's capacity to provide any requested in-kind services.

V-C. Anticipated Award Dates

EPA anticipates that it will announce selection decisions in or around April 2012. EPA plans to issue the awards by August 2012.

VI. Award Administration Information

VI-A. Award Notices

EPA will notify all applicants, by telephone, or by electronic or postal mail, of their status in or around April 2012. The notification of a full or partial funding recommendation, which advises the applicant that EPA has preliminarily selected and recommended their proposed project for award, is not an authorization to begin work. EPA's notifications will detail final application requirements and other required information applicants preliminarily recommended for funding must submit. EPA will give applicants instructions and a due date for submittal of the final application package.

VI-B. Administration and National Policy Requirements

Each assistance agreement will include a set of Administrative Terms and Programmatic Conditions, such as requirements for electronic funding transfers, additional financial status reporting, and limitations on payments to consultants, and application of indirect cost rates. These terms and conditions form the basis for the final award of Exchange Network grant funding. Failure to concur with the included terms and conditions will invalidate the award.

In accordance with the Exchange Network Interoperability Policy, applicants must commit, in writing, to the reuse of existing and registered Exchange Network Discovery Services (ENDS) dataflows, nodes, and services whenever they exist. Grantees must agree to register in ENDS new exchange flows and flow components, nodes, and EN services as they are developed. The assistance agreement will include a condition that any node and/or dataflow developed under these and past agreements be registered with the Exchange Network Discovery Service (ENDS) version 2.0. Grant recipients must register any components such as software tools, XML schema, widgets, software tools, or reusable code developed using grant funds in the Reusable Component Services (RCS). EPA will require all recipients of grants issued under this solicitation to meet these conditions.

EPA will include a grant condition in the assistance agreement requiring the recipient to submit a tailored Quality Assurance Project Plan (QAPP) to the EPA Regional Project Officer within 90 days of the award issuance date. This tailored QAPP must describe for each goal and task: the relevant task-specific QA criteria, how the recipient will ensure adherence with the QA criteria, and how the recipient will confirm and document that the project deliverables meet the QA criteria. Completion of the Exchange Network Quality Assurance Reporting Form (QARF) satisfies the requirements for a tailored QAPP. The QA criteria information specified above must be documented for each goal and task under the Quality Assurance Measures section of the Exchange Network QARF. The template for the Exchange Network QARF can be found at <http://www.epa.gov/exchangenetwork/grants/index.html> and in Appendix I of this notice.

VI-C. Reporting

Semi-Annual Performance Progress Reports: Reporting is an important obligation that award recipients agree to undertake when they sign an assistance agreement. Both EPA and recipients are accountable to Congress and to the public for the proper and effective use of Exchange Network assistance funds. Award recipients will submit semi-annual and final technical reports electronically through EPA's Central Data Exchange (CDX) using a web form. EPA will provide successful applicants with detailed instructions for registering with and reporting through CDX at the time of award.

VI-D. Dispute Resolution Provision

Assistance agreement competition-related disputes will be resolved in accordance with the dispute resolution procedures published in 70 FR (Federal Register) 3629, 3630 (January 26, 2005) which can be found at <http://www.epa.gov/ogd/competition/resolution.htm>. Copies of these procedures may also be requested by contacting Ryan Humrighouse at 202-566-1680 or humrighouse.ryan@epa.gov.

VI-E. Subaward and Executive Compensation Reporting

Applicants must ensure that they have the necessary processes and systems in place to comply with the subaward and executive total compensation reporting requirements established under OMB guidance at 2 CFR Part 170, unless they qualify for an exception from the requirements, should they be selected for funding.

VI-F. Central Contractor Registration (CCR) and Data Universal Numbering System (DUNS) Requirements

Unless exempt from these requirements under OMB guidance at 2 CFR Part 25 (e.g., individuals), applicants must:

1. Be registered in the CCR prior to submitting an application under this announcement. CCR information can be found at <https://www.bpn.gov/ccr/>
2. Maintain an active CCR registration with current information at all times during which it has an active Federal award or an application under consideration by an agency, and
3. Provide its DUNS number in each application it submits to the agency. Applicants can receive a DUNS number, at no cost, by calling the dedicated toll-free DUNS Number request line at 1-866-705-5711, or visiting the D&B website at: <http://www.dnb.com>.

If an applicant fails to comply with these requirements, it will, should it be selected for award, affect their ability to receive the award.

VI-G. Unliquidated Obligations

An applicant that receives an award under this announcement is expected to manage assistance agreement funds efficiently and effectively and make sufficient progress towards completing the project activities described in the work-plan in a timely manner. The assistance agreement will include terms/conditions implementing this requirement.

VII. Agency Contacts

The primary EPA Headquarters point of contact is:

Ryan Humrighouse
Exchange Network Grant Program Manager
Office of Information Collection
Office of Environmental Information
Phone: (202) 566-1680
Facsimile: (202) 566-1684
Email: humrighouse.ryan@epa.gov

Mailing Address:

Ryan Humrighouse
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (2823-T)
Washington, DC 20460

Physical Address *(for overnight, or courier deliveries):*

Ryan Humrighouse
U.S. Environmental Protection Agency
1301 Constitution Avenue, NW (Rm 6416E)
Washington, DC 20004

Appendix A

Definitions

Central Data Exchange (CDX)

EPA's CDX is the point of entry to the National Environmental Information Exchange Network (Exchange Network) for environmental data exchanges to the Agency. CDX provides the capability for submitters to access their data through the use of web services. CDX enables EPA and participating Program Offices to work with stakeholders - including state, tribal and local governments and regulated industries - to enable streamlined, electronic submission of data via the Internet.

Communities of Interest

A community of interest is a group of Exchange Network stakeholders who share an interest in the exchange of a specific set of environmental data.

Construction

Construction is the erection, building, alteration, remodeling, improvement, or extension of buildings, structures or other property. Construction also includes remedial actions in response to a release, or a threat of a release, of a hazardous substance into the environment as determined by the CERCLA of 1980.

Data Access Services

Network publishing is a term that refers to using Web Services to make data available to Network users by querying nodes and returning environmental data in the form of XML documents. These services are also called data services. Once these data services are deployed, they can be used in a number of ways such as populating Web pages, synchronizing data between sites, viewing data in a Web service client, or building new sources of data into an integrated application. In other words, data access services are a specific subset of the many possible types of Web Services. Other Web service types include data submission, security, quality assurance, notification and status.

Data Element

A data element is the smallest unit of information stored in and exchanged among Exchange Network partners' information systems. Examples of data elements are the facility name, DUNS number, and inspection date.

Data Exchange Template (DET)

A data exchange template is a standardized format that identifies the types of information required/allowed in a particular document or data exchange. Data exchange templates contain no data, but they define the format for exchange according to data standards and trading partner agreements. A standard template for DET's is available on the Exchange Network Website (http://www.exchangenetwork.net/dev_schema).

Data Standard

A data standard documents an agreement on representation, format and definition of common data exchanged. Exchange Network partners must use data standards that have been approved by the Exchange Network Leadership Council (ENLC). The ENLC has subsumed the activities of the Environmental Data Standards Council (EDSC). See information at <http://www.exchangenetwork.net/standards>.

Demonstrated Node Configurations (DNCs)

Demonstrated Node Configurations are the messaging layer for Web Services that interacts with the Exchange Network. It is based on the Network WSDL which defines the Web Services.

Enhancement

Adding new data elements, expanding geographic coverage, additional parameters, historical data to an existing national or priority data exchange or schema.

Environmental Information Exchange Network (Exchange Network)

The Exchange Network is an Internet and standards-based information network among EPA and its partners in states, tribes, and territories. It is designed to help integrate information, provide secure real-time access to environmental information, and support the electronic collection and exchange of high-quality data and information. The Exchange Network provides a more efficient way of exchanging environmental information at all levels of government. It significantly improves the way EPA and its state, tribal, and territorial partners send and receive information.

Extensible Markup Language (XML)

Extensible Markup Language is a flexible language for creating common information formats and sharing both the format and content of data over the Internet and elsewhere. XML is a formatting language recommended by the World Wide Web Consortium (W3C). For guidance on the development of XML schema for the Exchange Network or related activities of the Network Technical Group, see the Exchange Network Web site at <http://www.exchangenetwork.net>.

Flow Configuration Documents (FCD's)

FCD's are the principle document that captures the detailed data exchange processing design and roles governing the data exchange using narrative text, diagrams and examples. A standard template for FCD's is available on the Exchange Network Website http://www.exchangenetwork.net/dev_schema.

Geographic Information Systems

Geographic Information Systems (GIS) include software and hardware systems that relate and display collected data in terms of geographic or spatial location. GIS allow users to collect, manage, and analyze large volumes of geospatial data and metadata. EPA and its partners use GIS systems to conduct complex environmental analyses.

Geospatial Data

Geospatial data are data that identify, depict, or describe the geographic locations, boundaries, or characteristics of the Earth's inhabitants or its natural or human-constructed features. Geospatial data include geographic coordinates (e.g., latitude and longitude) that identify a specific location on the Earth and data that are linked to geographic locations or have a geospatial component (e.g., socio-economic data, land use records and analyses, land surveys, homeland security information, and environmental analyses). Geospatial data may be obtained using a variety of approaches and technologies, including things such as surveys, satellite remote sensing, Global Position System (GPS) hand-held devices and airborne imagery and detection devices.

Geospatial Technologies

Geospatial technologies include the computer hardware and software that are commonly used to collect, import, store, manipulate, analyze, and display digital geospatial data. These technologies include GIS, global positioning systems (GPS), remote sensing and visualization systems.

In-Kind Services

Services provided by EPA contractors and consultants on specific parts of the project for the recipient. The recipient can request this type of service as part of the grant application, if the in-kind work is directly related to the recipient's application and the applicant is the primary beneficiary of the work. However, EPA reserves the right to decide whether or not in-kind services will be provided. The recipient may not direct the work provided through in-kind services. These services are managed by EPA.

Integrated Project Team

A group of individuals comprised of partner and EPA staff, support contractors and technology vendors organized to design and implement a specific exchange.

Metadata

Metadata are data or information that describes other data. Examples include data that describe how or where the data were collected, whether or not the data comply with agreed-upon data standards, or how the data will be used.

National and Priority System Flows

Thirteen National and Priority System Flows identified in this Solicitation Notice. The flows are: Air Quality System (AQS); Emissions Inventory System (EIS); Greenhouse Gas Data System (GGDS); Integrated Compliance Information System – National Pollution Discharge Elimination System (ICIS-NPDES); Net Discharge Monitoring Reports (NetDMR); Resource Conservation and Recovery Act Information System (RCRAinfo); Assessment TMDL Tracking and Implementation System (ATTAINS); eBeaches; Safe Drinking Water Information System (SDWIS); Underground Injection Control Database (UIC); Water Quality Exchange (WQX); Facility Registry System (FRS); and Toxic Release Inventory System (TRIS).

Network Authorization and Authentication Services

Network Authorization and Authentication Services (NAAS) are a set of centralized information security services that Exchange Network partners can use to authenticate and authorize their users. NAAS provides an efficient way for Exchange Network participants to exchange data, without having to build and maintain their own security system. NAAS supports many levels of security, from PIN/passwords to public Key Infrastructure. All NAAS operations are conducted over a Secure Socket Layer (SSL) channel using 128-bit encryption.

Node

A Node is a Web service enabled server (hardware and software) that provides a point for exchanging information over the Internet. Exchange Network Nodes can gain access to and transmit information using Web Services. In order to achieve interoperability among Nodes, all Nodes must be set up according to the Exchange Network specifications. Specifications, protocols, tools, code, and documentation for building a functioning Exchange Network Node are available at <http://www.exchangenetwork.net/node/node2.0.htm>.

Node 2.0

Node 2.0 refers to the newest version of the Network Exchange Protocol (v 2.0) and the Network Node Functional Specification (v 2.0).

Node Client

A Node client is an application (software code) that can generate Web service messages for using the Exchange Network. A Node client can do the following:

- Submit data in XML format to EPA or other partners using the Exchange Network and
- Request data in XML format from EPA or other partners using the Exchange Network.

Several Node clients that are very user friendly are available on the Exchange Network Web site already. More are on the way. A Node client software developer kit (SDK) is also available to help you integrate Node client requests into your applications. Unlike Nodes, Node clients *cannot* publish data on the Exchange Network (i.e., they cannot listen for or respond to data queries from other Exchange Network partners)

Operational Exchange Network Node

An Exchange Network Node is *operational* if it meets all of the following criteria:

- demonstrates conformance with the Network Exchange Protocol version 2.0 and Network Node Functional Specification version 2.0 by successfully passing the Node Certification Tool test suite.
- implements the minimum Exchange Network security practices (e.g., including the use of Network Authorization and Authentication Services);
- submits data in XML format to EPA or other Exchange Network partners;
- receives data in XML format from EPA or other Exchange Network partners; and
- demonstrates ability to publish data to the Exchange Network by responding to specific data queries from authorized Exchange Network partners.

Outcome

The term “outcome” means the result, effect or consequence of carrying out a project leading to an environmental or programmatic goal. Outcomes may be environmental, behavioral, health-related or programmatic in nature, must be quantitative, and may not necessarily be achievable within an assistance agreement funding period.

Output

The term “output” means an environmental activity, effort, or associated work products leading to an environmental goal, that will be produced or provided over a period of time or by a specified date. Outputs may be quantitative or qualitative but must be measurable during an assistance agreement funding period.

Schema

An XML schema defines the structure of an XML document including data elements and attributes can appear in a document; how the data elements relate to one another; whether an element is empty or can include text; which types of data are allowed for specific data elements and attributes; and what the default and fixed values are for elements and attributes. A set of Network quality assurance Web services is available to validate your XML documents against the schemas using a standard parser. A list of procedural and guidance documents related to schema development is available in the Flow Documentation Checklist document on the Exchange Network Website (http://www.exchangenetwork.net/dev_schema).

Schematron

Schematron is an open source application that is used for validating XML documents against business rules and returning error reports. It uses XML stylesheet (XSLT) technology. The Network Quality Assurance Services use Schematron to validate XML documents against the business rules, as well as supporting a standard parser for schema validation.

Trading Partner Agreement (TPA)

A Trading Partner Agreement (TPA) defines in writing, for specific data exchanges, the participating partners' individual and joint responsibilities in stewardship, security, and other items essential for the effective exchange of information between two or more trading partners on the Exchange Network. A TPA must be developed within six months after the exchange has begun unless a waiver is obtained. The Network Policy Framework including the TPA Procedure can be found at: <http://www.exchangenetwork.net/policy/>. There are a few examples posted on the exchangenetwork.net site. In the near future there will be a section on the site devoted to TPA's.

Web Form

A standard interface that can be downloaded from the Internet, a web form contains blank fields for a user to enter data and submit the form (e.g., environmental reports) to the receiver.

Web Services

Web Services are a software system designed to support interoperable machine-to-machine interaction over a network. They make it easier to conduct work across organizations regardless of the types of operating systems, hardware/software, programming languages, and databases that are being used.

Appendix B

Suggested Exchange Network Data Exchange Activities

This Appendix outlines the data exchange activities that applicants should consider when applying for the FY 2012 National Environmental Information Exchange Network Grant Program. Appendix B contains four subsections: Definition of Standard Milestones for EPA Information System or Data Exchanges, National Priority System Data Exchanges, Non-Regulatory Data Exchanges and Innovative Data Exchanges. This Appendix highlights the EPA Program Office activities related to flows and provides suggested activities for applicants to consider when developing their application.

The Exchange Network Grant Program supports a variety of activities, including the development of common data standards, formats, and trading partner agreements for sharing data over the Exchange Network and implementation of collaborative, innovative uses of the Exchange Network. It also supports the standardization, exchange, and integration of geospatial information to address environmental, natural resource, and related human-health issues.

As part of the standardization mentioned above, grantees must utilize data standards that have been previously approved by the Exchange Network Leadership Council (ENLC) as they develop Exchange Network products and services. In most cases, the data standards needed in implementation will have previously been incorporated in the major EPA systems and Exchange Network data flows. These data standards can simply be re-used. For detailed information on each ENLC approved standard please refer to the Exchange Network website at <http://www.exchangenetwork.net/standards/index.htm>. There is also a separate document (located at the web site cited above) to assist you with understanding how these standards have been implemented within the specific EPA systems. Please note that in some cases applicants may need to identify areas for new data standardization. If so, applications should identify the data standards needed and project the funding required to development them.

The success of the Exchange Network will ultimately depend on how EPA and its partners use the data and information that are exchanged to enhance decision-making and programmatic operations. EPA encourages all partners to use the Exchange Network to meet their business needs. This could include exchanging data that supports national environmental systems, as well as data that support particular state, territorial, and tribal needs. Innovative projects must demonstrate that they will be leverage Exchange Network technology and result in the development of reusable services for the Exchange Network. These reusable services and components should be registered into the Exchange Network Discovery Service (ENDS) and into the Reusable Component Services (RCS).

I. Definition of Standard Milestones for EPA Information Systems or Data Exchanges

This section will assist EPA Programs and Exchange Network partners in better understanding the EPA Program Office activities and establish consistency across all data flows by further defining each milestone. These activities may be already completed, in process or planned at the time of release of this guidance.

Test XML Schema - (Version X) - Schema has completed EPA testing and is ready for limited release to Exchange Network Partners that will support the testing process with EPA to identify any potential issues from real data exchanges. This includes the use of real data sets in XML instance documents. At this stage, Partners will have the constructs for mapping data to their own systems and sufficient time would be needed by these partners to complete that process once the schema(s) is released.

Release final XML Schema – (Version X) - Schema has undergone conformance review and is ready for posting to the Exchange Network Web Site for access by all Exchange Network Partners (www.exchangenetwork.net).

National database available for testing - National database is ready for testing to exchange data in a format that complies with agreed upon standards and rules. For example, the database can support testing the receipt and processing of XML instance documents or a converted format as part of the exchange process.

Availability of EPA Node services for testing - EPA Node services include all central services the program offices need or choose that enable a more efficient data exchange among exchange partners. Examples include XML validation (Schema and Schematron), Network Authentication and Authorization Service (NAAS), XML Gateway services, and the Universal Description and Discovery Integration tool.

Readiness for complete end-to-end testing by Exchange Network Partners - At this stage, the XML schema(s) at a minimum are ready for testing by Network Partners and the National Database and EPA Node services are available for testing. In addition, all EPA accounts have been established for testing (e.g. privileges to NAAS and authorization to the database)

Flow Configuration Document completed or updated - Flow Configuration Documents identify and standardize the minimum information needed by trading partners to execute a data exchange. They describe the technical configuration and business processes used to exchange data between trading partners.

System ready to receive or publish - This status indicates that a sufficient amount of end-to-end testing has occurred and all problems have been addressed, the XML schema(s) has been released, supporting documentation has been finalized, all production readiness reviews have been completed, the Program Office has received approval (if applicable) from the National Computing Center for deploying new code to production, and the appropriate parties (e.g. helpdesks) have been notified of release and have the necessary tools to support Exchange Network Partners' inquiries.

Develop Trading Partner Agreement (TPA) - A Trading Partner Agreement (TPA) defines in writing, for specific data exchanges, the participating partners' individual and joint responsibilities in stewardship, security, and other items essential for the effective exchange of information between two or more trading partners on the Exchange Network. A TPA must be developed within six months after the exchange has begun unless a waiver is obtained. The Network Policy Framework including the TPA Procedure can be found at: <http://www.exchangenetwork.net/policy/index.htm>.

II. National Priority System Data Exchanges

Applicants could propose to implement one or more of the following data exchanges. These exchanges are organized by media: EPA’s priority will be on applications that focus on implementing national and priority system data exchanges. Each of these data exchanges is briefly described below, along with related EPA Program Office information and a description of milestones for the development of the data flow within the FY 2012-2014 timeframe. Applicants need to align their activities with the priorities described in Section I-E.

Air

- Air Quality System (AQS) B-4
- Emission Inventory System (EIS) B-5
- Electronic GHG Reporting Tool (eGRET) B-6

Office of Enforcement and Compliance Assurance (OECA)

- Integrated Compliance Information System – National Pollutant Discharge Elimination System (ICIS-NPDES) B-7
- Net Discharge Monitoring Reports (NetDMR) B-9

Waste

- Resource Conservation and Recovery Act Information System (RCRAInfo) B-11

Water

- Assessment TMDL Tracking & Implementation System (ATTAINS) B-12
- eBeaches B-13
- Safe Drinking Water Information System (SDWIS) B-15
- Underground Injection Control (UIC) Database B-16
- Water Quality Exchange (WQX) B-18

Other Data Exchanges

- Facility Registry System (FRS) B-20
- Toxics Release Inventory System (TRIS) B-23

III. Non-Regulatory and Innovative Data Exchanges

- Enabling Geospatial Data Exchange B-24
- Non-Point Source Best Practice Management Data Exchange (NPS-BMP) B-27

Air Quality System (AQS)

Description:

AQS is the EPA national database system that contains ambient air quality monitoring data, and related location and measurement metadata, collected by state, tribal, and local governments. It is used for regulatory purposes for determining compliance with the Clean Air Act, and for scientific and health effects research. Presently the AQS flow (version 2.2) involves submission of the data to the EPA CDX Node, and manually initiated loading of this data into the AQS database. There are planned upgrades to the AQS flow (version 3.0) to allow submitted files to be automatically loaded into the AQS database. Note: Version 3.0 of the AQS Flow is expected to involve only definition of the Exchange Network Header, with no planned changes to the version 2.x payload.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Report out on compliance with data standards	Complete
Availability of database or system for testing	10/01/2011
Availability of Node services for testing	10/01/2011
Readiness for complete end-to-end testing by States/ Tribes	10/01/2011
System readiness to receive production data to EPA	01/01/2012
Flow configuration document completed or updated	09/30/2011

Additional Activities to be considered by Grant Applicants:

1. Upgrade of reporting agency’s IT infrastructure to allow end-to-end use of XML format for ambient air quality monitoring data. Activities can include support necessary to upgrade existing COTS solutions required to generate XML files for submission to AQS. Grant applications should, wherever possible, promote the development of reusable tools and services. Applicants may want to form partnerships for these development efforts.
2. Development of software for reporting agency Quality Assurance/Quality Control of ambient air quality monitoring data, that is contained in XML files. Applicants may want to evaluate the software developed by the Massachusetts Department of Environmental Protection that automates quality review of monitoring data prior to its publication on the states website and submission to AQS.
3. Software development of interactive tools for the creation and/or editing of XML documents which enforce correct AQS Site and/or Monitor definitions as well XML document validity (i.e. the resulting XML document conforms to the 3.0 schema and all code fields)

Note: A number of commercially available air monitoring data systems are capable of producing data that is formatted in accordance with the XML schema for the AQS data exchange. When used in conjunction with freely available Nodes and data flow plug-ins, partners may be able to easily and efficiently implement the AQS data exchange. EPA encourages applicants to explore making use of these tools when developing Exchange Network grant applications.

Emission Inventory System (EIS)

Description:

The Emissions Inventory System (EIS) is the new information system for storing all current and historical emissions inventory data. It will be used to receive and store emissions data and generate annual and triennial National Emission Inventory beginning with the 2008 NEI.

The National Emissions Inventory (NEI) is EPA's compilation of estimates of air pollutants discharged on an annual basis and their sources. EPA uses the NEI to track emissions trends over time, develop regional pollutant reduction strategies, set and analyze regulations, perform air toxics risk assessments including inhalation risks and multi-pathway exposure, model air pollutant dispersion and deposition, and measure environmental performance as required by the Government Performance and Results Act.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Test XML schema	Completed
Release XML Schema (Draft)	Completed
Availability of database or system for testing	Completed
Availability of Node services for testing	Completed
Readiness for complete end-to-end testing by States/ Tribes	Completed
System readiness to receive production data to EPA	Completed
Flow configuration document completed or updated	Completed

Additional Activities to be considered by Grant Applicants:

EIS reporting will make use of a new schema that is expected to shorten the length of time required to meet reporting deadlines, and reduce burden on state, local and tribal agencies through the use of the Consolidated Emission Reporting schema (CERS). The CERS facilitates the reporting of data from state/local/tribal agencies-to-EPA for the NEI. The schema may also be used for direct facility to state reporting as additional data elements, identified in the Air Force project, have been included for this purpose.

Grant applications could include facility to state reporting and, the modernization of current systems to meet the shortened reporting requirements of the Air Emissions Reporting Rule (AERR) and the incorporation of the CERS.

Electronic Greenhouse Gas Reporting Tool (e-GGRT)

Description:

An electronic greenhouse gas data system developed by EPA will support EPA's final Mandatory Reporting Rule (MRR) for the collection of GHG emissions data from all sectors of the economy. Under EPA's Greenhouse Gas Reporting Program, approximately 10,000 facilities will submit reports to EPA on an annual basis. The first data collection will be for calendar year 2010 and the first reporting deadline will be September 30th, 2011. Following QA of the data, EPA plans to publish the data (with the exception of CBI data) on a publically accessible GHG web portal as well as other agency data portals including the NEI and Envirofacts. In addition EPA plans to make the data available to interested states and tribes through network publishing. The relevant exchange schema, documentation and data flow (including flow configuration document) are being developed through a State-EPA task force (the State-EPA GHG Integrated Project Team). An applicant interested in obtaining data for facilities under their jurisdiction should seek funding to perform the work necessary to receive these data. GHG Reporting Program results will inform future policy by providing a comprehensive, facility-level listing of upstream and downstream GHG emissions. Additional information can be found at: <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Availability of database or system for testing	Summer/Fall 2011
Availability of Node services for testing	Summer/Fall 2011
Readiness for complete end-to-end testing by States/Regions	Summer/Fall 2011
System readiness to share production data with States/Regions	Fall2011
Flow configuration document completed or updated	Spring 2011
Quality assurance of preliminary GHG Reporting Program results	October 2011
Public release of GHG Reporting Program results	December 2011

Additional Activities to be considered by Grant Applicants

Exchange Network grant activities include testing as well as quality assurance of GHG Reporting Program results. States and Regions will be invited to participate in testing the GHG Reporting Program data flow in 2011 using an exchange schema developed with State input via the State-EPA Integrated Project Team. EPA intends to share GHG Reporting Program production results with States and Regions via the Exchange Network approximately 45 days after the September 30, 2011 reporting deadline.

EPA will provide *preliminary* datasets to those States and Regions that are interested in participating in the quality assurance process. Many States already have GHG reporting programs in place that overlap with MRR sources. A comparison of results could, for example, help identify sources that should have reported to the MRR but failed to do so, a concern particularly in the first year.

ICIS-NPDES
Integrated Compliance Information System –
National Pollutant Discharge Elimination System

Description:

ICIS-NPDES, the modernized version of the Permit Compliance System (PCS), supports traditional NPDES wastewater discharge program functions (e.g., permitting, compliance monitoring, and enforcement), as well as new functions for special regulatory programs, such as concentrated animal feeding operations (CAFO) and wet weather concerns. ICIS-NPDES currently accepts XML-formatted discharge monitoring reports (DMR's) and permit-related data via the Exchange Network, and will soon be able to electronically receive inspections-related data. The ICIS-NPDES exchange will be completed with the final release of the Full "batch" implementation of the system, planned for the first quarter of FY2013, and PCS is scheduled to be retired soon thereafter. The Full "batch" implementation enables states and facilities to electronically transfer some or all of their NPDES data into ICIS-NPDES using CDX.

The ICIS-NPDES batch implementation is being accomplished in three parts:

- **Part 1:** Batch DMR for Hybrid States. As of May 2008, *Hybrid States* were able to electronically transfer (batch) their DMR data from their state system to ICIS–NPDES and directly enter all of their non-DMR NPDES data into ICIS–NPDES via the ICIS web screens. Hybrid states typically use ICIS-NPDES to directly manage their NPDES program.
- **Part 2:** NetDMR. As of June 2009, ICIS-NPDES became capable of receiving DMR's (via CDX) from facilities that had electronically signed and submitted them using NetDMR. The NetDMR tool was developed pursuant to an Exchange Network grant managed by Texas with the participation of 11 other states, OEI and OECA. The DMR XML schema components developed in Part 1: Batch DMR for Hybrid States formed the basis for the NetDMR flow.
- **Part 3:** Full Batch States. Full Batch states have their own systems to manage the NPDES program and will electronically transfer (batch) some or all of their NPDES data from their state systems via CDX to ICIS-NPDES. This includes the previously-developed DMR data flow as well as all other NPDES data families. There are currently 16 remaining full batch states to be migrated from PCS to ICIS-NPDES. The full batch work is being accomplished in three releases, organized by data family (permit and facility data; inspection data; and all remaining data families, including enforcement actions and violations).

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Part 1: System readiness to receive production data for Batch DMR for Hybrid states.	Completed

Exchange Network Program Office Activities	
Milestone	Target
Part 2: NetDMR National instance operational for facilities where EPA or selected States are permitting authority. System readiness to receive production facility data for the NetDMR Flow from permitted facilities.	Completed
Part 3: Full Batch States activities *	
System readiness to receive production data for Full Batch Release 1 permit-related data families.	Completed
Release XML Schema (Draft) for Release 2 of ICIS-NPDES Full Batch (Inspection Data Families)	June 2011
Test ICIS-NPDES Inspection Data Families XML schema for Release 2 of Full Batch	August 2011
Readiness for complete end-to-end testing by Pilot States/ Tribes for Release 2 of ICIS-NPDES Full Batch (Inspection Data Families)	August 2011
Final Conformance Review of ICIS-NPDES Full Batch Release 2 (Inspection Data Families) XML schemas	September 2011
System readiness to receive production data for Release 2 of ICIS-NPDES Full Batch (Inspection Data Families) for Pilot States	November 2011
Release XML Schema (Draft) for Release 3 of ICIS-NPDES Full Batch (Remaining Data Families)	April 2012*
Test ICIS-NPDES Remaining Data Families XML schema for Release 3 of Full Batch	June 2012*
Readiness for complete end-to-end testing by Pilot States/ Tribes for Release 3 of ICIS-NPDES Full Batch (Remaining Data Families)	June 2012*
System readiness to receive production data for Release 3 of ICIS-NPDES Full Batch (Remaining Data Families) for Pilot States	Q1FY2013*

* Final details of the ICIS-NPDES Full Batch Phase 3 schedule will be available in early FY 2012.

Activities to be Considered by Grant Applicants

ICIS-NPDES grant applicants should consider the following activities among their opportunities for obtaining grant funding:

- Continue ICIS-NPDES data migration activities in coordination with EPA Headquarters, Regions, States, and data migration workgroup participants.
- Participate on Integrated Project Teams (IPTs), monitor progress, and test the processes for submitting NPDES data families to EPA.
- Participate in node testing processes for new submissions to EPA.
- Develop capability to generate final XML schema for ICIS-NPDES data flows.
- Develop capability to generate draft XML schema for ICIS-NPDES data flows and participate in pilot testing of Full Batch data flow testing.
- Extract and convert the data from State NPDES systems into the XML format needed to submit data to ICIS-NPDES via batch.
- Modify state systems to accommodate the data requirements for ICIS-NPDES.
- Develop requirements and design for extraction tool(s) to pull data out of ICIS-NPDES via the Exchange Network, and import the data to the State database.
- Develop and implement data mappings and extraction tool(s).

Network Electronic Discharge Monitoring Reports (NetDMR)

Description:

Electronic transmission of discharge monitoring reports (DMR's) allows NPDES permitting authorities to get out of the business of printing and mailing hard copy paper DMR forms to thousands of facilities, sorting the paper forms received, keypunching results by hand, and filing the paper forms. The National Installation of NetDMR has been developed collaboratively among a group of states (led by Texas), OECA and OEI to be a common, centrally-hosted electronic DMR application closely integrated with EPA's ICIS-NPDES system. The Central Data Exchange (CDX) is used for the exchange of data between NetDMR and ICIS-NPDES.

Version 1.0 of the National Installation of NetDMR was released for use by permittees of select pilot states and EPA Regions in June 2009, and Release 1.3.3, put into production in June 2011, includes many additional improvements. Nine states and eight EPA Regions now have their own customized instance within the National Installation of NetDMR, and additional instances can be created. States that elect to use NetDMR must also be users of ICIS-NPDES, as NetDMR is closely integrated with EPA's ICIS-NPDES system. NetDMR provides no connection to EPA's Permit Compliance System (PCS), and PCS is scheduled to be retired soon after development of the ICIS-NPDES full batch capability is complete.

States that have specific business reasons why an instance within the National Installation of NetDMR cannot meet their programmatic requirements may wish to develop and deploy an alternative electronic DMR (eDMR) system within their state environment. State-hosted eDMR systems can be used to ensure timely and accurate reporting of DMRs by permittees to the regulatory authority and EPA's ICIS-NPDES system, using CDX and the Exchange Network.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Readiness for complete end-to-end testing by facilities for the NetDMR Flow to EPA.	Complete
XML schema for NetDMR is final.	Complete
NetDMR centrally-hosted instance pilot facility demonstration completed and application approved for production.	Complete
NetDMR centrally-hosted instance ready for testing with authorized states slated for Group I, II, or III production.	Complete
NetDMR operational for facilities where EPA is permitting authority. Readiness to receive production facility data for the NetDMR Flow from EPA-permitted facilities.	Complete
NetDMR centrally-hosted instance ready for Group I and Group II authorized states to move into production.	Complete
NetDMR centrally-hosted instance ready for Group III authorized states to move into production.	December 2012 *

* Note: production implementation dates can be staggered in time, per state and EPA consultation

Activities to be Considered by the Grant Applicants

The 2012 Exchange Network grant process could support efforts by states, in consultation with their EPA Regions, to: pilot test and launch their instances within the National Installation of NetDMR (Area 1); or develop, test, and implement their own eDMR system (Area 2).

Area 1 – Testing and Implementation of State Instance within NetDMR National Installation

Effective implementation includes development of all the business processes to move from a paper-based system to an electronic system, with the understanding that a paper-based system will need to be maintained for several years until all permittees are converted to the electronic system. Applicants could describe the efforts needed by the state to effectively test and launch the use of their instance within the National Installation of NetDMR, and discuss their adoption rate goals and milestones. Applications could also assist states in converting from paper to electronic processes, ensuring that Subscriber Agreements are properly handled according to CROMERR requirements, and ensuring that permit limits are up to date in ICIS-NPDES. Applicants could identify specific production implementation dates that the state preferred for their implementation of the NetDMR tool.

Area 2 – Development, Testing and Implementation of eDMR System Within a State Environment

Some states have specific business reasons why an instance within the National Installation of NetDMR cannot meet their programmatic requirements; thus they need an alternative eDMR system. For states with these requirements, this area will provide support for technical activities that lead to successful implementation of an eDMR system within the state environment. In these cases, applicants might explain why it is advantageous to develop and deploy a stand-alone system (which requires state operation and maintenance). Applicants could discuss costs and milestones associated with deploying and testing the application to ensure it works properly and sends required data to ICIS-NPDES using the approved schema and methodology.

NOTE: A state's participation in either Area 1 or 2 is contingent upon its completion of data clean up and migration from PCS to ICIS-NPDES. Under either Area the grantee could indicate whether the state plans to require mandatory use of electronic submission of DMR's for permits that are renewed after the project is completed.

Resource Conservation and Recovery Act Information (RCRAInfo)

Description:

RCRAInfo is a national, Web-based system which provides data entry, data management, and data reporting functions used to support the implementation and oversight of the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984 as administered by EPA (through its Regions) and authorized States. RCRAInfo identifies and categorizes hazardous waste handlers, and includes high quality information about regulated activities, permit/closure status, compliance with Federal and State regulations, and cleanup activities. Only those that are a delegated authority under RCRA Subtitle C can submit data to RCRAInfo, however, non-delegated states or tribes can receive data from RCRAInfo via RCRAInfo outbound services.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Outbound Web Services evaluation	Completed
Phase I Outbound Web Services Implementation	Completed
Phase I Outbound Web Services Testing	08/2011
Minor release of schema, version 5.3	12/2011
Phase II Outbound Web Services Implementation	12/2011
Phase II Outbound Web Services Testing	03/2012
Convert Load Error Report to XML format	03/2012
Phase III Outbound Web Services Implementation	09/2012
Phase III Outbound Web Services Testing	12/2012
Phase IV Outbound Web Services Implementation	06/2013
Phase IV Outbound Web Services Testing	09/2013

Additional Activities to be considered by Grant Applicants

EPA encourages recipients to evaluate and explore the use of outbound web services and to partner with EPA to identify outbound service needs and requirements. Participants are encouraged to develop innovative ways for interacting with RCRAInfo Data. With RCRAInfo now being fully ready for XML submittal, EPA encourages States to prepare to transition from flat-file data submittals to XML data submittals using CDX. EPA will be working with the States in 2011 to develop a strategy and a schedule for converting completely to XML submissions. Additionally, States that are currently performing double-data entry should seek to use either RCRAInfo inbound or outbound services to eliminate that double-data entry.

Assessment TMDL Tracking & Implementation System (ATTAINS)

(Integrated Reporting (303(d)/305(b)))

Description:

EPA maintains the Assessment TMDL Tracking & Implementation System (ATTAINS) to document assessment decisions reported by States under the Clean Water Act Sections 303(d) and 305(b) and to track Total Maximum Daily Loads (TMDLs). This information is critical to measure environmental outcomes under the EPA Strategic Plan and the Office of Water National Water Program Guidance. The Office of Water Integrated Reporting (OWIR) data exchange meets EPA’s current Integrated Reporting guidance and meets the reporting specifications in the most recent version of EPA’s Assessment Database [<http://www.epa.gov/waters/adb/tools.htm>] The OWIR-ATT data flow provides the means for States to submit Integrated Reporting (303(d)/305(b)) water quality assessment data. States should submit spatial representations of the water assessment units reported in the OWIR-ATT submission using the NHDEvent data flow.

For more information on the OWIR-ATT data flow, please visit <http://www.exchangenetwork.net/exchanges/water/owir.htm>, and for the NHDEvent data flow, please visit <http://exchangenetwork.net/exchanges/water/nhdevent.htm>.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Release XML OWIR-ATT, Attribute Schema – (Version 2.0)	Completed
Separate, update and rename the OWIR-EVT data flow as NHDEvent with updated schema, NHDEvent Version 2.0. Includes separated and updated Flow Configuration Document.	Completed
Receive production attribute data and populate EPA’s ATTAINS IR Regional Review Web site	Completed
Launch Integrated Project Team (IPT) to evaluate system data flow and data elements (outreach)	Summer 2011
Evaluate IPT feedback	Fall 2011
Other Exchange Network activities: Development of Water Quality Conditions and Integrated Reporting Data Standard.	Spring 2012

Additional Activities to be considered by Grant Applicants

- Participate in dialogue about using the Exchange Network as a tool for States to submit Integrated Reporting data via an Integrated Project Team.
- EPA will begin working on the Water Quality Conditions and Integrated Reporting Data Standard. The Data Standard will not apply to the 2012 Integrated Report.
- Identify innovative tools that may enhance the interaction between EPA Regions and States during the 303(d)/IR review and approval process.
- Identify innovative ways to share geospatial information related to Integrated Reporting data and utilize Web-based services and applications.

eBeaches

Description:

eBeaches is the electronic data transmission system that allows EPA to securely receive and display state beach water quality and swimming advisory data as soon as state and local agencies send the data. eBeaches supports the Beaches Environmental Assessment and Coastal Health (BEACH) Act requirement to collect, store, and display beach public right-to-know pollution occurrence data. States should submit spatial representations of the beaches reported in the Beach Notification (PRAWN) and monitoring stations in Beach Monitoring (WQX) submissions using the NHDEvent data flow.

Exchange Network Program Office Activities – PRAWN	
Milestones	Target Completion Date
Test notification XML schema - (Version 2.1)	Completed
Release notification XML Schema – (Version 2.1)	Completed
Availability of database or system for testing	Available
Availability of Node services for testing	Available
Readiness for complete end-to-end testing by states/tribes	Ready
System readiness to receive production data to EPA	Ready
Flow Configuration Document completed or updated	Completed
Separate, update and rename the OWIR-EVT data flow as NHDEvent with updated schema, NHDEvent Version 2.0. Includes separated and updated Flow Configuration Document.	Completed

Exchange Network Program Office Activities – Beach WQX	
Milestones	Target Completion Date
Test Beach Access DB use of WQX XML schema (V2.0)	Completed
Release Beach Access DB use of WQX XML Schema (V2.0)	Completed
Availability of database or system for testing	Available
Availability of Node services for testing	Available
Readiness for complete end-to-end testing by states/tribes	Ready
System readiness to receive production data to EPA	Ready
Flow Configuration Document completed or updated	Completed
Separate, update and rename the OWIR-EVT data flow as NHDEvent with updated schema, NHDEvent Version 2.0. Includes separated and updated Flow Configuration Document.	Completed

Activities and Suggestions to be considered by Grant Applicants

Applicants should consider the following steps prior to data submissions.

- Read all support documentation at <http://www.epa.gov/waterscience/beaches/grants/datausers/index.htm>

- Map systems to the approved national XML schemas.
- Begin linking beach locations consistent with the NHD and the Geospatial One Stop Hydrography Standard. Implement NHDEvent data flow for BEACON beach locations that have been georeferenced to the NHD.
- Quality check organization name (org_id) to sample station (station_id) to beach name (project _id aka beach_id and national project id (EPABEACH) relationship/links to ensure correct stations are linked to corresponding beach.
- Check with other internal state offices for existing Node capability and before developing Node capability for each beach data flow.
- Validate XML instance documents prior to submission via CDX or Node.
- Participate in biweekly Beach conference calls.

Safe Drinking Water Information System (SDWIS)

Description:

The Safe Drinking Water Information System (SDWIS) receives and stores basic inventory and regulatory compliance data for all public drinking water systems in the country. Data flows use XML from state primacy agencies to EPA.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Report out on compliance with data standards	FY 2011
Laboratory to State reporting using XML schema	Completed
Flow Configuration Document updated and/or completed	FY 2011 3 rd Qtr.
XML Schema updated and/or completed	FY 2011 3 rd Qtr.
Availability of database for system for testing	FY 2011 4 th Qtr.
Availability of node services for testing	FY 2011 4 th Qtr.
Readiness for complete end-to-end testing by States/ Tribes	FY 2011 4 th Qtr.
Readiness for submission of production data to EPA	FY 2011 4 th Qtr.
Ready to Receive and/or Publish public water system compliance monitoring data	FY 2012 1 st Qtr.

Additional Activities to be considered by Grant Applicants:

The EPA Administrator’s Drinking Water Strategy includes state sharing of compliance monitoring data (CMD) from public water systems with EPA to improve at the national level the understanding of trends in drinking water quality, program oversight and success.

- If they have not done so already, EPA encourages states using SDWIS State to deploy the Lab-to-Sate module, which allows laboratories to report sample results electronically to state primacy agencies
- States should work with the Drinking Water program to develop and test the CMD XML schema
- Non-SDWIS states/tribes should consider activities that include development of sharable code and data mapping tools and should consider collaborating with other states/tribes
- Encourage the development and sharing of the Exchange Network capabilities for this data flow by supporting database/node installation, training and mentoring opportunities

Underground Injection Control (UIC) Information System

Description:

EPA launched a new UIC national information system in December 2007 and immediately began accepting data through EPA’s Exchange Network. The UIC data system is designed to provide high quality, consistent and complete program information to support EPA’s objective to manage and oversee the national and regional program. The data fields are at well level, with fields for UIC inventory (linked to FRS), permits, geospatial coordinates, inspections, compliance with mechanical integrity, violations and enforcement actions.

As of the start of 2011, 22 of the 69 State and Region UIC programs were submitting data quarterly to the UIC DB, with 4 other programs expected to start submitting data by mid-2011. An additional 16 UIC programs are currently mapping their data to the EPA XML schema and should start submitting by the end of 2011 or early FY 2012. EPA is following a strategy and schedule to engage all 69 programs in mapping their data by 2012 and to start flowing data for all programs by 2013...

A revised XML document (Version 2.0) was released under the same UIC data model to improve performance. All UIC data submitters after May 14, 2010 mapped their data to the new XML schema.

Each state is expected to transition from existing reporting to a single quarterly submission to the UIC data base once it meets the data quality and completeness requirements outlined in a transition data policy memorandum issued in March, 2009.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Release final XML Schema – (Version 1.0)	Completed
Flow configuration document completed	Completed
System ready to receive production data from states	Completed
Release revised XML Schema - -(Version 2.0)	Completed
Revised flow configuration document , other documentation completed	Completed
<i>Other:</i> Successful mapping, conversion of state data consistent with EPA mapping instructions, and node to node submission of source data to EPA’s UIC database (for all 68 UIC programs)	On-going
<i>Other:</i> Validation of data received in EPA’s database after each quarterly submission to address data quality/completeness issues, to continue until transition requirements are met.	On-going

Additional Activities to be considered by Grant Applicants:

- For Class V state programs with no effective existing database, EPA will support activities to build local data system that leads to efficient data transfer to EPA’s database. EPA has

existing data templates and data transfer tools available, and will provide technical support on request.

- EPA requests that UIC applicants to include participation in existing EPA Integrated Project Teams (IPT) in their project narrative.
- Since the UIC DB objective is to phase out of other reporting, EPA requests UIC applicants to address how QA/QC issues raised during the quarterly data submission cycle will be addressed until transition is complete.

Water Quality Exchange (WQX)

Description:

WQX defines the framework by which EPA compiles water quality monitoring data (physical, chemical, biological and habitat) into the STORET Data Warehouse (http://www.epa.gov/storet/dw_home.html). Data are collected by multi-jurisdictional entities via a shared schema. The purpose of the compilation of data in the STORET Data Warehouse is to provide a seamless collection of monitoring data that is not restricted by jurisdictional boundaries. For more information about WQX, please visit <http://www.epa.gov/storet/wqx.html> or <http://www.exchangenetwork.net/exchanges/water/wqx.htm>.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
System readiness to receive test and production data to EPA (WQX v1.0, WQX v2.0 and WQX v2.1)	Completed
WQX Web Tool in production (WQX Web is an XML generation tool that supports all WQX schema data elements)	Completed
De-support for distributed STORET database (WQX data flow will be primary mechanism for submitting data, and STORET database submissions are no longer accepted).	Completed (September 2009)
STORET Warehouse Catalog, Monitoring Location, and Results Web Services available	Completed
Additional STORET Warehouse Web Services release with full USGS NWIS Web Services alignment	Fall 2011
STORET Warehouse web mapping services available**	Completed

** The STORET Warehouse web mapping services are available at the following URL: http://www.epa.gov/waters/geoservices/docs/waters_mapping_services.html. Note that two separate services exist for STORET: STORET_NAD83 and STORET_WMERC.

Additional Activities to be considered by Grant Applicants

- Utilize WQX v2.0 or v2.1 to flow biological and habitat monitoring parameters
- Develop applications that use EPA STORET Warehouse web services (data and spatial) for data integration and analysis
- Adopt and encourage all applicable data standards for data submission and sharing
- Identify innovative ways for sharing continuous monitoring data
- Encourage the development of common catalogue services that provide standard water quality data discovery and publishing to the Exchange Network community
- Build tools that integrate water quality data from various sources (e.g. USGS data) to present a common view of water quality data
- Encourage capacity with small data providers for participating with other data partners and submitting data through WQX and WQX Web
- Develop shareable translation and validation tools to facilitate water quality and biological data exchange.

- Begin linking station locations consistent with the NHD and the Geospatial One Stop Hydrography Standard. Implement NHDEvent data flow for STORET/WQX monitoring locations that have been georeferenced to the NHD.

Facility Registry System (FRS)

Description:

The Facility Registry System (FRS) is EPA’s centrally managed database that provides access to the names, locations, associated program IDs, industrial classification, affiliation and other information for facilities subject to environmental regulations and other sites of environmental interest. These integrated facility identification records allow EPA, its state and tribal partners, web application owners and the public to access environmental information reported from and about facilities and sites. The Facility Id 3.0 (FACID 3.0) schema is available now. It allows EN partners to publish and access facility identification information more easily. FACID 2.3 is still available and supported for those partners not yet ready to move to FACID 3.0.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Test XML schema – NEW FACID Version 3.0 replacing FACID 2.3	Completed
Release XML Schema – NEW FACID Version 3.0	Completed
Availability of database or system for testing	Available
Availability of Node services for testing	Available
Readiness for complete end-to-end testing by states/tribes	Ready
System readiness to receive production data to EPA	Ready
Flow configuration document completed or updated	Completed
Availability of GHG Facility Records	Available
Availability of State/Tribal Master Records by Web Services	Available
Availability to receive Polygon Locational data	Available

Outbound web services available via FACID 2.3:

There are two methods of service requests that are functionally used to retrieve data from FRS through the Web Services with the Central Data Exchange. They are Query and Solicit service requests. Query requests are synchronous while Solicit requests are asynchronous.

Name	Parameters	Type of service request (Solicit and/or Query)
GetFRSFacilityByRegistryID	Registry ID	Solicit and Query
GetFacilityByName	State Code and Facility Name	Solicit and Query
GetFacilityByCityName	State Code and City Name	Solicit and Query
GetFacilityByCountyName	State Code and County Name	Solicit
GetFacilityByZipCode	State Code and Zip	Solicit

	Code	
GetFacilityByStateID	State Code and State ID	Solicit and Query
GetFacilityBySICCode	State Code and SIC Code	Solicit
GetFacilityByNaicsCode	State Code and NAICS Code	Solicit

Outbound web services available via FACID 3.0:

Name	Parameters	Type of Service Request	Notes
GetFacilityByID	RegistryID, Originating Partner Name and Program Acronym	Query	Get detailed facility data for one facility.
GetFacilityInterestID	Registry ID, Originating Partner Name and Program Acronym	Query	Full set of parameters but returning a payload of summary facility and environmental interest data (FacilityInterest) rather than the full schema, to aid in performance.

Future Enhancements:

1. Data validation tool at FRSNODE:

FRS is planning to implement a data validation tool at the node that performs data validation on the facilities as they are processed. This will prevent poor quality data entering into FRS.

2. Improve notifications on FACID3.0 dataflow:

At present, a synchronous notification is sent to the submitter for the transaction that notifies that file has been received at FRS end. FRS is planning to send more notifications on the submissions in future, so it gives additional details, such as count of processed and rejected records per transaction and diagnostics, such as identified issues with the rejected data, et cetera. This will give more information to submitters about their submission and help them to improve the quality of their data.

Additional Activities to be considered by Grant Applicants

EPA encourages states and tribes to exchange facility data with FRS including: Integrated State Master Facility databases; other types of facilities datasets of interest include Tier 2 Chemical Inventory Reporting facilities, CAFO's (Concentrated Animal Feed Operations), Underground Storage Tanks, Leaking Underground Storage Tanks, Landfills, Spill Prevention Control and Counter Measure facilities and other facility types of environmental interest. As an example of

one of its' newest EPA program office data assets, FRS will be able to publish to Exchange Network partners the universe of Greenhouse Gas Reporters in summer of 2011, which may be useful to state programs.

EPA encourages states and tribes to flow geospatial locational data (latitude and longitude data and, where possible, linear and polygonal locational values, along with collection metadata) to FRS or publish the data for partners interested in locating and mapping facilities or sites. EPA encourages applicants to collaborate on best practices and continually improve their facility records to conform more closely to data standards and to better reflect the true (as opposed to merely valid) identity and location of environmental interests. This level of quality is especially important when first responders use the data. Tribes should consider using the FACID schema to share data about Open Dumps in Indian Country (see Open Dump Section on page A-31 of this Appendix).

Applicants should consider that flows don't necessarily need to be one-way. EN technology allows facility data and location information to flow from states and partners to FRS, from FRS to states, tribes and the public, and also allows for the exchange of information among states, tribes and other partners.

One way that FRS can provide value to partners is that it integrates information from multiple programs that relate to a single facility or site. This allows for both cross-media integration and cross-jurisdictional/regional analyses. FRS also provides error correction, quality assurance, and validation tools. Additionally, FRS indexes facilities to congressional districts, census blocks, and watershed HUC codes, which can aid in query and analysis. Such data attribute and validity improvement functions are useful for analyses by EPA and its partners.

The FACID schema can also support multi-agency collaboration, such as that demonstrated by the Heartland Emergency Response Exchange (HERE) exchange. Applicants should consider proposing projects that involve flowing data from EPA to states and partners for integration and analysis, as well as flows that share facility identification data among states and with local governments.

FRS data can be extracted using the outbound services via CDX through FACID 2.3 and 3.0 data flows.

Toxics Release Inventory System (TRIS)

Description:

The TRI System is an annual reporting requirement for industries with toxic chemical releases (deadline is July 1st of every year). The TRI Data Exchange (TDX) provides for simultaneous submission of TRI reports to both EPA and states via CDX. Benefits of the TRI Data Exchange include:

- For participating states and EPA, elimination of duplicative data entry, reduction of state data reconciliation, and faster access to the data
- For facilities, reduced burden through simultaneous submission to both EPA and the state to meet EPCRA Section 313 reporting requirements

Exchange Network Program Office Activities	
Milestones	Target Completion Date
Load/Update XML Schema (if necessary) for FY2011	11/30/2011
Enhance existing ad-hoc query services (TDX Viewer) to allow partners to search for TRI transactions using an expanded number of criteria, and display XML data as a mock TRI form using a stylesheet. The TDX Viewer application, first released in Dec. 2009, is hosted on CDX and allows partners to identify how many times reports have been sent to them via CDX and if the transmissions succeeded or failed to reach the state node.	Completed 04/01/2011
Continue to investigate use of additional Web services for further application functionality	Ongoing
Test and Support operational Node-to-Node data exchanges between CDX and States	Ongoing

Additional Activities to be considered by Grant Applicants:

- Work with the TRI Program to test XML schema on the state node to accept TRI data from EPA.
- States should develop procedures that enable the import of TRI data into their systems. The procedures should support data in XML format received via their state node.
- Encourage environmental state program office employees at TDX states to take advantage of the benefits offered by the TDX Viewer tool. More information can be found at http://www.epa.gov/tri/stakeholders/state/state_exchange/index.htm
- Use the TRI XML schema to develop loading/converter tools to populate the state database directly from incoming data sources via CDX.
- Leverage existing tools and services developed by states already on the TRI Data Exchange. http://www.epa.gov/tri/stakeholders/state/state_exchange/index.htm
- Collaborate with states on the TRI Data Exchange and other states interested in joining by developing sharable code (i.e., monthly conference calls)

III. Non-Regulatory and Innovative Data Exchanges

This section of Appendix B highlights non-regulatory and innovative data exchanges that meet specific business needs. These data exchanges could support environmental decision-making and operations, address cross-cutting environmental issues, or support specific state, territorial, or tribal environmental programs.

Applicants could propose to implement geospatial data and tools to flow environmental information. Exchange Network partners could play an important role in helping the geospatial community at large realize the benefits of building interoperable solutions to share and re-use data. By adhering to applicable geospatial standards and measurement guidelines for metadata creation and publishing, and by implementing Open Geospatial Consortium (OGC) compliant Web service capabilities, Network partners can take important steps to ensure the development and maintenance of shareable geospatial data resources.

- Enabling Geospatial Data Exchange.....B-25
- Agricultural Non-Point Source Best Management Practice Data ExchangeB-28

Enabling Geospatial Data Exchange

Description:

Geospatial data represent features on the Earth expressed as points, lines, or polygons and are used in tandem with programmatic data, through geospatial information systems and browsers, to support programmatic analysis using a geographic or place-based context.

Office of Management and Budget (OMB) Circular A-16 “Coordination of Geographic Information and Related Spatial Data Activities” identifies 34 critical geospatial data themes that are essential components of the National Spatial Data Infrastructure (NSDI) (http://www.whitehouse.gov/omb/circulars/a016/a016_rev.html). The A-16 geospatial data theme categories encompass a wide variety of place-based data sets including those related to biodiversity, wetlands, watershed boundaries, soils, hydrography, administrative units and demographics which are essential to environmental analysis and decision-making.

Place-based approaches are particularly crucial for dealing with human health, environmental issues, and business areas. Business activities include: problem assessment, emergency response, enforcement, habitat protection and restoration, and drinking water protection. Place-based approaches are recognized as key to business processes in the August 11 2009 White House Memo, “Developing Effective Place Based Policies for the FY 2011 Budget”. Additionally, the June 2009 Congressional Research Service report, “Geospatial Information and Geographic Information Systems (GIS): Current Issues and Future Challenges”, describes the need for a more robust “NSDI 2.0” approach, with a recommendation of bolstering existing partnerships such as the Exchange Network to improve the sharing, access to, and discovery of, these critical data assets.

Through integrated data collection and sharing approaches, such as via the Exchange Network, cross-jurisdictional geospatial and geospatially-enabled datasets can support more consistent business approaches and robust analysis for informed decision-making and response to human health and environmental issues. An example of this is watershed boundary data sets that cross political boundaries. The Exchange Network can serve a critical role in the future expansion of the National Spatial Data Infrastructure by facilitating transport and sharing of these data sets across various levels and of government and across jurisdictional boundaries because the model of data stewardship it uses encompasses multiple levels of government. Thus it could serve to empower the development of national data layers, while maintaining data and metadata stewardship, as well as maintenance and ownership at the appropriate organizations and levels of government. Relevant examples are the existing EPA Office of Water - National Hydrography Dataset (NHD) NHDUpdate and NHDEvent flows. Much of EPA’s data is gathered at the state level, and historically had to be manually integrated. The Exchange Network facilitates this integration in an automated fashion, both saving time and potentially improving data quality.

Exchange Network Program Office Activities	
Milestones	Target Completion Date
Evaluate existing standards and schema (XML/GML) to support coverages	Completed
Develop XML/GML schema and concept of operations for discovery, update or exchange of coverages	Completed
Release XML Schema	Completed
Conduct/complete testing	Completed
Complete readiness evaluation for implementation	Completed

Additional Activities to be considered by Grant Applicants:

The intent of this category is not to fund the creation of new data (e.g. conducting water sampling) or exchange entire national data coverage. It is rather, where practical, to expand the sharing of important updates to robust geospatial data elements such as points, linear and polygonal data by state or local agencies across the Network partnership, and to facilitate the publishing of data, services, and metadata using Open Geospatial Consortium (OGC) standards and interfaces. Applications should focus on examining federated models for the exchange of local geospatial data state-wide and cross-state, especially when considering regional multi-state ecosystems (such as Large Aquatic Ecosystems).

A key objective is to move government users toward data interoperability and the leveraging of existing COTS and Open Source technologies. Thus applications should incorporate as appropriate existing standards-based approaches for data exchange. This should include Transactional Web Feature Service (WFS-T), Sensor Observation Service (SOS) and others, as applicable.

Applications relevant to this topic should be centered on one or more key business areas that would benefit from the publishing of updated geospatial data and/or of geospatially-enabled programmatic data both inside and outside the Network. Innovative applications will demonstrate exchange and publication of geospatial data assets and metadata for use in applications involving multiple jurisdictions and/or focusing on multi-media environmental problems. Relevant applications could demonstrate:

- Exchange of local portions of nationally significant datasets that fall under the purview of A-16 NSDI data themes, particularly those of relevance to solving environmental challenges and supporting multi-level governmental partnerships, and which are not being coordinated by other initiatives (for example, roadway data being coordinated through Transportation For The Nation).
- Exchange of local data useful for the support of various community-based sustainability/planning initiatives among jurisdictions, such as land use/land cover parcel data, transit/transportation data, zoning and planning data, building permit and/or LEED building/infrastructure data; or

- Exchange of local data to support regionally- or ecosystem-based ecological restoration efforts (including Large Aquatic Ecosystems), such as: local water quality/habitat monitoring data, local land use/land cover data (habitat location, forested areas, riparian buffers, etc.), and local restoration project location data.
- Sharing geospatial data as a step towards developing and deploying placed-based solutions.
- Development of prototype solutions for the next generation NSDI, a merger of the existing National Spatial Data Infrastructure data, tools and catalogs along with the distributed computing resources of the Exchange Network.

In these examples, the value of exchanging geospatial data is the facilitation of the study of cross-jurisdictional problems with multiple data sources, using geographic location as an integrating concept. Data exchanges could be periodic, but applicants are also encouraged to examine synchronization-based services to support near-real time exchange for applications such as sensor data, monitoring and emergency response.

Applicants are encouraged to demonstrate how their application will foster collaboration across a broader community of interest (e.g., other federal agencies, state and local governments, regionally-based organizations etc.) and support the broad distribution of these data and metadata across the communities of interest identified. Applicants proposing the development of geospatial exchanges should leverage OGC standards, tools and services to adapt XML/GML schema which could potentially become national standards to support the discovery, exchange and update of these critical data sources. Applications should focus on solutions which could be replicated to other regional areas with similar requirements.

**Agricultural Non-Point Source Best Management Practice Data Exchange
(NPS BMP)**

Description:

Accurate, consistent, and spatially explicit non-point source best management practice data is a critical data flow for assessment of load reduction and corresponding water quality benefits. BMP's are components of Tributary Strategies for analyzing Total Maximum Daily Loads (TMDL's). BMP data aids the strategic targeting of environmental actions required to protect and restore the water quality conditions necessary to sustain a number of aquatic species.

The Chesapeake Bay Program Partnership, led by Pennsylvania Department of Environmental Protection, developed the data exchange templates, schema and services that standardizes the exchange. On a national scale, NPS BMP will provide a database of information on best management practices suitable to reduce loads and improve water quality in different geographic settings.

Exchange Network Program Office Activities	
Milestone	Target Completion Date
Report out on compliance with data standards	Completed
Test XML schema	Completed
Release XML Schema	Completed
Availability of database or system for testing	Completed
Availability of Node services for testing	Completed
Readiness for complete end-to-end testing by States/ Tribes	Completed
System readiness to receive production data to EPA	Completed
Flow configuration document completed or updated	Completed

Additional Activities to be considered by Grant Applicants

Applicants are encouraged to do any of the following activities:

- Expand the current Regional exchange by leveraging the existing schema and standards.
- Develop the suite of services to support geographically and temporally based exchanges of BMP data.
- Build out the schema to include geo-spatial data exchange elements and develop additional validation and/or analytical tools to support this data flow.

Appendix C

Cloud Transition Grants for EN Partners

The Exchange Network Grant Program encourages projects that promote efficiency through the reuse of *shared* systems and resources. As cloud-based computing continues to grow and mature, EPA is exploring opportunities to offer cloud-based Exchange Network Nodes to Network partners. Sharing Node software and hardware in the cloud may help partners—particularly small and medium-sized organizations—find even more cost efficient ways to manage their nodes and decrease operational costs. EPA is accepting grant applications from, state, territorial, and tribal groups that are interested in partnering with EPA on projects to pilot cloud-based Exchange Network Node solutions.

EPA is evaluating two cloud models for the Exchange Network including: 1) a multi-instance node model in which partners could transition their existing node into its own virtual machine in the cloud and 2) a multi-tenant application model which is analogous to a central shared node that can be individually configured by each partner to handle their different data flows. EPA anticipates establishing and maintaining this infrastructure in a central shared cloud environment. It is anticipated that these models will add the most value for small to medium sized partners that need to find even more cost efficient ways to manage their nodes and decrease operational costs. The details of these models are being developed and tested now.

The focus of this solicitation is to cover the transition cost for partners to move from a physical node implementation to either a virtual node (multi-instance) or into the multi-tenant (shared) node implementation. Funding for multi-tenant/multi-instance model adoption will not exceed \$70,000. Actual award amounts will be based upon the complexity of moving individual nodes and associated data flows (e.g. number of active data flows) to one of these environments.

Applications should clearly state which of the two cloud models are being requested.

Multi-Tenant Node Application

EPA is particularly interested in working closely with partners to leverage this new model for a shared node implementation (partners share a common scalable node). Installations of this type would provide a simplified solution for any partner (particularly partners lacking adequate resources for a dedicated node environment). Much of the basic administration is done centrally and partners are able to concentrate on configuring data flows instead of administering application servers.

Under the Multi-Tenant Node solution:

- Partners would configure data flows on the new centrally-hosted cloud node, but partner databases stay in place.
- State databases connect to the Cloud Node through a new secure channel or backend bridge.

- Node administrators would retain control of their Node data flows and the manner in which the cloud node can access their databases.
- Much of the administration would be done centrally, thereby reducing the amount of effort necessary to participate in the Network.

The multi-tenant model may offer some significant advantages over current nodes and multi-instance nodes. It eliminates software licensing costs, server costs, and much of the administration costs for partners while providing greater economies of scale.

Applications for transitioning to the multi-tenant node should focus on development activities such as:

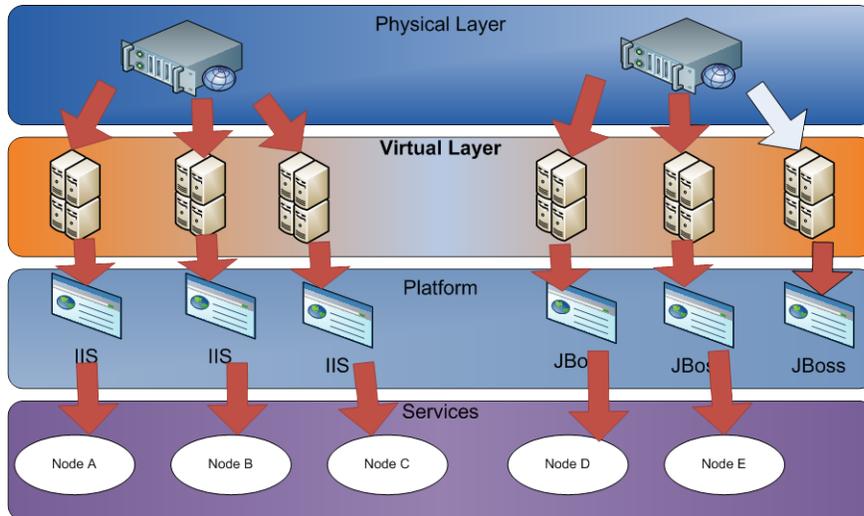
- a) Dataflow configuration
- b) Testing
- c) Security Plan Requirements
- d) Node and Cloud Training

Multi-Instance Nodes in the Cloud

In this alternative EN deployment model, each node could be deployed into a virtual machine in the cloud and thus have its own platform and operating system. The physical location of the virtual machine would not matter since the load could be dynamically managed, optimized and secured in the cloud. Many state and tribal virtual nodes could coexist in the same cloud infrastructure at a lower cost. This list defines the key changes that partners could anticipate:

- Nodes would be moved to the cloud, but the partner databases would stay in place.
- State databases would connect to Cloud Nodes through a new secure channel or backend bridge.
- Node administrators would still have control of their virtual node, and how it accesses their databases.

A new node would be deployed on a virtual machine having one of a few supported operating systems, application servers, and approved node software packages. The following diagram shows the architecture of this model:



One key advantage of this model is that each node is running in its own virtual machine (VM), independent of others. The node administrator would have total control of the VM and the ability to customize the operating system to meet node specific requirements. The isolation from the VM layer would allow a node administrator to operate, maintain and control the node with no direct impact to other nodes. Furthermore, the bandwidth available to individual nodes could be scaled up or down easily based on demand.

Security control and management in the multi-instance model is relatively simple as the VM can have its own users and access control policies.

The multi-instance model has advantages such as:

- Horizontal scaling of nodes and management of (virtual) machines;
- Reuse of the existing node security model;
- High load on one node does not cause higher latency for other partners;
- Better performance SLAs and stronger security;
- Lower cost of cloud infrastructure;
- Lower operations and maintenance costs

Partners may apply individually for one EN Cloud transition grant to cover costs such as:

- Security reviews and documentation
- Data Flow migrations

- Node and Cloud Training
- Testing

New Node Communication Model

Another key goal of the solicitation is to explore various ways of interconnecting from the state applications and database servers (backend) to the nodes in the cloud environment. The following technical options are being evaluated:

- **Backend Proxy:** A small component will be deployed in the partner environment (backend) which makes outgoing connections, accepts/processes requests and returns XML results to the node in the cloud.
- **TCP/IP Relay:** A P2P style component will be installed in the backend environment. The component enables direct connections from the node in the cloud and relays TCP/IP to the partner backend database environment.
- **Internet Service Bus (ISB):** A component will be installed in the partner backend database environment which establishes a connection with the ISB for relaying network activity to/from the node in the cloud.
- **Secure Virtual Private Network (VPN):** This is a secure network connection from the partner's node in the cloud to the partner backend database environment. Once the connectivity is established, the node can make direct database connections through the secure channel.

Partners are encouraged to incorporate the exploration of one or more of these options into grant applications to help optimize this key component of the new cloud based models.

Appendix D

Detailed Instructions for Submitting Applications

Applicants for the FY 2012 Exchange Network Grant program must submit an application package to EPA by November 4, 2011. EPA will accept applications for National Environmental Information Exchange Network grants in one of two ways: 1) an application submitted electronically through the grants.gov website; or 2) a hardcopy mailed or delivered application, including one original and two copies. Applicants who submit a hard copy are encouraged to also submit an electronic courtesy copy of the application by email, to Ryan Humrighouse at ENGrantProgram@epa.gov. EPA will confirm receipt of each application with an e-mail to the contacts listed in the cover letter.

EPA will notify applicants of its selection decisions in or around April 2012. The notification letters will include further instructions to successful applicants for submittal of additional or updated documents. EPA plans to award all grants by August 2012.

The following forms and documents are required under this announcement (fillable forms can be obtained from <http://www.epa.gov/ogd/AppKit/application.htm>):

1. Application for Federal Assistance (SF-424)
2. Budget Information for Non-Construction Programs (SF-424A)
3. Assurances for Non-Construction Programs (SF-424B)
4. Certification Regarding Lobbying Form
5. EPA Key Contacts Form 5700-54
6. EPA Form 4700-4 – Preaward Compliance Review Report
7. Project Narrative
8. Detailed Itemized Budget
9. Disclosure of Lobbying Activities (SF-LLL), if applicable
10. Negotiated Indirect Cost Rate Agreement, if applicable
11. Programmatic Resources and Personnel
12. Cover Letter
13. Exchange Network Implementation Plan, if applicable
14. Additional Information for Inter-tribal Consortium, if applicable
15. Formal Project Partners Roles and Responsibilities, if applicable
16. List of Federally and/or Non-federally Funded Assistance Agreements

1. Standard Form (SF) 424, Application for Federal Assistance

Complete the form. Please note that the organizational Dun and Bradstreet (D&B) Data Universal Number System (DUNS) number must be included on the SF-424. Organizations may obtain a DUNS number at no cost by calling the toll-free DUNS number request line at 1-866-705-5711.

2. SF-424A, Budget Information for Non-Construction Programs

Complete the form. The total amount of federal funding requested for the project period should

be shown on line 5(e) and on line 6(k) of SF-424A. If indirect costs are included, the amount of indirect costs should be entered on line 6(j). The indirect cost rate (i.e., a percentage), the base (e.g., personnel costs and fringe benefits), and the amount should also be indicated on line 22. If indirect costs are requested, a copy of the Negotiated Indirect Cost Rate Agreement must be submitted as part of the application package. (See instructions for document 10 below.)

3. SF-424B, Assurances for Non-Construction Program

Complete the form.

4. EPA Lobbying Form – Certification Regarding Lobbying

Complete the form.

5. EPA Form 5700-54, Key Contacts Form

Complete the form.

6. EPA Form 4700-4, Pre-Award Compliance Review Report.

Complete the form.

7. Project Narrative

Applications must include a project narrative including: goals, outputs with dates, and outcomes that lead to environmental results. **The project narrative must address each of the Evaluation Criteria (Section V-A) of this Solicitation Notice.** Applicants must limit the project narrative to 10 single spaced pages. The ten-page limit does not include the required application forms (e.g., SF-424, SF-424A, SF-424B, SF-5700-54, etc.), cover letter, description of programmatic resources and personnel, description of roles of project partners, list of previously awarded assistance agreements, detailed itemized budget, or the Exchange Network Implementation Plan described in section III-B. ***EPA will not review pages beyond the first ten pages of the project narrative.*** Highly scoring applications will include within the ten-page project narrative a description of:

- project goals, outputs, outcomes that lead to environmental results, including a plan that allows the applicant to track and report progress toward achieving the project's expected goals (Appendix E provides an example of a project goals, outputs, outcomes);
- project roles and responsibilities for the applicant and any partners included in the project;
- how collaboration between IT/IM staff and environmental/health programs to integrate project outputs into the programs' business operations;
- applicant's commitment to re-use existing EN tools or share new tools with EN partners;
- amounts budgeted for each goal; and
- summarized qualifications of the project manager and other key personnel and the applicant's resources which would contribute to project success.

The narrative should describe the major goal or goals, outputs and outcomes leading to environmental results of the two-year project. To achieve outcomes that lead to environmental results, applicants should propose a project that contains one or more goals (for example, implement a WQX data exchange or publishing AQS data to neighboring partners) that will have outcomes supporting timely access to high quality environmental data. Projects can also support environmental results by improving the efficiency and security of data sharing (for instance,

making state electronic reporting systems CROMERR compliant for priority reports). EPA will evaluate the major technical and non-technical outputs of the proposed work and the outcomes, leading to environmental results, these outputs support. The schedule of outputs must be detailed enough to demonstrate an applicant's ability to track progress toward each goal. Each proposed goal must have at least one outcome leading to an environmental result.

Examples of project outputs might include technical products such as schema or EN data access tools and services. Non-technical outputs might include the creation of workgroups, issuance of RFPs or other major project actions or events. Examples of outcomes that support environmental results include: improving the timeliness and accuracy of environmental data; reducing the burden and costs of data management and reporting; strengthening environmental decision making by enhancing data access for environmental professionals and the public. Applicants can find a sample narrative with goals, outputs and outcomes in Appendix E.

8. Detailed Itemized Budget

Applicants should describe *both the total project budget and the costs associated with each major goal* in a detailed itemized budget. *The goal-specific budget information is important, because EPA may wish to consider partially funding some projects (i.e., funding only some goals for a project but not others).* The budget must include any relevant item listed below:

- A. Personnel – List all staff positions by title. Give the annual salary of each person, the percentage of their time devoted to the project, the amount of each person’s salary funded by the grant and the total personnel cost for the budget period.
- B. Fringe Benefits – Identify the fringe benefit rate and total amount.
- C. Travel – Specify the mileage, per diem, estimated number of in state and out of state trips other costs for each type of travel. EPA suggests that applicants include funds for travel to national, regional and area Exchange Network conferences.
- D. Equipment – Identify each item of equipment to be purchased which has an estimated acquisition cost of \$5,000 or more per unit and a useful lifetime of more than one year. List the quantity and unit cost per item. Items with a unit cost of less than \$5,000 are supplies.
- E. Supplies – Supplies include all tangible personal property other than “equipment.” The detailed budget should identify categories of supplies (such as laboratory supplies or office supplies). List the quantity and unit cost per item.
- F. Contractual – Identify each proposed contract and specify its purpose and estimated cost. Applicants who request in-kind services should list them here.
- G. Other – List each item in sufficient detail for U.S. EPA to determine whether the costs are reasonable or allowable. List any item, such as training, not covered elsewhere here.

- H. Indirect Charges – If indirect charges are included in the budget, include the approved indirect cost rate with a copy of the Indirect Cost Rate Agreement, a description of the base used to calculate indirect costs and total cost of the base, and the total indirect charges requested. **Before an applicant can incur any costs under the indirect cost category, the Indirect Cost Rate Agreement must be approved and current.** If you do not have a current rate, you may submit a copy of the submitted application to the cognizant fiduciary agency.
- I. Management Fees – When formulating budgets for applications, applicants must not include management fees or similar charges in excess of the direct costs and indirect costs at the rate approved by the applicants cognizant audit agency, or at the rate provided for by the terms of the agreement negotiated with EPA. The term "management fees or similar charges" refers to expenses added to the direct costs in order to accumulate and reserve funds for ongoing business expenses, unforeseen liabilities, or for other similar costs that are not allowable under EPA assistance agreements. Management fees or similar charges may not be used to improve or expand the project funded under this agreement, except to the extent authorized as a direct cost of carrying out the scope of work.

9. SF-LLL, Disclosure of Lobbying Activities, if applicable

This form is required if your organization is involved in lobbying. Complete the form if your organization is involved in lobbying activities.

10. Negotiated Indirect Cost Rate Agreement

This form is required if indirect costs are included in the project budget. You must submit a copy of your organization's Indirect Cost Rate Agreement as part of the application package if your proposed budget includes indirect costs.

11. Programmatic Resources and Personnel: Briefly describe the programmatic resources and personnel involved in the project for the recipient and any participating partner. Highlight any expertise or past experiences that may be particularly helpful in carrying out the project. Include biographical sketches or resumes of the lead and any partner Project Manager(s). Each biographical sketch should outline the education, work history, and knowledge/expertise of the individual that will be managing the proposed project.

12. Cover Letter

Applications must include a cover letter signed by an authorized organizational representative (AOR) who, by virtue of their position, is able to obligate staff time on the proposed project (a suggested cover letter template is available at the end of Appendix D) including:

- a. recipient information;
- b. project title;
- c. type of vehicle requested (grant/cooperative agreement/ Performance Partnership Grant);
- d. proposed amount of grant (broken down into direct funding and in-kind assistance if relevant);
- e. partners on the grant (if applicable);
- f. brief project summary including a statement of project goal(s);

- g. contact information for the project lead; and
- h. signature of executive level Authorized Organizational Representative (AOR).

13. Exchange Network Implementation Plan. All state applicants must submit a document of two to three pages explaining how the applicant plans to fully implement the Exchange Network for all regulatory and national system flows as described in Section III-B. This plan is optional for tribal and territorial applicants.

14. Additional Information for Inter-tribal Consortium: An inter-tribal consortium applying for an FY 2012 Exchange Network Grant must include documentation that shows:

- a formal partnership exists among the Indian tribal governments that are members of the inter-tribal consortium, and the majority of the members are federally recognized Indian tribes; and,
- the consortium’s federally recognized tribal members have authorized the consortium to apply for and receive assistance from the Exchange Network Grant Program.

15. Formal Project Partners – Roles and Responsibilities and Distribution of Funds: If the proposed project involves formal project partners who will actively participate in implementing the project, provide a description of the roles and responsibilities of each partner in carrying out each of the project goals. Describe how the recipient would coordinate work among the partners using methods such as regular teleconferences, meetings, or written status reports. If the recipient plans to distribute funding to other partners, describe the method for doing so. Exchange Network grant projects that include one or more formal partners can have budgets up to \$350,000.

Partnerships formed from within a single state, territorial, or tribal government (e.g., a “partnership” limited to the Environment and Public Health Departments within a state) are not eligible partnership and are limited to the \$200,000 maximum funding for a single-jurisdiction grant.

16. List of Federally and/or Non-federally Funded Assistance Agreements

Provide a list of previously awarded assistance agreements.

Submitting a Hard-Copy Application Package

Applicants should submit one original and two paper copies of all of the documents listed above (EPA has provided a checklist of required application documents in Appendix G). Hard-copy applications must be postmarked or delivered to an overnight mail or courier service at or before 11:59 PM (Eastern Standard Time) on November 4, 2011. *EPA recommends the use of overnight delivery or courier services to reduce the chance of delays.* Applicants should send their hard-copy applications to one of the following addresses depending on the delivery method:

Mailing Address:

Ryan Humrighouse
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, (2823-T)
Washington, DC 20460

Physical Address *(for overnight, or courier deliveries):*

Ryan Humrighouse
U.S. Environmental Protection Agency
1301 Constitution Avenue, NW
6th Floor, Room 6416E

Washington, DC 20004

Applicants who submit a hard copy are encouraged to also submit an electronic copy of the application by email, to Ryan Humrighouse at ENGrantProgram@epa.gov.

EPA will provide electronic acknowledgement of receipt of each application. If you do not receive acknowledgement of receipt from EPA regarding the submission of your grant application within 30 days of the application deadline, please contact Ryan Humrighouse, Exchange Network Grants Manager, at (202)-566-1680 or humrighouse.ryan@epa.gov. Failure to do so may result in your application not being considered. Please retain documentation that shows that you submitted your application by the deadline.

Submitting an Electronic Application Package through Grants.gov

Electronic application packages can also be submitted through the grants.gov Web site, <http://www.grants.gov>. The Funding Opportunity Number for this announcement is **EPA-OEI-12-01**. Electronic applications must be submitted to this Web site by 11:59 pm on November 4, 2011. EPA advises applicants to submit their electronic applications early, so that if any technical difficulties arise, there will still be time to address them before the application deadline.

If you wish to apply electronically via grants.gov, the electronic submission of your application must be made by an official representative of your institution who is registered with grants.gov and authorized to sign applications for Federal assistance. For more information, go to <http://www.grants.gov> and click on “Get Registered” on the left side of the page. *Note that the registration process may take a week or longer.* If your organization is not currently registered with grants.gov, please encourage your office to designate an AOR and ask that individual to begin the registration process as soon as possible.

To begin the application process under this grant announcement, go to <http://www.grants.gov> and click on “Apply for Grants” on the left side of the page. Then click on “Apply Step 1: Download a Grant Application Package” to download the Adobe viewer and obtain the application package. **To apply through grants.gov you must use Adobe Reader applications and download the compatible Adobe Reader version** (Adobe Reader applications are available to [download for free on the Grants.gov website](#)). For more information on Adobe Reader please visit the [Help section](#) on grants.gov at <http://www.grants.gov/help/help.jsp> or http://www.grants.gov/aboutgrants/program_status.jsp.

Once you have downloaded the viewer, you may retrieve the application package by entering the Funding Opportunity Number, EPA-OEI-12-01, or the appropriate CFDA number (CFDA 66.608), in the appropriate field. Then complete and submit the application package as indicated. You may also be able to access the application package by clicking on the Application button at the top right of the synopsis page for this announcement on <http://www.grants.gov> (to find the synopsis page, go to <http://www.grants.gov> and click on the “Find Grant Opportunities” button on the left side of the page and then go to “Search Opportunities” and use the “Browse by Agency” feature to find EPA Opportunities.

Please be sure to review the additional instructions below before applying electronically under this announcement through use of grants.gov that are available for download on grants.gov.

Application materials submitted through grants.gov will be time/date stamped electronically. If you have not received a confirmation of receipt from EPA (not from grants.gov) within 30 days of the application deadline, please contact Ryan Humrighouse, Exchange Network Grant Program Manager, at (202)-566-1680 or humrighouse.ryan@epa.gov. Failure to do so may result in your application not being reviewed.

Grants.gov Application Preparation and Submission Instructions

The application package *must* include all of the following materials (fillable forms can be obtained from <http://www.epa.gov/ogd/AppKit/application.htm>):

1. Application for Federal Assistance (SF-424)
2. Budget Information for Non-Construction Programs (SF-424A)
3. Assurances for Non-Construction Programs (SF-424B)
4. Certification Regarding Lobbying Form
5. EPA Key Contacts Form 5700-54
6. EPA Form 4700-4 – Preaward Compliance Review Report
7. Project Narrative
8. Detailed Itemized Budget (Budget Narrative Attachment Form)
9. Disclosure of Lobbying Activities (SF-LLL), if applicable
10. Negotiated Indirect Cost Rate Agreement, if applicable
11. Programmatic Resources and Personnel
12. Cover Letter
13. Exchange Network Implementation Plan, if applicable
14. Additional Information for Inter-tribal Consortium, if applicable
15. Formal Project Partners Roles and Responsibilities, if applicable
16. List of Federally and/or Non-federally Funded Assistance Agreements

1. Standard Form (SF) 424, Application for Federal Assistance

Complete the form. There are no attachments. Please note that the organizational Dun and Bradstreet (D&B) Data Universal Number System (DUNS) number must be included on the SF-424. Organizations may obtain a DUNS number at no cost by calling the toll-free DUNS number request line at 1-866-705-5711.

2. SF-424A, Budget Information for Non-Construction Programs

Complete the form. There are no attachments. The total amount of federal funding requested for the project period should be shown on line 5(e) and on line 6(k) of SF-424A. If indirect costs are included, the amount of indirect costs should be entered on line 6(j). The indirect cost rate (i.e., a percentage), the base (e.g., personnel costs and fringe benefits), and the amount should also be indicated on line 22. If indirect costs are requested, a copy of the Negotiated Indirect Cost Rate Agreement must be submitted as part of the application package. (See instructions for document 10 below.)

3. SF-424B, Assurances for Non-Construction Program

Complete the form. There are no attachments.

4. EPA Lobbying Form – Certification Regarding Lobbying

Complete the form. There are no attachments.

5. EPA Form 5700-54, Key Contacts Form

Complete the form. There are no attachments. If additional pages are needed, attach these additional pages to the electronic application package by using the “Other Attachments Form” in the “Optional Documents” box. (See Additional Application Preparation and Submission Instructions below for more details.)

6. EPA Form 4700-4, Pre-Award Compliance Review Report

Complete the form.

7. Project Narrative

For document 7, you will need to attach electronic files. Prepare your project narrative as described above and save the documents to your computer as an MS Word or PDF file. When you are ready to attach your project narrative to the application package, click on “Project Narrative Attachment Form,” and open the form. Click “Add Mandatory Project Narrative File,” and then attach your project narrative (previously saved to your computer) using the browse window that appears. You may then click “View Mandatory Project Narrative File” to view it. Enter a brief descriptive title of your project in the space beside “Mandatory Project Narrative File Filename;” the filename should be no more than 40 characters long. If there are other attachments to submit to accompany your application, you may click “Add Optional Project Narrative File” and proceed as before. When you have finished attaching the necessary documents, click “Close Form.” When you return to the “Grant Application Package” page, select the “Project Narrative Attachment Form” and click “Move Form to Submission List.” The form should now appear in the box that says, “Mandatory Completed Documents for Submission.”

8. Detailed Itemized Budget (Budget Narrative Attachment Form)

For document 8, you will need to attach electronic files. Prepare the Detailed Itemized Budget in as described above and save the documents to your computer as an MS Word or PDF file. When you are ready to attach your budget to the application package, click on “Budget Narrative Attachment Form” and then “Add Mandatory Budget Narrative.” Follow the same general procedures for attaching document 7 – the Project Narrative.

9. SF-LLL, Disclosure of Lobbying Activities, if applicable

This form is required if your organization is involved in lobbying. Complete the form if your organization is involved in lobbying activities.

10. Other Attachments Form – Negotiated Indirect Cost Rate Agreement

This form is required if indirect costs are included in the project budget. Use the “Other Attachments Form” in the “Optional Documents” box to attach a copy of your organization’s Indirect Cost Rate Agreement, if applicable. (See Additional Application Preparation and

Submission Instructions below for more details.) You must submit a copy of your organization's Indirect Cost Rate Agreement as part of the application package if your proposed budget includes indirect costs.

11. Other Attachments Form – Programmatic Resources and Personnel

Use the “Other Attachments Form” in the “Optional Documents” box to attach a copy of the programmatic resources and personnel document. Briefly describe the programmatic resources and personnel involved in the project for the recipient and any participating partner. Highlight any expertise or past experiences that may be particularly helpful in carrying out the project. Include biographical sketches or resumes of the lead and any partner Project Manager(s). Each biographical sketch should outline the education, work history, and knowledge/expertise of the individual that relate to managing the proposed project.

12. Other Attachments Form – Cover Letter

Prepare your cover letter as outlined above and save the document to your computer as an MS Word file. (U.S. EPA prefers to receive documents in MS Word 97, 2003.) To add the cover letter, click “Other Attachments Form” in the “Optional Documents” box and then attach your document (previously saved to your computer) using the browse window that appears (a suggested cover letter template is available at the end of Appendix D).

13. Other Attachments Form – Exchange Network Implementation Plan

All state applicants must submit a document of two to three pages explaining how the applicant plans to fully implement the Exchange Network for all regulatory and national system flows. This plan is optional for tribal and territorial applicants. Prepare your Implementation Plan as described in Section III-B and use the “Other Attachments Form” in the “Optional Documents” box to attach a copy of the

14. Other Attachments Form – Additional Information for Inter-tribal Consortium

An inter-tribal consortium applying for an FY 2012 Exchange Network Grant must include documentation that shows:

- a formal partnership exists among the Indian tribal governments that are members of the inter-tribal consortium, and the majority of the members are federally recognized Indian tribes; and,
- the consortium's federally recognized tribal members have authorized the consortium to apply for and receive assistance from the Exchange Network Grant Program.

Use the “Other Attachments Form” in the “Optional Documents” box to attach a copy of any additional information required for inter-tribal consortium.

15. Formal Project Partners – Roles and Responsibilities and Distribution of Funds: If the proposed project involves formal project partners who will actively participate in implementing the project, provide a description of the roles and responsibilities of each partner in carrying out each of the project goals. Describe how the recipient would coordinate work among the partners using methods such as regular teleconferences, meetings, or written status reports. If the recipient plans to distribute funding to other partners, describe the method for doing so. Exchange Network grant projects that include one or more formal partners can have budgets up to \$350,000.

Partnerships formed from within a single state, territorial, or tribal government (e.g., a “partnership” limited to the Environment and Public Health Departments within a state) are not eligible partnership and are limited to the \$200,000 maximum funding for a single-jurisdiction grant. Use the “Other Attachments Form” in the “Optional Documents” box to attach a copy of the document.

16. Other Attachments Form – List of Federally and/or Non-federally Funded Assistance Agreements

Prepare your list of federally and/or non-federally funded assistance agreements and save the document to your computer as an MS Word file. To add the list of previously awarded assistance agreements, click “Add Optional Project Narrative File” and then attach your document (previously saved to your computer) using the browse window that appears

Additional Application Preparation and Submission Instructions

Documents 1 through 6 listed under Application Materials above should appear in the “Mandatory Documents” box on the Grants.gov Grant Application Package page.

For documents 1 through 6, click on the appropriate form and then click “Open Form” below the box. The fields that must be completed will be highlighted in yellow. Optional fields and completed fields will be displayed in white. If you enter an invalid response or incomplete information in a field, you will receive an error message. When you have finished filling out each form, click “Save.” When you return to the electronic Grant Application Package page, click on the form you just completed, and then click on the box that says, “Move Form to Submission List.” This action will move the document over to the box that says, “Mandatory Completed Documents for Submission.”

For documents 7 and 8, you will need to attach electronic files. Prepare your project narrative and detailed itemized budget as described above and save the documents to your computer as an MS Word or PDF file. When you are ready to attach your documents to the application package, click on “Project Narrative Attachment Form,” and open the form. Click “Add Mandatory Project Narrative File,” and then attach your documents (previously saved to your computer) using the browse window that appears. You may then click “View Mandatory Project Narrative File” to view it. Enter a brief descriptive title of your project in the space beside “Mandatory Project Narrative File Filename;” the filename should be no more than 40 characters long. If there are other attachments to submit to accompany your application, you may click “Add Optional Project Narrative File” and proceed as before. When you have finished attaching the necessary documents, click “Close Form.” When you return to the “Grant Application Package” page, select the “Project Narrative Attachment Form” and click “Move Form to Submission List.” The form should now appear in the box that says, “Mandatory Completed Documents for Submission.” Follow the same general procedures for attaching document 8 – the Detailed Itemized Budget – using the “Budget Narrative Attachment Form.”

Documents 9 through 16 are listed in the “Optional Documents” box, but *please note that these so-called “optional” documents must also be submitted as part of the application package, if applicable to your organization.* To attach documents 9 through 16, use the “Other Attachments

Form” in the “Optional Documents” box. After attaching the documents, please remember to highlight the “Other Attachments Form” and click “Move Form to Submission List” in order to move the documents to the box that says, “Optional Completed Documents for Submission.

Once you have finished filling out all of the forms/attachments and they appear in one of the “Completed Documents for Submission” boxes, click the “Save” button that appears at the top of the Web page. *It is suggested that you save the document a second time, using a different name, since this will make it easier to submit an amended package later, if necessary.* Please use the following format when saving your file: “Applicant Name – FY 2012 Exchange Network – 1st Submission” or “Applicant Name – FY 2012 Exchange Network – Back-up Submission.” If it becomes necessary to submit an amended package at a later date, the name of the 2nd submission should be changed to “Applicant Name – FY 2012 Exchange Network – 2nd Submission.”

Once your application package has been completed and saved, send it to your AOR for submission to U.S. EPA through grants.gov. Please advise your AOR to close all other software programs before attempting to submit the application package through grants.gov.

In the “Application Filing Name” box, your AOR should enter your organization’s name and the words, “FY 2012 Exchange Network.” The filing name should not exceed 40 characters (i.e., abbreviate where possible). From the “Grant Application Package” page, your AOR may submit the package by clicking the “Submit” button that appears at the top of the page. The AOR will then be asked to verify the agency and funding opportunity number for which the application package is submitted. If problems arise during the submission process, the AOR should reboot the computer before trying to submit the application package again. [It may be necessary to turn off the computer (not just restart it) or change computers before attempting to submit the package again.] If you continue to experience submission problems, the AOR may contact grants.gov for assistance at 1-800-518-4726 or email at <http://www.grants.gov/help/help.jsp> or call Ryan Humrighouse at 202-566-1680. You are encouraged to submit your application early, in case problems are encountered that result in delays.

Suggested template for cover letter

[Organizational Letterhead]

Mr. Ryan Humrighouse
U.S. Environmental Protection Agency
Office of Environmental Information
1200 Pennsylvania Ave., NW, Mail Code 2823-T
Washington, DC 20460

Dear Mr. Humrighouse:

I am pleased to submit the [state, tribe or territory name here] [Name of Department or Agency]'s application for a [**type of assistance:** grant, cooperative agreement, Performance Partnership Grant or Consolidated Grant amendment], entitled [project name], under the FY 2012 Exchange Network Grant Program. This application is seeking [dollar amount] in direct grants funding and [dollar amount of Funds] in in-kind support. We have ['no' or number of partners] formal partners in this grant application. [Our partners are: name partners].

[short narrative description of project including a statement of project goal(s)]

The contact for this grant application is:

Name and Title of Project Lead
Name of Office or Division
Name of Department or Agency
Full Mailing Address
Phone Number(s)
Email address

If there are any questions, please feel free to call either myself or the contact named in this letter.

Sincerely,

[Name/Title of Authorized Organizational Representative]

Attachment

Appendix E

Sample Project Goals, Outputs and Outcomes

Goals

1. Emissions Inventory System (EIS) & Greenhouse Gas (GHG) Data Flows

Freedonia DEP has been sending NEI data to EPA using the Exchange Network. However, as EPA moves to a new database, called the Emissions Inventory System, this data flow will need to be upgraded to meet the new schema, CERS.

Freedonia requires Title V facilities to provide Greenhouse Gas (GHG) data to the state, unless they are providing data directly to The Climate Registry (TCR). Currently three Freedonia companies have agreed to supply data to TCR. The remainder of the Title V facilities must supply GHG data to Freedonia DEP annually using the same online system as NEI data. This system is called the **Permitting and Air Reporting System of Freedonia (PARSOF)**.

1.1. Map EIS & GHG data elements to the CERS XML Schema.

This includes detailed analysis and specifications for transferring data from PARSOF to CERS schema.

1.2. Implement the **production EIS data flow**. This includes:

- Develop the Extract, Transform and Load (ETL) process to load PARSOF data to staging tables
- Develop an EIS node plug-in to transfer the data from the staging tables to XML
- Configure the node data flow
- Test the data flow and perform quality assessment

1.3. Implement the **GHG data flow** to production.

Repeat step 1.2 with minor adaptations for GHG data.

1.4. **Improve GIS Locations** for emission points from Title V facilities, including preparation of geospatial metadata for the Latitude/Longitude Data Standard and meeting EPA's minimum accuracy of 25 meters for most points. This will improve the accuracy of data in both EIS and GHG.

This includes obtaining and entering locations and stack parameters for approximately 9,500 emission points into the PARSOF database. Some of these data will need to be transformed from the Breeze modeling software, and some obtained from paper maps and checked against aerial photos. Also if time allows, other locations and associated web applications for environmental assessment/integration may be improved.

1.5. **Add application module** to the Facility Explorer web application **to allow easy access to emission point locations** and associated data. This will be used to evaluate emission rates of surrounding major facilities within a given radius of a proposed construction project.

This is a required assessment under the Prevention of Significant Deterioration (PSD) permitting program.

Currently when a construction project is proposed, the applicant contacts DEP who then queries the database for nearby sites, and manually finds the emission point data for each site to send to the applicant. The proposed web application module will allow the applicant to run a simple query themselves, thus obtaining the data immediately, and completely eliminating the need for DEP staff to find data.

The proposed application module includes programming to load the emission point locations as sub-entities into Freedonia's Environmental Facilities Database (EFD) warehouse, request the search, do the GIS query, retrieve needed report data from EFD and PARSOF, and build the report using SQL Reporting Services. The report will include:

- **facility** name, address, and plant ID;
- permitted or potential facility-wide **emission rates** in tons per year for: SO₂, NO_x, CO, Pb, PM₁₀, and (if available) PM_{2.5};
- a list of **emission point locations** with XY coordinates in UTM;
- permitted or potential **emission rates** and the most recent two years of actual emissions for each emission point for: SO₂, NO_x, CO, Pb, PM₁₀, and (if available) PM_{2.5}; and
- **stack parameters**, including stack ID, height, diameter, temperature, flow rate, emission point type, bypass stack (Y/N), and obstructed (Y/N).

2. Water Quality Exchange (WQX) Flow

The replacement database for STORET, AWQMS (Ambient Water Quality Management System) is being developed by several states and Region 8, including Illinois, Minnesota, Utah, the National Park Service, and possibly Alaska. Freedonia is planning to implement this database to replace Freedonia STORET as the state database.

- 2.1. **Map** the data elements to the XML Schema. This includes detailed analysis and specifications for transferring data from the state database to WQX schema.
- 2.2. **Implement** the data flow to CDX (EPA's Node). This includes:
 - adapt the 4.1 WQX Windsor node plug-in to transfer the data from the state database to XML;
 - set up and configure the node; and
 - test the data flow and perform quality assessment.
- 2.3. **Document the flow implementation** for use by other states using AWQMS and the same type of Node. Illinois and Minnesota use a Windsor .NET node. Other agencies have also mentioned the possibility of using the Windsor Node by the time this is implemented. Freedonia DEP will develop the documentation and provide any applicable code to these other agencies for streamlined implementation.
- 2.4. Publish a **Web Service** which will allow applications to pull water quality monitoring data. This web service will allow applications to query water quality monitoring data from the

state’s database. Initial plans are for at least two staging tables which can be populated using an automated DTS/SSIS or other script.

At a minimum, the staging tables should include the following elements and any other required elements in the WQX schema.

The output will be in WQX standard XML and include all elements in the staging tables. This grant will focus on making this work with Freedomia data. However, this can be extended later in two ways:

- add data to Freedomia’s staging tables from other sources, such as USGS, the Freedomia Pesticide Monitoring database (FPEST), and raw water samples from the Safe Drinking Water Information System (SDWIS). This will allow applications to pull easily pull monitoring data from a variety of sources; or
- share the code and documentation with other states using AWQMS.

Goals, Outputs, Target Dates and Outcomes

Goal	Output	Target Date ¹	Outcome
EIS & GHG Data Flows	1.1 CERS data mapped to XML schema	Jan. 1, 2011	Increased availability of timely, high quality data to other Exchange Network partners will improve environmental decision-making.
	1.2 EIS flow to EPA becomes operational	June 1, 2011	
	1.3 GHG flow to EPA becomes operational ²	Dec. 31, 2011	
	1.4 Improve GIS locations & geospatial metadata for air release points ³	Sept. 30, 2012	
	1.5 Add Assessment Module ³ to evaluate air emissions near new construction projects	Mar. 31, 2012	
WQX ⁴	2.1 Data mapped to XML schema ²	Mar. 31, 2011	Increased availability of data to other Exchange Network partners Electronic availability of standardized, timely, high quality data over the Exchange Network will improve the analysis of water quality monitoring data and lead to better decision-making.
	2.2 Implement WQX Flow ³	Sept. 30, 2011	
	2.3 Written documentation of implementing WQX with multi-state AWQMS database	Jan. 31, 2012	
	2.4 Publish Web Service	Sept. 30, 2012	

¹ Estimated Grant Period: October 1, 2012 through Sept. 30, 2014. If DEP is notified of the grant award by August 1 or before, dates will be shifted so they fall within the grant period.

²These tasks also accomplish the following intermediate outcome:

- **Improved business processes** that facilitate **burden reduction** on the regulated community.

³These tasks also accomplish the following two intermediate outcomes:

- **Increased speed and timeliness of data exchange** by allowing data exchanges to happen more frequently, thereby decreasing the lag between partner systems;
- **Increased efficiency** of data exchange by reducing administrative burden, including reducing or eliminating manual intervention for tasks such as scheduling, resubmissions, or security.

⁴This goal also accomplishes the following intermediate outcomes.

- Economies of scale through shared infrastructure to achieve **reduced costs and expanded functionality**.

Please see our attached Detailed Budget which links expected investments under this agreement to each goal to support and complete the proposed work referenced in this Narrative.

Appendix F

Contracts and Subawards

Can funding be used for the applicant to make subawards acquire contract services or fund partnerships?

EPA awards funds to one eligible applicant as the recipient even if other eligible applicants are named as partners or co-applicants or members of a coalition or consortium. The recipient is accountable to EPA for the proper expenditure of funds.

Funding may be used to provide subgrants or subawards of financial assistance, which includes using subawards or subgrants to fund partnerships, provided the recipient complies with applicable requirements for subawards or subgrants including those contained in 40 [CFR](#) Parts 30 or 31, as appropriate. Applicants must compete contracts for services and products, including consultant contracts, and conduct cost and price analyses to the extent required by the procurement provisions of the regulations at 40 CFR Parts 30 or 31, as appropriate. The regulations also contain limitations on consultant compensation. Applicants are not required to identify subawardees/subgrantees and/or contractors (including consultants) in their application. However, if they do, the fact that an applicant selected for award has named a specific subawardee/subgrantee, contractor, or consultant in the application EPA selects for funding does not relieve the applicant of its obligations to comply with subaward/subgrant and/or competitive procurement requirements as appropriate. Please note that applicants may not award sole source contracts to consulting, engineering or other firms assisting applicants with the application solely based on the firm's role in preparing the application.

Successful applicants cannot use subgrants or subawards to avoid requirements in EPA grant regulations for competitive procurement by using these instruments to acquire commercial services or products from for-profit organizations to carry out its assistance agreement. The nature of the transaction between the recipient and the subawardee or subgrantee must be consistent with the standards for distinguishing between vendor transactions and subrecipient assistance under Subpart B Section .210 of [OMB Circular A-133](#) , and the definitions of subaward at 40 CFR 30.2(ff) or subgrant at 40 CFR 31.3, as applicable. EPA will not be a party to these transactions. Applicants acquiring commercial goods or services must comply with the competitive procurement standards in 40 CFR Part 30 or 40 CFR Part 31.36 and cannot use a subaward/subgrant as the funding mechanism.

How will an applicant's proposed subawardees/subgrantees and contractors be considered during the evaluation process described in Section V of the announcement?

Section V of the announcement describes the evaluation criteria and evaluation process that will be used by EPA to make selections under this announcement. During this evaluation, except for those criteria that relate to the applicant's own qualifications, past performance, and reporting

history, the review panel will consider, if appropriate and relevant, the qualifications, expertise, and experience of:

(i) an applicant's named subawardees/subgrantees identified in the application if the applicant demonstrates in the application that if it receives an award that the subaward/subgrant will be properly awarded consistent with the applicable regulations in 40 CFR Parts 30 or 31. For example, applicants must not use subawards/subgrants to obtain commercial services or products from for profit firms or individual consultants.

(ii) an applicant's named contractor(s), including consultants, identified in the application if the applicant demonstrates in its application that the contractor(s) was selected in compliance with the competitive Procurement Standards in 40 CFR Part 30 or 40 CFR 31.36 as appropriate. For example, an applicant must demonstrate that it selected the contractor(s) competitively or that a proper non-competitive sole-source award consistent with the regulations will be made to the contractor(s), that efforts were made to provide small and disadvantaged businesses with opportunities to compete, and that some form of cost or price analysis was conducted. EPA may not accept sole source justifications for contracts for services or products that are otherwise readily available in the commercial marketplace.

EPA will not consider the qualifications, experience, and expertise of named subawardees/subgrantees and/or named contractor(s) during the application evaluation process unless the applicant complies with these requirements.

Appendix G

Checklist of Documents to Submit

The following documents are required under this Solicitation Notice and constitute the full application to EPA for assistance agreement funding. Fillable forms can be obtained from <http://www.epa.gov/ogd/AppKit/application.htm>). All applicable forms and documents must be submitted and validated within grants.gov, postmarked, or delivered by an overnight courier service **at or before 11:59pm on November 4, 2011**. To confirm applicant eligibility and/or applicability of any of the listed forms or documents below, please contact Ryan Humrighouse at (202) 566-1680 or Humrighouse.ryan@epa.gov.

- Standard Form 424, “Applications for Federal Assistance”
- Standard Form 424A, “Budget Information for Non Construction Programs”
- Standard Form 424B, “Assurances for Non Construction Programs”
- Certification Regarding Lobbying Form
- Standard Form 5700-54, “Key Contacts Form”
- EPA Form 4700-4, “Preaward Compliance Review Report”
- Project Narrative
 - No more than 10-pages, single-spaced.
 - Must address Evaluation Criteria [*Section V-A*] and link activities to results/outcomes.
- Detailed Itemized Budget
 - Describe both total project budget and the costs associated with each major goal.
 - If budget includes indirect costs, an approved IDC Agreement is required.
- Standard Form LLL, “Disclosure of Lobbying Activities”, if applicable
- Negotiated Indirect Cost Agreement, if applicable
- Programmatic Resources and Personnel
- Cover Letter
 - Recipient Information
 - Project Title
 - Type of Assistance Vehicle identified [*Section II-B*]
 - Partners, if applicable [*Section III-C*]
 - Brief Project Summary
 - Contact Information for Project Lead
 - Signature of Executive as Authorized Organizational Representative
- Exchange Network Implementation Plan, if applicable [*Section III-B-3*]
- Description of Inter-Tribal Consortium Eligibility, if applicable
- Formal Project Partners, if applicable
 - Project Narrative [*above*] details roles and responsibilities of lead and partners in carrying out each project goal.
 - If lead will distribute funding to partners, describe methodology or state no distribution.
 - Letters of support and intent included from all proposed partners.
- List of Federally and/or Non-federally Funded Assistance Agreements

Appendix H

Sample Implementation Plan

State Implementation Plan for National and Priority Systems Exchange Network Flows						
State:		Agency:				
National Priority Systems Data Flows	Authority or Delegation (Yes or No)	Direct User (Yes or No)	Flowing Data (Yes, No or N/A)	Date of latest Data Exchange	Target Date for a sustained data flow	Explanation or other comments
AQS						
EIS						
WQX						
SDWIS						
UIC						
eBeaches						
ICIS NPDES						
RCRAinfo						
FRS						
TRI						

U.S. ENVIRONMENTAL PROTECTION AGENCY Quality Assurance Reporting Form for Use by Recipients of Assistance Agreements				
Recipient Organization:		EPA Award Number:		
Name:		Project/Program Period(starting and ending dates, mm/dd/yyyy):		
Address:				
Activity Group: <input type="checkbox"/> Infrastructure Development <input type="checkbox"/> Planning, Mentoring, and Training <small>(check all that apply)</small> <input type="checkbox"/> Data Exchange, Analysis and Integration <input type="checkbox"/> Challenge				
Goal	Task	Output	Outcome	Quality Assurance Measures
Instructions: - Please submit electronically to your project officer within 90 days of award. - For Quality Assurance Measures, please refer to current Solicitation Notice for Quality Assurance Guidelines. - For Goals, please refer to goals outlined in your assistance agreement work plan.				
Paperwork Reduction Act (PRA) Burden Statement: The public reporting and recordkeeping burden for this collection of information is estimated to average one hour per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.				