



# **Fiscal Year 2019 National Environmental Information Exchange Network Grant Program**

## **Solicitation Notice**

**February 1, 2019**

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

# Fiscal Year 2019 National Environmental Information Exchange Network Grant Program Solicitation Notice

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## Overview Information

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

**Funding Opportunity Title:** FY 2019 National Environmental Information Exchange Network Grant Program

**Announcement Type:** Request for Applications

**Notice Funding Opportunity Number:** EPA-OEI-19-01

**Catalog of Federal Domestic Assistance (CFDA) Number:** 66.608

**Important Dates:** April 8, 2019 - Deadline for submitting applications to EPA  
October 1, 2019 - Tentative expected award of FY 2019 Exchange Network Grants

## I. Funding Opportunity Description

The EPA Exchange Network Grant Program is soliciting project proposals that use the Environmental Information Exchange Network (EN) to:

- Facilitate sharing of environmental data, especially through shared and reusable services.
- Streamline data collection and exchanges to improve its timeliness for decision making.
- Increase the quality and access to environmental data through discovery, publishing, outbound, and analytical services so it is more useful to environmental managers.
- Develop foundational EN shared services to reduce burden and avoid costs for co-regulators and the regulated community.
- Expand and improve participation in the EN by strengthening the requisite information management and technology capabilities for interested parties to fully participate in the EN.

Section I-E summarizes the priorities and associated activities that are eligible for funding through the EN Grant Program.

### I-A. Background

The EN is an inter-governmental partnership fostering better environmental management and decision-making through increased access to timely, high quality environmental information. The EN, launched in 2002, uses a standards-based approach to facilitate environmental data sharing among EPA, states, tribes and territories. This framework allows organizations to exchange data over the Internet regardless of the specific information technology used. (See <http://www.exchangenetwork.net/>) The EN is the foundation of [E-Enterprise for the Environment](#) (EE) also a joint state, tribal, territory and EPA partnership, launched in 2013. EE goals include expanding access to environmental data, personalizing access experience through customized portals, and re-engineering and streamlining regulatory information collection and reporting

processes to achieve burden reduction and cost avoidance. The governance bodies of the EN and EE efforts merged in 2015 and governance activities are referred to as EE/EN governance. The EN remains the key mechanism for implementing technological aspects of the business process stream-lining and reengineering being pursued by the EE initiative.

Phase 1 of EN implementation focused on transforming the regulatory reporting processes of eight national data flows, by moving them from out-of-date reporting methods to standardized electronic reporting approaches based on EN data standards and technology. Phase 2, initiated in 2013, focuses on expanding the availability of published data and making the process of sharing data more efficient. This is done by developing data analysis and display services, making those services available to all partners; implementing innovative data collection, monitoring and analytical systems; and enabling more electronic reporting.

The EN Phase 2 Goals and associated strategies and action items documented in the [Implementation Plan for Phase 2 of the Exchange Network \(2013\)](#) along with the shared goals of EE form the basis for the program priorities in Section I-E.

### **I-B. Grant Program Funding History and Results**

FY 2019 is the eighteenth year EPA will award competitive funding to eligible partners for projects through the Exchange Network Grant Program. Between FY 2002 and FY 2018, EPA provided approximately \$228 million for state, tribal, and territorial awards and associated program support through the grant program. As of May 2018, all 50 states and the District of Columbia, 77 tribes, and 5 territories have received Exchange Network grants.<sup>1</sup> These grants support better environmental decisions by promoting the use of more timely and consistent data which is shareable by partners across the EN as well as by environmental professionals and the public.

### **I-C. Assistance Activities**

This EN Grant Program Solicitation Notice requests that states, tribes, inter-tribal consortia, and territories submit applications with goal(s) that support the EN priorities set forth by EN/EE governance. The priorities are found in Section I-E and explained further in Appendices A-C. Applicants may propose projects that include activities other than those listed as examples in Section I-E and appendices A-C, provided they are consistent with priorities set forth by the EE/EN governance groups and conform to EN technologies, services and specifications.

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](#).

*Applicants are responsible for reading and complying with the instructions and criteria described in this solicitation.*

### **I-D. Environmental Results Supported by Assistance Activities**

The activities to be funded under this announcement support EPA's FY 2018-22 Strategic Plan. Awards made under this announcement will support **Goal 3: Rule of Law and Process, Objective 3.4: Streamline and Modernize**, of the [EPA Strategic Plan](#). In addition to Goal 3, Objective 3.4, awards may also support other strategic goals and objectives of the EPA strategic plan such as:

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<sup>1</sup> For descriptions of previously awarded Exchange Network Grants, please see: <https://www.epa.gov/exchangenetwork/previous-exchange-network-grant-projects>

- Goal 1: Core Mission
  - Objective 1.1 Improve Air Quality
  - Objective 1.2 Provide for Clean Air and Safe Water
  - Objective 1.3 Revitalize Land and Prevent Contamination
  - Objective 1.4 Ensure Safety of Chemicals in the Marketplace
- Goal 2: Cooperative Federalism
  - Objective 2.1 Enhance Shared Accountability
  - Objective 2.2 Increase Transparency and Public Participation
- Goal 3 Rule of Law and Process
  - Objective 3.2 Create Consistency and Certainty
  - Objective 3.5 Improve Efficiency and Effectiveness

All applications must be for projects that support Goal 3, Objective 3.4, and may also include one or more of the additional goals and objectives listed.

EPA also requires that grant applicants adequately describe environmental outputs and outcomes to be achieved under assistance agreements (see EPA Order 5700.7A1, Environmental Results under Assistance Agreements, [https://www.epa.gov/sites/production/files/2015-03/documents/epa\\_order\\_5700\\_7a1.pdf](https://www.epa.gov/sites/production/files/2015-03/documents/epa_order_5700_7a1.pdf)). Applicants must include specific statements describing the environmental results of the proposed project in terms of well-defined outputs and, to the maximum extent practicable, well-defined outcomes that will demonstrate how the project will contribute to the goals and objectives described above.

1. **Outcomes:** The term “outcome” means the result, effect or consequence that will occur from carrying out an environmental program or an activity that is related to an environmental or programmatic goal or objective. Outcomes may be qualitative and environmental, behavioral, health-related or programmatic in nature, but must also be quantitative. They may not necessarily be achievable within an assistance agreement funding period.
2. **Outputs:** The term “output” means an environmental activity, effort, and/or associated work product related to an environmental goal and objective 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.

### **I-E. Exchange Network Program Priorities**

This section presents specific funding priorities for the FY 2019 EN Grants Program. The priorities stated here are aligned with the priorities of the EN/EE governance bodies. There are five priorities for the FY 2019 EPA Exchange Network Grant Program:

1. Integrate foundational EN services into environmental business processes.
2. Eliminate industry paper reporting and expand e-reporting among co-regulators.
3. Expand data access and availability.
4. Improve environmental management through advanced data monitoring and transmittal processes.
5. Augment the information management capacity of EN partners.

Details on the purpose, background, available services, and cost estimates for project activities are contained in the appendices at the end of this solicitation. Applicants can propose projects that align with one or more of the following funding opportunities.

Each funding opportunity in the following section is labelled as an individual opportunity or partnership opportunity. The nature of the EN as cooperative, national partnership demands that some projects funded under the EN Grant Program need to be nationally scalable to become foundational EN standards or services for all partners. To give these projects the best opportunity to succeed on the national/regional scale, EPA encourages buy-in for projects intended to be nationally scalable through formal partnerships. While EPA cannot require that an applicant have partners, EPA will only consider applicants with partners for projects that are intended to be nationally scalable. These are labeled as partnership opportunities in this section. Applicants without partners should apply for the individual opportunities, which may result in scalable products, but are usually focused on activities that support their own organizations' business goals to integrate their business into the EN.

### **Funding Opportunities under Priority 1: Integrate Foundational EN Services into Environmental Business Processes**

The ‘build once, use many times’ philosophy of the EN is demonstrated in the services available to all EN/EE partners. These services enable individual organizations to avoid costs associated with building, securing and maintaining the data and technology infrastructure that support the implementation of their program missions. Usage of the foundational services related to reference look-up tables and data validation services also result in more consistent and better-quality data for use in program implementation. A summary of each foundational EN service is contained in this section. Additional information, cost estimates, and activities to consider when proposing projects for this opportunity are found in [Appendix B](#).

Applicants applying under Priority 1 may propose projects in one or any combination of the three following sub-categories:

#### **1. Integrate Foundational EN Services into their Business Processes:**

##### ➤ **Virtual Exchange Services (VES) (Individual Opportunity)**

EPA invites applicants to propose projects with the goal of transitioning a state, tribe or territory from using a physical node on their own servers to using the shared, scalable, cloud-based EN virtual exchange services (VES) for existing data flows or establishing new EN data flows using VES. Applicants may also apply to implement data flows on VES while keeping their existing physical nodes and associated flows. Investigating various ways of interconnecting from the partner staging tables or database servers (backend) to the VES in the cloud environment should also be goal of the proposal. A shift to VES decreases resource needs for data exchanges by avoiding the software licensing, procurement, and node administration costs of traditional EN node servers; allowing focus to be on data flow configuration and publishing new services and data. [Appendix B](#) contains additional information on Virtual Exchange Services.

##### ➤ **Enterprise Identity Bridge (Identity Management) (Partnership Opportunity)**

Applicants are encouraged to propose projects that use the EN Enterprise Identity Bridge to integrate enterprise security services into new or existing websites, web applications and portals. The EN Enterprise Identity Bridge is an open standards-based, unified interface that enables access to the hundreds of portals, applications, websites, and services in EN partners' domains. Use of the Identity Bridge eliminates the need for multiple registrations and identity management processes across user accounts. The

standards used by the Identity Bridge are widely supported in almost all platforms. There are also many toolkits available for integrating with the Enterprise Security Bridge allowing identity federation, a process of sharing user identities and user authentication processes between two parties. [Appendix B](#) contains additional information on the **Enterprise Identity Management Bridge**.

➤ **Shared CROMERR Services (Individual Opportunity)**

EPA's Cross-Media Electronic Reporting Rule (CROMERR) sets technology-neutral, performance-based standards for systems used by states, tribes, and local governments to receive electronic reports and documents from entities regulated under EPA-authorized programs. These standards cover a variety of system functions (e.g., security, user identification, etc.) designed to make electronic reports as legally defensible as paper submittals. EN Partners with a need to implement CROMERR-compliant systems for their electronic reporting programs may apply to leverage EPA's centralized shared CROMERR services (SCS) to meet their organizational and system needs. Many standard and advanced CROMERR services may be implemented independently or combined, and/or integrated with Virtual Exchange Services (VES) for greater efficiency. [Appendix B](#) contains additional information on Shared CROMERR Services.

➤ **Substance Registry Service (SRS) (Individual Opportunity)**

The Substance Registry Service (SRS) is EPA's centralized resource for sharing basic information about chemicals, biological organisms, and other substances that EPA and/or other organizations (e.g., state agencies, tribal agencies, other federal agencies) track or regulate. Grant funds are available to integrate SRS services into EN partner systems. Web services are available to pull information from SRS and transfer it to an organization's system for integration into online reporting forms, other tools, or for displaying substance lists on their websites. States, tribes, and territories also can improve public access to health and safety information by creating direct links from their websites to individual SRS records. SRS also has a widget that EN partners can incorporate into their web pages. [Appendix B](#) contains additional information on the features of SRS and the types of activities that should be considered when developing a grant proposal for integrating SRS into other systems.

➤ **Facility Registry Services (FRS) (Individual or Partnership Opportunity)**

EPA's FRS integrates facility information from EPA program systems, other federal agencies, state, tribal, and local agencies' environmental systems. Applicants for this opportunity should consider integrating FRS data in one or two-way flows using available FRS APIs, web services, the most recent version of FacID, FRS query services, or error correction services. Data integration between partner systems reduces reporting burden and provides more accurate and timely facility information for environmental program management. Applicants should also consider participating in E-Enterprise facility web service pilots to further develop services capabilities between EPA and partner systems. Additional background information on FRS and suggestions for potential projects are provided in [Appendices A and B](#).

## 2. Establish Partnerships for Continued Development of EN Foundational Services:

### ➤ **E-Enterprise Portal (Individual or Partnership Opportunity)**

The E-Enterprise Portal will provide industry and the public with a single interface for conducting business with environmental agencies and serve as a national gateway to a network of environmental agency portals administered by States, Tribes, Territories, and EPA programs. This funding opportunity invites applicants to partner with EPA and other states, tribes, or territories to identify and provide new information, new functionality or business tools to enhance user experience in the E-Enterprise Portal to reduce access burden for co-regulators by presenting information and services in a centralized way for and the regulated community to share and reuse information services. Applicants are also encouraged to propose projects to develop applications or components within states, tribes, and territories' portals that publish, visualize and/or exchange data and are designed in a way that can be shared across the entire EN use community. **Additional background information on the E-Enterprise Portal, active E-Enterprise projects and suggestions for specific projects activities are in [Appendix B](#).**

### ➤ **Law and Regulations Service (Partnership Opportunity)**

EPA is cataloging federal environmental laws, the regulations that implement those laws, and the EPA programs that oversee those regulations. The Laws and Regulations Service (LRS) will not only help EPA improve information management and discovery but will also help states and tribes discover which regulations may be applicable to a given substance or industry. This opportunity allows applicants to participate in a cooperative agreement with EPA to compile information about their state, tribal, or territorial laws and regulations, which can help to build a more comprehensive picture of how substances or industry sectors are regulated. EPA will work with co-regulators to catalog their laws and regulations and identify the programs that manage them. A long-term goal is to make this information available via the E-Enterprise Portal, along with the Federal regulations. The ultimate goal is to have a single interface, or portal, (which might be the E-Enterprise portal) for industry and the public to discover potentially applicable regulations whether at the state, tribal, or federal level. **More information about this opportunity is in [Appendix B](#).**

## 3. Develop a New e-Permitting or e-Reporting Shared Service (Partnership Opportunity)

The focus of this opportunity is to enable states, tribes, or territories to develop and implement a service related to reporting or permitting from the regulated community for use across the entire EN/EE community. This is a partnership opportunity and will be a cooperative agreement with EPA. The application must clearly explain the roles of all partners including EPA. The proposed service should not be duplicative of an existing EE shared service and demonstrate the inclusion of requirements from multiple partners within a same line of business. Automated solutions should be connected to results of an EPA or partner process improvement activity, such as LEAN, focused on improving the permitting process. The applicant must demonstrate the scalability and share-ability of the proposed service.

Potential activities could include but are not limited to:

- Working with EN/EE partners to identify common processes in e-Reporting and e-Permitting that span across environmental programs and agencies.
- Working with results from a federal or state agency process improvement activity to develop, or implement an existing, shared service solution that will improve the exchange of permitting.
- Proposing the establishment of an e-Reporting/e-Permitting team of EPA and partners under the EN/EE governance to address process requirements and common approaches that could result in or inform the development of shared services.
- Develop and test minimally viable products that will automate increments of e-Reporting and e-Permitting processes for both external and internal parties.
- Develop guidance, starter kits, and outreach materials for these shared services to ensure wide adoption as applicable.

This opportunity encompasses the design, development, testing, and at a minimum, limited deployment of the service. Creation of a prototype, pilot, or other limited-type functioning IT product, is an acceptable example of limited deployment of the service. For this proposal to be eligible for funding, applicants must agree to include mechanisms for the maintenance and sustainability of this service and include a Service Level Agreement that outlines what expectations service users can have.

Additionally, EPA has developed a Title V Electronic Permitting System (EPS) to allow EPA to receive and collaborate on air permits from permitting authorities. This system, designed with the same shared services used by states to submit State Implementation Plans to EPA (SPeCS for SIPS), is being used by EPA Regions to receive draft Title V permits from participating states. EPA is looking to explore the potential for increased state and tribal involvement in the CAA permitting processing using EPS; which may include collaboration with partners on improving efficiency of EPS and opportunities for exchanging and integrating data and services locally or centrally to support public information requests.

## **Funding Opportunity under Priority 2: Eliminate Industry Paper Reporting and Expand e-Reporting Among Co-Regulators**

### ➤ **Data Flows (Individual Opportunity)**

Submitting data to priority data systems continues to be an Exchange Network grant priority. This includes many of the original priority systems (prior to 2012) and systems developed since 2012. If you are new to one of the following programs on the EN, proposals are still being considered for many of the original priority systems or building out a new exchange identified more recently by a program. Applicants must commit to putting an exchange into production to receive funding for establishing a new exchange. Applicants may propose to put one or more of the following data flows into production.

The original priority systems still being considered for funding in FY 2019 are as follows:

- [Air Quality System \(AQS\)](#)
- [eBeaches](#)

- [Emissions Inventory System \(EIS\)](#)
- [Facility Registry Service \(FRS\)](#)
- [Integrated Compliance Information System – National Pollutant Discharge Elimination System \(ICIS-NPDES\)](#)
- [Resource Conservation and Recovery Act Information \(RCRAInfo\)](#)
- [Toxic Release Inventory System \(TRIS\)](#)
- [Water Quality Exchange \(WQX\)](#)

New priority systems include:

- [Assessment TMDL Tracking and Implementation System \(ATTAINS\)](#)
- [Combined Air Emissions Reporting \(CAER\)](#)
- [Compliance Monitoring Data Portal \(CMDP\)](#)
- [Electronic Notice of Intent \(eNOI\) flow to Integrated Compliance Information System – National Pollutant Discharge Elimination System \(ICIS-NPDES\)](#)
- [Integrated Compliance Information System – Air \(ICIS-Air\), which replaces the Air Facility System or AFS](#)
- [Radon](#)
- [Safe Drinking Water Information System \(SDWIS\) Prime](#)

Applicants establishing new data flows should consider reusing existing components where appropriate (i.e., Virtual Exchange Services). Many of these services will reduce the cost and time required to implement a new exchange.

*[Appendix A](#) provides additional information from EPA Program Offices related to many of these priority systems, including activities grant applicants should consider.*

### **Funding Opportunities under Priority 3: Expand Data Access and Availability**

- **Data Availability Projects (Partnership Opportunity)**  
Development of reusable and discoverable (or reuse of existing) tools and applications, with demonstrated interest by other EE/EN partners, that deliver automated access to environmental data continues to be a priority in FY 2019. These tools include, but are not limited to:
  - Desktop, laptop and tablet/smartphone applications that provide access to and analyze/display environmental data.
  - Websites that provide users access to data sets and a range of analytical and display tools.
  - Dashboards that provide real time program status information to program managers and executives.

Applicants should consider opportunities to share data across programs within their organization, across agencies within a state or tribe, across states, or with EPA. EPA is especially interested in applications/websites that support cross-program data integration and support more efficient environmental business processes such as permit writing, compliance inspections, cross-jurisdictional data comparisons, analyses or integration.

Applicants should also consider opportunities to build applications/websites that support EPA's open data and transparency goals <https://www.epa.gov/open> and that serve interested non-governmental organizations, research institutions, other communities of interest and the public.

Choosing the appropriate technology approach for a data availability project is one of the key decisions in preparing a grant application. The project narrative should explain how the project and technology choice (e.g., RESTful services or SOAP) meet the applicant's business needs and how the project complies with Exchange Network guidance and standards. Applicants should review governance-developed guidance and standards for an explanation of RESTful web services, APIs and other options available for building EN-compliant services ([www.exchangenetwork.net/rest-guidance](http://www.exchangenetwork.net/rest-guidance)).

Grantees should make data available in eXtensible Markup Language (XML) format or, as business needs dictate, another machine-readable format such as JavaScript Object Notation (JSON) or Comma Separated Values (CSV or flat file). Additionally, the data should be of regional and/or national interest. Example datasets of interest include institutional controls at contamination sites, data on cleanup sites, data sets of national significance to tribes (such as open dumps), Underground Storage Tank data, and data that support environmental management of multi-state or regional airsheds, watersheds, and water bodies of priority concern. See [Appendix A](#) for more detail on specific project opportunities. Information on the Exchange Network's technical standards and design guidance are available on the Exchange Network website (<http://www.exchangenetwork.net/knowledge-base>).

➤ **Enabling Geospatial Data: Open Data Services (Individual Opportunity)**

Applicants should consider opportunities to publish geospatial data sets critical to their missions, including, but not limited to administrative boundaries such as those at Superfund national priority list sites, cadastral data, and facility and compliance related data that are regularly updated and can be integrated with the Facility Registry Service. In addition, applicants are encouraged to review the list of 176 geospatial datasets designated as National Geospatial Data Assets by the Federal Geographic Data Committee (FGDC) Steering Committee ([https://www.fgdc.gov/ngda-reports/NGDA\\_Datasets.html](https://www.fgdc.gov/ngda-reports/NGDA_Datasets.html)) to ascertain if there are any additional publishing opportunities for these data sets that support the mission goals of multiple federal, state, and local agencies. Data should be published as open, standards compliant data services that are accessible through REST APIs and can be easily integrated into applications by EPA, state, tribal or territorial partners, and the public, and can be registered in EPA's Environmental Dataset Gateway (EDG), data.gov, and geoplatform.gov.

**Funding Opportunities under Priority 4: Improve Environmental Management Business Processes**

➤ **Continuous Water Quality Monitoring (Partnership Opportunity)**

Continuous water quality monitoring (monitoring performed with a sensor that measures a particular parameter or suite of parameters automatically at set intervals) is becoming more common. This project takes advantage of current thinking on the publishing approaches defined under Phase 2 of the Exchange Network and makes use of the Exchange Network REST specification. As a Phase 2 project, partners should consider approaches to make water quality sensor data available via a publishing service and make it searchable from a central portal that would be operated by EPA or by a project partner. The EPA Office of Water (OW) completed a

pilot to enable this type of data exchange (outcomes from the pilot are available here: [https://www.epa.gov/sites/production/files/201701/documents/iwn\\_lessonslearned\\_final\\_201612.pdf](https://www.epa.gov/sites/production/files/201701/documents/iwn_lessonslearned_final_201612.pdf)).

The pilot projects developed a demonstration portal that is integrating data from 8 different partners, and adding additional partners is straight forward, but does require partners to be able to publish data using the approved Open Geospatial Consortium (OGC) WaterML 2.0 standard and the Sensor Observation Service. In 2018, the E-Enterprise Advanced Monitoring team developed a recommendation report on the data standards that could be used for publishing sensor data. This report is available at: <https://e-enterprisefortheenvironment.net/our-projects/data-standards-for-continuous-monitoring-data/>. In 2018, EPA will also complete a reusable component that any partner could leverage. This component will allow a partner to register their sensors and publish the data using the OGC standards. This ‘Data Appliance’ will be deployable as a containerized Docker implementation using open-source software and will be registered and available through RCS. It is expected that this component will be available for use in late 2018. This component could be deployed in an agency’s environment or in a cloud environment. In addition to this EPA developed component, data providers should look to off-the-shelf software where possible to meet the needs of publishing data.

➤ **Field Data Collection Collaborative Pilots (Partnership Opportunity)**

Proposals are requested to develop mobile applications built on technology-neutral services that leverage Facility Registry Service (FRS) and Substance Registry Service (SRS) API’s for field data collection, review and correction of locations, sub-facility features, facility details, and substance identities. Through cooperative agreements, pilot partners will work with EPA to develop standard data templates and data formats.

**Funding Opportunities under Priority 5: Augment the Data and Technology Management Capacity of Potential EN Partners**

➤ **Territory and Tribal Capacity Building**

- **Individual Capacity Building Proposals-** Territories, tribes, and inter-tribal consortia are eligible to apply for individual capacity building grants that will enhance the applicant’s environmental programs and the applicant’s ability to share environmental data electronically with EN partners. Proposals must identify outputs that will increase the applicant’s ability to share environmental information electronically with EPA or other EN partners, (for example, developing a backend database for a priority data system or implementing an intra-tribal data exchange). Proposals may include developing a data management plan, but the plan must lead to the development of a test or prototype system. Applicants may apply for an individual capacity building grant up to \$200,000.
- **Collaborative Capacity Building Proposals-** Additionally, territories, tribes, and inter-tribal consortia are eligible to apply for partnership grants. These proposals must include multiple partners and identify an experienced EN partner that can serve as a mentor. Collaborative capacity building proposals may include funding requests for the mentoring partner’s personnel costs and travel. To serve as a mentor for a capacity building application, an experienced partner must currently report or

publish data for one or more environmental programs using its own node or Virtual Exchange Services. A proposal must include a commitment letter from the mentor tribe, intertribal consortium, territory, or state. In the case that a territory, tribe, or intertribal consortium applying for a capacity-building grant can demonstrate experience implementing an Exchange Network data flow, **the requirements for identifying a mentor will be waived**. Applicants may apply for a collaborative capacity building grant up to \$400,000.

## 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 2019, EPA expects to award about \$6,000,000 for 20-25 assistance agreements of up to \$400,000 each. 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.

Most awards will be in the \$50,000 to \$300,000 range. **Awards for an individual assistance agreement cannot exceed \$200,000. EPA may make a limited number of awards to collaborative, partnership assistance agreements. Budgets for these projects cannot exceed \$400,000.** EPA remains committed to, at a minimum, awarding tribal assistance agreements equal to 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 three years.

**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.

**Partial Funding.** In appropriate circumstances, EPA reserves the right to partially fund applications by funding discrete portions or phases of proposed projects. If EPA decides to partially fund an application, 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.

### 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 direct funding, or single grant 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 primarily 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. EPA will negotiate the precise terms and conditions of “substantial involvement” as part of the award process. Federal involvement may include close monitoring of the recipient’s performance; collaboration during the performance of the scope of work; in accordance with 2 CFR 200.317 and 2 CFR 200.318, as appropriate, review of proposed procurements; reviewing qualifications of key personnel; and/or review and comment on the content of printed or electronic publications prepared. EPA does not have the authority to select employees or contractors employed by the recipient. The final decision on the content of reports rests with the recipient. 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. An applicant may also request to create a new PPG that would include the project proposed under this solicitation. Absent a request from the recipient for inclusion in or creation of 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 propose EN project funding for [development, modernization, and enhancement](#) activities. Applicants may *not* use EN funding for the following functions (see [Appendix G](#) 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** more than 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.

- **Development and deployment of partner nodes** – Instead, EPA makes available and encourages all applicants to request funds to use and configure the Agency's Virtual Exchange Services.
- **Operations and maintenance of flows**, including minor updates to schema for an existing flow.
- **Expansion of existing data flows** to include historical data or new geographic regions.

### III. Eligibility Information

#### III-A. Eligible Applicants

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 Alaska villages, and inter-tribal consortia of federally recognized tribes (e.g., the Northwest Indian Fisheries Commission).

##### *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

Other entities, such as regional air pollution control districts and some public universities may apply for assistance if they are agencies or instrumentalities<sup>2</sup> 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. EPA will not consider an application that does not contain the required documentation.

EPA recognizes that the delegation for some programs extends 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. However, most local governments that implement EPA programs are not agencies or instrumentalities of the state 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, likewise, are not eligible to apply and are encouraged to partner with a state applicant.

EPA will only evaluate applications from eligible entities (see above). EPA will notify applicants that are ineligible for funding within 15 calendar days of the

<sup>2</sup> A true agency or instrumentality is under the direct control of the state, and the state executive or other state officials may generally determine or change its management.

ineligibility determination. Applicants with questions about eligibility can contact Edward Mixon, at (202) 566-2142 or [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov). 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 Funding Goals**

Applications are only eligible for Exchange Network funding if they meet the following requirements:

1. Application includes goal(s) that lead to completion of activities listed in the Priorities Section [\(I-E\)](#), additional activities identified in Appendix A, B, or C, or others that are consistent with EN priorities. Completion in the context of the Exchange Network means placing a data flow, data publishing, web service, or other eligible projects into production.
2.
  - a. Applications must substantially comply with the application submission instructions and requirements set forth in Section IV of this announcement or else they will be rejected. However, where a page limit is expressed in Section IV with respect to application, pages in excess of the page limitation will not be reviewed.
  - b. In addition, initial applications must be submitted through [Grants.gov](#) as stated in Section IV of this announcement (except in the limited circumstances where another mode of submission is specifically allowed for as explained in Section IV) on or before the application submission deadline published in Section IV of this announcement. Applicants are responsible for following the submission instructions in Section IV of this announcement to ensure that their application is timely submitted.
  - c. Applications submitted after the submission deadline will be considered late and deemed ineligible without further consideration unless the applicant can clearly demonstrate that it was late due to EPA mishandling or because of technical problems associated with [Grants.gov](#) or relevant [SAM.gov](#) system issues. An applicant's failure to timely submit their application through [Grants.gov](#) because they did not timely or properly register in [SAM.gov](#) or [Grants.gov](#) will not be considered an acceptable reason to consider a late submission. Applicants should confirm receipt of their or application with Edward Mixon at 202-566-2142 or [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov) as soon as possible after the submission deadline—failure to do so may result in your application not being reviewed.
3. Applications must not have:
  - a. Project periods longer than three years.
  - b. Budgets greater than \$200,000 for single applicant applications.
  - c. Budgets greater than \$400,000 for partnership applications.
4. Applicants may not have more than **four** active Exchange Network assistance agreements with the Agency. EPA will determine whether an applicant meets this threshold criterion on December 31, 2018. EPA considers an assistance agreement active if the Agency has not yet approved the final technical report. EPA will consider an agreement closed if the Regional Project Officer approves the applicant's final technical report on or before December 31, 2018.

*Note: If an agency is a participant in an EN partnership grant, but not the lead agency, their participation in the grant will not be counted as an active assistance agreement. Also, agencies within a state are treated as separate applicants. For example, Alabama Department of Environmental Management and Alabama Department of Public Health are separate applicants.*

5. Applications must not request funds for activities or deliverables for which the applicant has previously received funds. If a proposed goal is similar to one previously funded, the application must describe how previously funded activities differ from those currently proposed or how the current application will complement past or ongoing work.

Additionally, if an application includes any ineligible tasks or activities (e.g., is not a priority, previously funded), that portion of the application will be ineligible for funding and may, depending on the extent to which it affects the application, render the entire application ineligible for funding.

### **III-C. Eligibility Criteria for Partnership Applications**

EPA will consider the higher funding limit (\$400,000) for projects that include more than one Exchange Network partner. The lead partner for a partnership application must demonstrate the project's support for the identified Exchange Network priorities and explain how the partnership components justify additional funding. EPA will not consider partnerships formed from within a single state, territorial, or tribal government as eligible. For instance, a partnership between an environment and a health department within a state is not an eligible partnership. EPA will limit funding for intrastate projects to the maximum funding for a single-jurisdiction grant for an Exchange Network application, which in FY 2019 is \$200,000.

### **III-D. Cost Sharing or Matching**

Grants for Exchange Network projects do not require applicants to share cost or match funds.

### **III-E. Performance Partnership Grants (PPG)**

Funds for a grant awarded under this solicitation may be included in a PPG. Applicants should indicate in their proposal submission if they anticipate incorporating the proposed project, if selected for funding, into an already existing PPG or if they intend to create a new PPG that would include the project proposed under this solicitation. The PPG should be in place before the time of grant award or created concurrently with the award of the grant funds. The proposed project under this grant announcement must have a project period that is within the PPG project period. It cannot be longer than the PPG project period. A PPG enables entities to combine funds from more than one environmental program grant into a single grant with a single budget. Under this competition, state and interstate agency proposals must first be selected under the competitive grant process described in this announcement and, in accordance with 40 CFR 35.138, the workplan commitments that would have been included in the workplan must be included in the PPG workplan. After the funds have been included in the PPG, the recipient does not need to account for these funds in accordance with the funds' original program source. Similarly, tribal and intertribal consortia proposals must first be selected under this competitive grant process in accordance with 40 CFR 35.535. If a proposed PPG workplan differs significantly from the workplan approved for funding under this competition, the Regional Administrator must consult the National Program Office (see 40 CFR 35.535). The purpose of this consultation requirement is to address the issue of ensuring that a project which is awarded funding under this competition is implemented as proposed once combined with other grant

programs in a PPG. For further information, see the final rules on Environmental Program Grants for state and interstate agencies at 40 CFR Part 35, Subpart A and tribes and intertribal consortia at 40 CFR Part 35, Subpart B. The rules are also available on the EPA's website at: [\(state\)](#) and [\(tribal\)](#). Local governments are not eligible for PPGs.

#### **IV. Application and Submission Information**

Applicants for the FY 2019 Exchange Network Grant program must submit an application package to EPA through the grants.gov website on or before **11:59 PM Eastern Time, April 8, 2019**. Application package requirements are available in [Appendix E](#), including format requirements for the project narrative (10-page limit), detailed application instructions, and procedures for obtaining a waiver for the requirement to submit applications through grants.gov. [Appendix F](#) provides a checklist of required documents to submit. Fillable versions of required forms are available at <https://www.epa.gov/grants/epa-grantee-forms>.

EPA may require applicants to submit additional or updated documents if the project is selected for funding 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 E](#) must be sent electronically via [grants.gov](#) (or by an alternative method for those applicants with an approved waiver) **no later than April 8, 2019, 11:59 PM Eastern Time**. EPA will return application packages to the sender without further consideration if they are submitted *after* the published closing date and time.

##### **IV-B. Partnership Agreements**

EPA awards funds to one eligible applicant as the recipient even if other eligible applicants are partners 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 2 CFR Part 200. 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. More detailed information on contracts and subawards under grants can be found at [www.epa.gov/grants/epa-solicitation-clauses](http://www.epa.gov/grants/epa-solicitation-clauses).

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-C. Additional Provisions for Applicants Incorporated into the Solicitation**

Additional provisions that apply to this solicitation and/or awards made under this solicitation, including but not limited to those related to confidential business information, contracts and subawards under grants, and

proposal assistance and communications, can be found at [EPA Solicitation Clauses](#). These, and the other provisions that can be found at the website link, are important, and applicants must review them when preparing proposals for this solicitation. If you are unable to access these provisions electronically at the website above, please communicate with the EPA contact listed in this solicitation to obtain the provisions.

## V. Application Review Information

### V-A. Evaluation Criteria

EPA will review only those applications, submitted by eligible entities, that meet the threshold eligibility criteria in Section III of this Notice according to evaluation criteria below. The EPA Selection Official makes final funding decisions based on an applicant’s score and other factors discussed in section V-B.

*Applicants should explicitly address all these criteria in their project narrative as part of their application package submittal. The Review Panel will not review any page over the 10-page limit of the project narrative when scoring applications, therefore all criteria should be explicitly addressed within the 10-pages of project narrative.*

EPA scores and ranks applications, with a highest possible score of 100. The possible point totals for the five major evaluation criteria are listed in the “Points” column in the table below. Point values for each sub-component within the five criteria are listed in bold text before the relevant criterion.

### Goals, Outputs, and Outcomes in Exchange Network Grant Applications

Each application must include goal(s), outputs for each goal and at least one outcome for each goal. Please be mindful that the proper use of the terms “[goals](#),” “[outputs](#)” and “[outcomes](#)” will facilitate application review and scoring. Using terms such as “objective,” “target,” “task” or “milestone” will make it more difficult for reviewers to understand and properly score the application. EPA provides an [example of how to clearly describe goals and outputs on epa.gov/exchangenetwork](#). Applicants are encouraged to follow this example.

| Criteria   | Points    |
|--|-----------|
| <p><b>1. Project Outputs and Outcomes Leading to Environmental Results</b><br/>EPA uses the following criteria to evaluate project outputs and outcomes:</p> <p><b>A. (5 Points)</b> Applicants will be evaluated based on the quality and extent to which the proposal describes how project outputs will support environmental outcomes, including those outcomes listed in <a href="#">Section I-D</a>.</p> | <b>10</b> |
| <p><b>B. (5 points)</b> Applicants will be evaluated based on the quality and extent to which the proposal describes and provides a plan for tracking, evaluating, and measuring their progress toward the achieving expected project goals.</p>   |           |

|  |    |
|--|----|
| <p><b>2. Project Feasibility and Approach</b><br/> EPA evaluates the feasibility of proposed projects using the following criteria:</p> <p><b>A. (5 points)</b> The extent and quality to which the applicant clearly describes individual project roles and responsibilities for the applicant and, for partnership projects, each partner.</p>   |    |
| <p><b>B. (5 points)</b> If the proposal involves the management of, transport of, or access to programmatic data to what extent and how well does the proposal explain how the program owning the data needs to be involved in the proposed project?</p> <p>If the proposal does not include programmatic involvement to what extent and how well does the applicant explain why programmatic involvement is not necessary?</p> <p><i>For example, “Susie Grant, multimedia inspector, will advise the Project Manager and contractor on the Compliance Dashboard design and take part in end user testing.”</i></p> | 12 |
| <p><b>C. (2 points)</b> The extent the applicant <b>explicitly</b> commits to register any new resource they develop, or reuse any existing EN resource in their project, in RCS.</p>  |    |
| <p><b>3. Exchange Network/E-Enterprise Priorities</b><br/> EPA will evaluate the consistency of proposed work with EN/EE priorities and FY 2019 EN Grant Program Priorities (Section I-E). More details on specific activities that fall under each EN Grant Program priority are in Appendices A through C.</p> <p>EPA evaluates the consistency of proposed projects with EN priorities using the following criteria:</p>  |    |
| <p><b>A. (5 points)</b> The extent and quality to which the proposal clearly defines the project goals and outputs.</p>  | 46 |
| <p><b>B. (5 points)</b> The extent and quality to which the proposal goals are in line with <i>Exchange Network</i> Grant Program priorities. Described in Section I-E</p>   |    |
| <p><b>C. (5 points)</b> The extent and quality to which the applicant clearly connects each goal to a business or administrative need of its organization.</p>   |    |
| <p><b>D. (5 points)</b> The applicant will be evaluated on the degree to which the proposal demonstrates the technical understanding to perform the proposed work.</p>   |    |
| <p><b>E. (8 points)</b> The applicant will be evaluated on the extent to which the proposed project will enhance data sharing and data availability among Exchange Network partners and provides value to both the applicant and network partners.</p>   |    |

|   |           |
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| <p><b>F. (8 points)</b> The extent and quality to which the project demonstrates a commitment to reuse existing resources by identifying and listing project-appropriate EN tools, resources, services, widgets, or applications developed by other EN partners that will be incorporated in the project.</p> <p>If none are identified, the extent to which the applicant clearly explains why reusable EN tools, resources, and services cannot be used.</p>  |           |
| <p><b>G. (10 points)</b> The extent to which the applicant plans to appropriately use or develop foundational shared services in their project.</p> <p>An applicant planning to appropriately use or develop <b>one</b> foundational shared service will receive <b>5 points</b>.</p> <p>An applicant planning to appropriately use or develop more than one foundational shared service will receive <b>10 points</b>.</p> <p>An applicant that does not plan to use or develop a foundational shared service in their project will receive <b>0 points</b>.</p> <p><i>Qualifying shared services are those listed in Appendix B. If the applicant intends to use or develop a shared service not explicitly listed in this appendix, but believes it should qualify, the applicant MUST identify the service and describe how it is nationally-scalable to meet the needs of Exchange Network partners.</i></p> |           |
| <p><b>4. Budget, Resources, and Key Personnel</b></p> <p>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.</p> <p><b>A. (5 points)</b> The applicant will be evaluated on the extent to which the budget is clearly stated and detailed, including budget amounts for each proposed goal and output in the project narrative.</p>   |           |
| <p><b>B. (5 points)</b> The applicant will be evaluated on how well the applicant demonstrates the qualifications of the project manager and other key personnel who would perform the proposed work are sufficient to complete the proposed work.</p> <p>In the case of an applicant who proposes to use a portion of this grant to hire key personnel, the applicant should submit a statement of knowledge, skills, abilities, and qualifications from the recruitment package for that position.</p>  | <b>20</b> |
| <p><b>C. (5 points)</b> The applicant will be evaluated based on the extent to which the budget provided is appropriate to accomplish project outputs and goals.</p> <p><i>Reviewers will evaluate appropriateness using the cost estimates provided in Appendix A and B, and in consultation with Subject Matter Experts</i></p>   |           |

|   |                  |
|---|------------------|
| <p><b>D. (5 points)</b> Applicants will be evaluated based on their approach, procedures, and controls for ensuring that awarded grant funds will be expended in a timely and efficient manner.</p>   |                  |
| <p><b>5. Past Performance</b></p> <p><b>A. (12 points)</b> EPA will evaluate the past performance of a grant applicant with previous Exchange Network Grant Program assistance agreements based on the percentage of:</p> <ul style="list-style-type: none"> <li>➤ Semi-annual reports they have submitted historically that demonstrate sufficient progress toward achieving the expected results in prior assistance agreements;</li> <li>➤ Progress reports submitted by their due date as required in in the terms and conditions of the prior assistance agreements by their due dates; and</li> <li>➤ Past grants funded since 2011 for which they have registered tools, resources, services, data flows, and/or the reuse of existing resources, in RCS, per the terms and conditions of EN grants.</li> </ul> <p>Please note that in evaluating applicants under the Past Performance criteria, the Agency will consider the information provided by the applicant (including semi-annual report submissions) 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).</p> <p>If an applicant does not have any previous EN Grant Program assistance agreements, the application should state this and will receive a neutral score for this criterion of 6 points. If they do not explicitly state this is their first EN grant they will receive a score of 0 points.</p> | <p><b>12</b></p> |

**V-B. Review and Selection Process**

EPA will first evaluate all applications against the threshold eligibility criteria listed in Section III of this announcement. EPA review panels will then evaluate and rank eligible applications based on the criteria listed in section V-A. EPA review panels will have the opportunity to consult with Subject Matter Experts to inform their evaluations. The Subject Matter Experts are not reviewers and will not score applications. The EPA reviewers will submit comments and rankings and make funding recommendations to the selection official, the Principal Deputy 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:** The Selection Official will make final funding decisions based on the rankings and preliminary recommendations of the EPA review panel. In making the final funding decisions, 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.
- Excessive unliquidated obligations (ULOs).
- Selection of higher priority activities over other assistance activities.
- Ensuring participation in the Exchange Network by federally recognized Indian tribes, inter-tribal consortia and Native Alaska Villages.
- EPA’s capacity to provide any requested in-kind services.

**Criteria for Identifying Excessive ULOs**

EPA may include consideration of unliquidated obligations (ULOs) in making final funding decisions. ULOs—also known as unspent balances, are not a perfect indicator of grant progress, but they can serve as a useful proxy to indicate if there are performance problems. EPA will use the appropriate criterion below to determine if an applicant has excessive ULOs, unless the applicant can explain that the excessively high ULO was not due to action or inaction on the part of the applicant. For example, an adequate explanation would be delays in the grant’s project schedule resulting from delays on the part of EPA.

| <b>Period of Performance Milestone</b> | <b>Criteria – Unspent Balance as Percent of Awarded Funds</b> |
|--|---|
| End of year two                        | Greater than or equal to 95 percent                           |
| End of year three                      | Greater than or equal to 70 percent                           |
| End of year four                       | Greater than or equal to 40 percent                           |
| End of year five                       | Greater than or equal to 10 percent                           |

**V-C. Anticipated Award Dates**

EPA anticipates that it will announce selection decisions in or around June 2019. EPA tentatively plans to issue the awards by July 31, 2019.

**V-D. Additional Provisions for Applicants Incorporated into the Solicitation**

Additional provisions that apply to this solicitation and/or awards made under this solicitation, including the clause on Reporting and Use of Concerning Recipient Integrity and Performance can be found at [EPA Solicitation Clauses](#). These, and the other provisions that can be found at the website link, are important, and applicants must review them when preparing proposals for this solicitation. If you are unable to access these provisions electronically at the website above, please communicate with the EPA contact listed in this solicitation to obtain the provisions.

**VI. Award Administration Information**

**VI-A. Award Notification**

EPA tentatively anticipates notification to successful applicants will be made via telephone or electronic or postal mail by June 2019. The notification will be sent to the original signer of the proposal or the project contact listed in the proposal. This notification, which informs the applicant that its proposal has been selected and is being recommended for award, is not an authorization to begin work. The official notification of an award will be made by GIAMD. Applicants are cautioned that only a grants officer is

authorized to bind the Government to the expenditure of funds; selection does not guarantee an award will be made. For example, statutory authorization, funding or other issues discovered during the award process may affect the ability of EPA to make an award to an applicant. The award notice, signed by an EPA grants officer, is the authorizing document and will be provided through electronic or postal mail. The successful applicant may need to prepare and submit additional documents and forms (e.g., work plan), which must be approved by EPA, before the grant can officially be awarded. The time between notification of selection and award of a grant can take up to 90 days or longer.

## **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, 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 reuse existing data flows and EN services registered in Exchange Network Discovery Services (ENDS), and other IT resources such as widgets and RESTful web services registered in Reusable Component Services (RCS). For information on reuse, please see [Appendix D](#). Applicants must also commit to register any newly developed resources in ENDS or RCS as appropriate. Information about ENDS can be found at <http://www.exchangenetwork.net/exchange-network-discovery-service-ends>, information about RCS can be found at [www.epa.gov/rcs](http://www.epa.gov/rcs). EPA requires all grant recipients issued under this solicitation notice to meet these conditions.

EPA will include a grant condition in the assistance agreement requiring the recipient to submit the Exchange Network Quality Assurance Reporting Form (QARF) to the EPA Regional Project Officer within 90 days of the award issuance date. The QARF is a tailored Quality Assurance Project Plan (QAPP) tailored specifically to satisfy the unique Quality Assurance needs of the Exchange Network Grant Program. The QARF must describe for each goal and task:

- the relevant task-specific Quality Assurance (QA) criteria.
- how the recipient will ensure adherence with the QA criteria.
- how the recipient will confirm and document that the project deliverables meet the QA criteria.

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/exchange-network-grant-program>.

## **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. All grantees, regardless of the funding vehicle, are expected to submit semi-annual progress reports in a timely fashion. 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. Additional Provisions for Applicants Incorporated into the Solicitation**

Additional provisions that apply to this solicitation and/or awards made under this solicitation, including but not limited to those related DUNS, SAM, copyrights, disputes, and administrative capability, can be found on the [EPA Solicitation Clauses](#) page. These, and the other provisions that can be found at the website link, are important, and applicants must review them when preparing proposals for this solicitation. If you are unable to access these provisions electronically at the website above, please communicate with the EPA contact listed in this solicitation to obtain the provisions.

**VII. Agency Contacts**

The primary EPA Headquarters point of contact is:

Edward Mixon  
Office of Information Management  
Office of Environmental Information  
Phone: (202) 566-2142  
Facsimile: (202) 566-1684  
Email: [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov)

|   |   |
|---|---|
| <p><b><u>Mailing Address:</u></b><br/>Edward Mixon<br/>U.S. Environmental Protection Agency<br/>1200 Pennsylvania Ave., NW (2824T)<br/>Washington, DC 20460</p> | <p><b><u>Physical Address</u></b> <i>(for overnight, or courier deliveries):</i><br/>Edward Mixon<br/>U.S. Environmental Protection Agency<br/>1301 Constitution Avenue, NW (Rm 6408U)<br/>Washington, DC 20004</p> |
|---|---|

# Appendix A

## Programmatic Data Exchange Opportunities

This appendix highlights individual data exchanges and related Exchange Network activities for which EPA is soliciting grant applications. Each section highlights EPA Program Office activities related to each exchange and provides suggested activities for applicants to consider when developing their application. Those activities must align with EPA’s priorities found in [Section I-E](#). Applicants can propose to implement 1 or more of these data exchanges.

The cost estimates that appear in the following appendix were made by the Subject Matter Experts who manage the featured data flow. Acknowledging that each state, tribe, and territory has different IT configurations and solutions for the programs they manage, it is permissible for application cost estimates associated with any individual suggested activity to exceed the estimates included in this appendix. If your estimate exceeds the estimate in this notice, you must provide an appropriate justification for the variation.

### Air

|  |     |
|--|-----|
| <a href="#">Air Quality System (AQS)</a> .....         | A-2 |
| <a href="#">Emission Inventory System (EIS)</a> .....  | A-3 |
| <a href="#">Radon</a> .....                            | A-4 |
| <a href="#">Combined Air Emissions Reporting</a> ..... | A-7 |

### Enforcement and Compliance

|  |      |
|--|------|
| <a href="#">ICIS (Integrated Compliance Information System) Shared Services</a> .....                      | A-10 |
| <a href="#">Electronic Reporting of National Pollutant Discharge Elimination System (NPDES) Data</a> ..... | A-13 |

### Waste

|  |      |
|--|------|
| <a href="#">Resource Conservation and Recovery Act Information System (RCRAInfo)</a> ..... | A-17 |
| <a href="#">Open Dump</a> .....  | A-18 |

### Water

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| <a href="#">eBeaches</a> .....   | A-20 |
| <a href="#">Safe Drinking Water Information System (SDWIS)</a> .....                 | A-21 |
| <a href="#">Water Quality Exchange (WQX)</a> .....                                   | A-23 |
| <a href="#">Assessment TMDL Tracking &amp; Implementation System (ATTAINS)</a> ..... | A-25 |

### Other Data Exchanges

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| <a href="#">Toxics Release Inventory System (TRIS)</a> ..... | A-28 |
| <a href="#">Facility Registry Services (FRS)</a> .....       | A-30 |

## Air Quality System (AQS)

### Description:

AQS is the official EPA repository of ambient air quality monitoring data, and related location and measurement metadata, collected by state, tribal, territorial, and local governments. It is used for regulatory purposes to determine compliance with the Clean Air Act, and for scientific and health effects research. Presently state, local, and tribal agencies are submitting data to AQS using version 3.0 of the AQS flow. This flow was updated in 2014 to add new quality assurance data elements to the schema.

### Status and Plans:

EPA anticipates that in FY2019 version 4.0 of the schema will be released. This version will (1) include additional elements related to quality assurance elements and (2) flatten the structure of the schema. This schema revision will contain only optional elements. That is, the schema will include optional elements that were recently added to the submission data structure. The major revision is because flattening the structure will not allow for backwards compatibility. It will not be required for submitters to use version 4.0 of the schema in FY 2019.

EPA does not anticipate any major changes to AQS affecting EN flow requirements or milestones in FY 2019.

### Cost Estimates:

| Activity                                     | Cost Estimate      |
|--|--------------------|
| Implement AQS data exchange                  | \$50,000-\$150,000 |
| Modify existing schema/migrate to new schema | \$20,000-\$60,000  |

## Emissions Inventory System (EIS)

**Description:**

The Emissions Inventory System (EIS) is the system for storing all current and historical emissions inventory data. EPA uses it to receive and store emissions data and generate annual and triennial National Emissions Inventory.

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.

**Status and Plans:**

The EIS went into production in 2009. Since its inception, E-Enterprise and The Combined Air Emissions Reporting (CAER) project were started. CAER seeks to streamline multiple point source air emissions reporting processes by creating a coordinated approach for regulated entities to provide the latest facility attributes and emissions data once, using technology and shared system applications to route the appropriate data to the relevant regulatory programs.

To share data more easily between state/local and tribal air agencies, and EPA programs, the CAER project has recommended additional data fields to be added to the EIS. These additional data fields mean a major update to the Combined Emissions Reporting schema used in submitting data to EIS. The addition of these data fields will be used by the CAER minimum viable product project; Federal Registry System (FRS); and Compliance and Emissions Data Reporting Interface (CEDRI).

**Activities Grant Applicants Should Consider:**

In addition to the submission of emissions data to the EIS, grant applicants should also consider activities reusing existing shared services such as:

- Support the transition from locally installed code tables to web services such as Source Classification Code, Substance Registry System, CEDRI, WebFIRE and the Emission Factor Compendium
- Support the transition from locally installed facility configurations to the Facility Registry Service.
- Support the transition from locally installed nodes to the EPA hosted Virtual Exchange Node.
- Develop shared services that facilitate online collection of emissions inventory data.

| Grant Activity   | Cost Estimate                                 |
|--|---|
| Support the transition from locally installed code tables to web services such as Source Classification Code, Substance Registry System, CEDRI, WebFIRE and the Emission Factor Compendium | \$50,000 - \$150,000                          |
| Support the transition from locally installed facility configurations to the Facility Registry Service.  | <a href="#">See FRS section in Appendix A</a> |
| Support the transition from locally installed nodes to the EPA hosted Virtual Exchange Node  | <a href="#">See VES in Appendix B</a>         |

|   |                      |
|---|----------------------|
| Develop shared services that facilitate online collection of emissions inventory data | \$50,000 - \$200,000 |
|---|----------------------|

**More Information:**

- [Environmental Information Exchange Network - Emissions Inventory System](#)

## Radon Data Exchange

### **Description:**

Radon remains a leading cause of lung cancer. EPA, states, tribes, and several national and regional consortia all collect radon data. These programs have differing data needs, reporting requirements, thresholds, calculation protocols and approaches to validation and verification of data.

Despite these differences, each of these data collections share the common purpose of improved tracking and understanding of radon exposure. Data are information and information is the programmatic foundation for effective radon risk reduction. The officials leading these programs need access to data that are reliable, consistent, flexible and comparable across programs. While a significant amount of radon data exists today, there are currently no systems that allow for the examination of data from multiple sources, or to draw larger conclusions about radon at a regional or national level. EN partners have an opportunity to use the Network to improve access to radon data and promote better management of exposure risks.

### **Status and Plans:**

For the past couple of years, the Centers for Disease Control and Prevention Environmental Public Health Tracking Network (CDC EPHTN), EPA and states have worked collaboratively and developed the capability for receiving standardized radon test and mitigation data from state and local health and environmental departments, made the data available on the [Tracking Network](#) for secure access by participating partners, documented lessons learned from the pilot programs, and ascertained the practicality of scaling up to a national level database. EPA and CDC are expanding this approach to 6-12 additional states and at least one private laboratory. A key goal of the project is to explore Nationally Consistent Data and Measures (NCDM) to ensure compatibility and comparability of data and measures useful for understanding the impact of our environment on our health.

The development of the Radon data elements and XML schema has evolved over time and partners. This work first started with the Radon State Data Exchange work group. The New Jersey Department of Environmental Protection developed an XML schema and a set of web services for publishing radon data, based on the work of the Radon State Data Exchange, for sharing of Radon data on the Exchange Network for the state's health department. CDC's Radon Task Force developed "[Radon Monitoring and Data Collection in the United States](#)" to investigate the merits (opportunity, cost and value) of developing public health indicators associated with residential exposure to naturally occurring radon gas. In early 2014, CDC created the Radon Workgroup to pilot test the feasibility for States to submit radon data into a national radon database and to standardize previously non-systemized data sources into a nationally consistent radon information resource. In 2015, CDC expanded the workgroup to include additional states and labs, re-examined data elements, created a national database of radon (in air) test data, refined the data dictionary and schema, and revised the data validation protocol. This EPHT schema is now the preferred schema to share nationally consistent data measures for Radon. This work is ongoing with the number of states participating increasing and getting ready for another data call in Fall 2017.

Grantees may also want to explore the use of Virtual Exchange Services (VES) as an option for exchanging data. The VES minimizes data exchange burden using standard templates, simple configuration, standardized data mapping, and powerful data import wizards. VES uses a centralized, scalable server that supports any file format including XML and JSON and automatically generates REST and SOAP services. VES requires a database person for staging table management. See [Appendix B](#) for more information on

VES.

EPA and CDC hope to subsequently scale the pilot to a national level database for public access. Both agencies will advance existing partnerships and promote new collaborations to obtain radon test/mitigation data, offer scientific expertise to determine NCDMs, and provide technical support to modify the infrastructure and functionality needed to host the database.

**Activities Grant Applicants Should Consider:**

- Participate in the CDC EPHTN Work Group to discuss radon data exchange needs and collaboratively coordinate on implementing standardized web services.
- Evaluate the EPHT Radon XML schema being used to share data with EPA and CDC.
- Map radon data:
  - to the EPHT Radon XML schema and build the capacity to generate and share those XML files via Network web services.
  - to standard staging tables instead of dealing with the complexities of data formatting, data flow logistics, notifications through Virtual Exchange Services.
- Implement Exchange Network web services that make radon test data available to other stakeholders and the public as appropriate.

**Cost Estimates:**

| Grant Activity   | Cost Estimate        |
|--|----------------------|
| Map radon data: <ul style="list-style-type: none"> <li>➤ to the Radon XML schema and build the capacity to generate and share those XML files via Network Web services.</li> <li>➤ to standard staging tables instead of dealing with the complexities of data formatting, dataflow logistics, notifications through Virtual Exchange Services.</li> </ul> | \$50,000 - \$200,000 |
| Implement Exchange Network Web services that make radon test data available to other stakeholders and the public as appropriate. Grantees may also want to explore the use of Virtual Exchange Services (VES) as an option for exchanging data.  | \$5,000 - \$10,000   |

**More Information:**

- CDC’s Radon Task Force developed “[Radon Monitoring and Data Collection in the United States](#)”
- Radon State Data Exchange (<http://www.radonleaders.org/exchange/about>)
- Radon Data in New Jersey (<https://www26.state.nj.us/doh-shad/indicator/view/Radon.Year.html>)
- Radon Data in Colorado (<https://www.colorado.gov/pacific/coepht/radon-0> )
- To participate in the CDC’s Radon Workgroup, please contact Michele Monti at [mmonti@cdc.gov](mailto:mmonti@cdc.gov)

## **E-Enterprise Combined Air Emissions Reporting (CAER)**

### **Description:**

The Combined Air Emissions Reporting (CAER) project, under E-Enterprise, seeks to streamline multiple point source air emissions reporting processes by creating a coordinated approach for regulated entities to provide the latest facility attributes and emissions data once, using technology and shared system applications to route the appropriate data to the relevant regulatory programs. Currently, air emissions information is collected by EPA and state/local or tribal air agencies (SLTs) through numerous separate regulations, in a variety of formats per different reporting schedules, and using multiple routes of data transfer. In the proposed future state, the CAER project is expected to reduce the cost to industry and government for providing and managing important environmental data and to improve decision-making capacity through more timely availability of data. This project addresses electronic reporting of both facility data (FRS) as well as emissions data (EIS, GHG, TRI, and CEDRI). Key to the CAER project is the utilization of a common form to provide a facility the means to submit information through a single point and have the information sent to the appropriate program or regulatory authority automatically.

### **Status and Plans:**

To date, a large amount of information about air emissions data requirements has been collected through CAER's Product Design Teams (PDTs). The CAER project team envisions a "Common Form" to be the venue via which data reporting can be streamlined. The Common Form is an electronic reporting system used by a facility to submit and update emissions information. It can retrieve previously submitted emissions and facility and sub-facility data, collect input data for emissions calculations, perform the necessary calculations, then send the data to each program as needed. The common form can be used both by facilities and SLTs, as some data must be reviewed by SLTs before it can be finalized. This form will be flexible enough to allow for multiple types of workflows, depending on whether each SLT already has a reporting system that it prefers to use.

The Common Form effort is being conducted in an agile way, where features of the form will be built out progressively and tested. A single state will be involved in piloting the MVP between 2018 and 2020, with more to join in after that. For this to work we will need state and tribal partners, and volunteer facilities, that can assist throughout the development and piloting of different iterations of the Common Form by providing input regarding their program requirements, facility data and other information.

### **Activities Grant Applicants Should Consider:**

The following are examples of activities that States and Tribes could undertake towards the further development of the Common Form. This list is not exhaustive of all potential activities that could be funded.

Map state/tribal data to federal data for different programs:

- Create crosswalks for codes if state/tribal codes are different than federal codes
- Map state/tribal emissions data requirements to federal requirements so the Common Form can satisfy both
- Research methodology differences in emissions estimations between state/tribal and federal data so the Common Form can be programmed to calculate both

Integrate data:

- Develop schemas and templates for bulk upload to the Common Form
- Integrate Facility and sub-facility data into FRS for Common Form retrieval
- Establish workflow between state/tribal, facility and FRS for the state/tribe

Pilot and test reporting:

- Build out a version of the Common Form for the state/tribe
- Adjust the Common Form to further specific state/tribal requirements
- Pilot and test data upload and submission for several facilities
- If some facilities have already piloted the Common Form, add facilities to testing in an agile fashion (for example, pilot the Common Form with some facilities that have less requirements, or less complex or detailed requirements, then build out the common form to add facilities with more requirements, more complex, and/or more detailed requirements)

A state/tribal authority may propose an alternative activity that falls within the scope of Common Form development.

The following cost estimate is illustrative. Funding needs and how they would be allocated by activity will be considered on a case by case basis, with a single State or tribal authority receiving a maximum of \$200,000. Joint projects conducted in partnership with another state or tribal authority will also be considered with potential for additional funding.

**Cost Estimates:**

| Grant Activity   | Cost     |
|--|----------|
| <b>Map state data to federal data for different programs:</b>  |          |
| Create crosswalks for codes if state codes are different than federal codes  | \$15,000 |
| Map state emissions data requirements to federal requirements so the CF can satisfy both   | \$15,000 |
| Research methodology differences in emissions estimations between SLT and federal data so the CF can be programmed to calculate both | \$15,000 |
| <b>Integrate data:</b>   |          |
| Develop schemas and templates for bulk upload to the CF  | \$15,000 |
| Integrate Facility and Sub-facility data into FRS for CF retrieval   | \$15,000 |
| Establish electronic workflow between SLT, facility and FRS for the state  | \$25,000 |
| <b>Pilot and test reporting:</b>   |          |
| Build out CF version for the type of SLT   | \$25,000 |
| Adjust CF to further specific state requirements   | \$25,000 |
| Pilot and test data upload and submission for several facilities   | \$25,000 |
| If some facilities have already piloted the Common Form, add facilities to testing in an agile fashion                               | \$25,000 |

**Shared Services/Reusable Components Available:**

The development of the MVP between 2018 and 2020, and beyond, will involve a simple workflow with one or two states and two systems. Each state can be considered as representative of other SLTs in some respects. Every SLT that contributes to further development of the CF, thereafter, is laying the foundation for other states to be able to adopt the CF. Criteria by which states can be representative of other SLTs include, but are not limited to: the availability or lack of a state-specific electronic reporting system, whether the SLT emissions inventory requires more or less pollutants than the federal programs (NEI, TRI, GHG, CEDRI), whether an SLT requires similar or different methods to calculate emissions as the federal programs do, whether and how a state wants CBI handled. As features are built into the CF, that include flexibility to cater to different SLT programmatic and workflow needs, the CF will become more and more usable for states with requirements similar to those who have already piloted the CF. Thus, building out the CF for additional states will become easier by leveraging the work of previous SLTs with the CF.

**More Information:**

- CAER website <https://www.epa.gov/e-enterprise/e-enterprise-combined-air-emissions-reporting-caer>

## ICIS (Integrated Compliance Information System) Shared Services (ICIS-NPDES, ICIS-AIR)

### Description:

ICIS supports Clean Water Act National Pollutant Discharge Elimination System (CWA NPDES) wastewater discharge program functions (e.g., permitting, compliance monitoring, enforcement, and special regulatory programs), as well as compliance and enforcement data about Clean Air Act (CAA) stationary sources. The ICIS data flow accepts XML formatted submissions of NPDES and CAA data from states, tribes, territories, and local environmental agencies via the Exchange Network.

### Status and Plans:

EPA released the ICIS data flows in four parts: batch discharge monitoring reports (DMR) (May 2008), DMRs (via CDX) from facilities that had electronically signed and submitted them using NetDMR (June 2009), NPDES electronic data transfer (EDT) (December 2012), and CAA stationary source EDT (October 2014). To expand upon electronic reporting capabilities, EPA is developing *service-based reporting* to access, update, replace and delete data via shared services. States/tribes/territories may want to develop user interfaces which take advantage of these services to support their own reporting. The data exchanged via shared services will support the flow of a common facility construct, permit data, and/or compliance and enforcement data related to the CWA NPDES and the CAA stationary source programs.

### Activities Grant Applicants Should Consider:

The applicant might explain key aspects of their business case, functional requirements, and long-term operational considerations necessary to integrate and use the shared services best suited for their organization. The applicant might also include plans for converting from using a traditional Exchange Network node to developing and using shared services.

ICIS grant applicants should consider, but not limit themselves to the following activities under this opportunity that identify integration development needed for shared services:

- Upgrade of a state, tribal, or territorial data system and/or data flow to meet the requirements of EPA's NPDES Electronic Reporting Rule. Activities might include support for states to modify their state NPDES systems to ensure that they can capture, store, and transmit to EPA any necessary data elements that are required or in support of the NPDES eReporting Rule as described in 40 CFR 127. Applicants could discuss the costs and milestones associated with upgrading their state system to ensure it can send the required data to ICIS-NPDES using shared services.
- Modify state, tribal, or territorial systems to provide or consume shared services.
- Develop and/or consume shared services for a **user registration process, credentials generation, authorization, login and user authentication** including signing signature agreements, identity proofing, retrieving security questions related to user authentication, validating passwords, checking User ID availability, and/or authenticating a user's credentials.
- Develop and/or consume shared services that enable **entering data and viewing human readable data, submitting forms for signature, signing forms, and validating signatures**, including: retrieving blank forms, checking form eligibility, filtering forms based on search criteria, creating new forms, deleting forms, saving forms, enabling attachments to a form, exchanging forms between users, and routing forms.
- Develop and/or consume shared services that **create, maintain, and archive** a copy of record,

- including viewing, repudiating and editing a copy of record.
- Develop and/or consume shared services that **retrieve reference values**, such as: states, counties, permit types, permit status, chemicals, pollutants, form status, form types, titles, and roles/user types.
  - Develop and/or consume shared services that **facilitate search functions** for data elements such as: zip code, state, county, chemicals, pollutants, receiving waters, air quality control district, enforcement action type, compliance monitoring type, violation, and activity dates.
  - Develop application program interfaces that **send, receive and process notifications and data** related to CWA NPDES or CAA-stationary source programs, such as: list of forms, documents, user registration information and functionality, confirmation codes from user registration, email availability, email notifications to regulated entities, and account confirmation emails.
  - Extract and convert the data from State NPDES and air systems into the XML format needed to submit data to ICIS electronically; modify state, tribal, or territorial systems to accommodate the data requirements for ICIS-NPDES and ICIS-Air; and install and configure ICIS-NPDES and ICIS-Air plug-ins available on the Exchange Network.
  - Develop shared services or automated processes that assist in transferring and maintaining accurate violation data in ICIS-Air - specifically projects that can develop connections between existing e-reporting tools, such as Compliance and Emissions Data Reporting Interface (CEDRI), and public interfaces such as Enforcement and Compliance History (ECHO).

*Note: Proposals for the ICIS-NPDES activities supporting the requirements of the NPDES eReporting Rule and proposals for ICIS-Air activities are eligible for funding provided that the proposal commits to putting the upgrades or new services into production.*

**Cost Estimates:**

| <b>Grant Activity</b>   | <b>Service</b>         | <b>Cost Estimate</b> |
|---|------------------------|----------------------|
| Upgrade a state data system and/or data flow to meet the requirements of EPA's NPDES Electronic Reporting Rule  | ICIS-NPDES             | \$35,000 - \$200,000 |
| Modify state, tribal, territorial systems to provide or consume shared services   | ICIS-NPDES or ICIS-Air | \$35,000 - \$200,000 |
| Develop application program interfaces that send, receive and process notifications and data related to NPDES or CAA-stationary source programs   | ICIS-NPDES or ICIS-Air | \$35,000 - \$200,000 |
| Extract and convert the data from State NPDES and air systems into the XML format needed to submit data to ICIS electronically; modify state/tribal/territorial systems to accommodate the data requirements for ICIS-NPDES and ICIS-Air and related e-reported compliance data; and install and configure ICIS-NPDES and ICIS-Air plug-ins available on the Exchange Network | ICIS-NPDES or ICIS-Air | \$35,000 - \$200,000 |

## Shared Services/Reusable Components Available:

Identified below is a list of shared services or reusable components available to applicants as they implement the opportunities:

- Shared CROMERR Services, including for two-factor authentication, signature service, identity proofing. See Appendix B – Shared CROMERR Services.
- Copy of Record (COR) captured in CDX CROMERR Repository - The Copy of Record (COR) category of services addresses all activities and functions for storing, maintaining, and retrieving the COR and associated notifications.
- Common reference tables and codes
- Shared facility data
- Impaired Waters and TMDLs (ATTAINS) – Exchange Network Service
- Pollutant/Parameter Lists
- NPDES ID Lookup/creation services
- ICIS Data Access dataflow - provides the ability for any participating Exchange Network partner or node (e.g., a state agency node, EPA Regional node, etc.) to request and receive ICIS data in XML format. The Integrated Compliance Information System (ICIS) currently holds data from various EPA programs such as NPDES (National Pollutant Discharge Elimination System), FE&C (Federal Enforcement and Compliance), and RCRA (Resource Conservation and Recovery Act). Other programs will be incorporated into ICIS in the future.

## More Information:

- Integrated Compliance Information System (ICIS) Support Portal <https://icis.zendesk.com/hc/en-us>
- NPDES eReporting Tool Help Center <https://epanet.zendesk.com/hc/en-us>
- CWA-NPDES Electronic Reporting website <https://www.epa.gov/compliance/npdes-ereporting>
- More information on ICISDA can be found at the ICIS Customer Support Portal: <https://icis.zendesk.com/hc/en-us/articles/207374636-Download-XMLs-From-ICISDA-Dataflow-to-Correct-ICIS-Data->

## Electronic Reporting of National Pollutant Discharge Elimination System (NPDES) Data

### Description:

Electronic reporting of Clean Water Act National Pollutant Discharge Elimination System NPDES general permit forms, program reports, and Discharge Monitoring Reports (DMRs) lowers burden for permittees and regulators; improves data quality, availability, and timeliness; and ultimately improves compliance. In support of these goals, EPA promulgated the NPDES Electronic Reporting Rule (“NPDES eRule”) in September 2015, which requires permittees to electronically report DMRs and Part 503 biosolids/sewage sludge annual program reports where EPA implements the Part 503 program beginning in December 2016, and all other general permit forms and program reports beginning in December 2020.

### Status and Plans:

To support implementation of the NPDES eRule, EPA currently has two tools to accomplish these goals: NetDMR for DMRs and NeT for general permits and program reports. In recognition of the resources required to implement electronic reporting for the NPDES program and EPA’s desire to bolster our partnerships, a few approaches are being considered for states to leverage EPA’s development, including:

- State utilizes services available from EPA
- State hosts the national solution modified to their need

To date, EPA has developed and hosts national solutions for reporting Discharge Monitoring Reports, certain federal NPDES general permit forms, and the Part 503 (Biosolids) annual program report. The EPA’s NetDMR system supports DMR reporting by permittees within 24 states and territories, and all 10 EPA Regions. The Agency can readily deploy additional instances or program services to support other states, territories or tribes. In addition to the Biosolids annual program report, a fully service-based solution of the NPDES eReporting tool (NeT) supports electronic reporting by permittees for the federal Construction General Permit, Multi-Sector General Permit, and EPA Regions 4 and 6’s Outer Continental Shelf general permit.

States that have unique business requirements may prefer to develop and deploy their own electronic DMR (eDMR) system within their state computing environment. These states will use their own eDMR systems to ensure timely and accurate reporting of DMRs by permittees to the regulatory authority, then send this data to EPA’s ICIS-NPDES system, using CDX and the Exchange Network. For a write up on the ICIS-NPDES dataflow, please see Appendix A for the ICIS Shared Services. In these instances, states will highlight development that results in the integration of state and EPA shared services.

In addition to the above mentioned general permit forms and annual program report, EPA is developing a national solution to be hosted by EPA for additional NPDES general permits and reports including, but not limited, to: concentrated animal feeding operations (CAFOs), combined sewer overflow (CSO) events, annual pretreatment, separate sewer overflow (SSO) events, industrial user compliance, other general permits, and municipal separate storm sewer system (MS4) notices of intent (NOI) and annual reporting information. New web services for these areas will be developed and shared with states, tribes, and territories. In addition, states, tribes and territories may develop shared services that can be used or invoked by EPA applications, but should always consider leveraging existing services.

States may want to develop user interfaces which take advantage of these services and deploy them within

their own electronic tools for reporting NPDES permit forms (e.g., Notices of Intent) and program reports. EPA will share its Java-based solution with states who want to use it as a model, or states may choose to develop their own versions.

**Activities Grant Applicants Should Consider:**

➤ **Development, Testing and Implementation of eDMR System within a State/Tribal/Territorial Environment:**

Some states have specific business reasons why EPA's NetDMR cannot meet their programmatic requirements and, therefore, need a state-specific eDMR system. For states with these requirements, this area can provide support for technical activities that lead to successful implementation of an eDMR system within the state computing environment that is fully CROMERR compliant. In these cases, applicants might explain why it is advantageous to develop and deploy their custom system (which requires state operation and maintenance). Applicants should discuss costs and milestones associated with developing, testing and deploying the application to ensure it works properly and sends required data to ICIS-NPDES using the approved schema and methodology. Applicants could also provide a plan for providing outreach, training and support to members of their regulated community that will use their eDMR system and discuss their adoption rate goals and milestones.

➤ **Development, Testing, and Implementation of a system for reporting electronic NPDES permit forms (e.g., Notices of Intent (NOI)) for individual or general permit coverage or program reports:**

Since the EPA enterprise system uses a service-first model, state partners can use (or consume/invoke/leverage) certain services from the EPA enterprise solution. In this solution, a state may develop and hosts their own solution that uses EPA enterprise system services to:

- 1) Capture User Profiles in the state approved environment
- 2) Support User Authentication
- 3) Support User Authorization
- 4) Collect data to support state requirements
- 5) Leverage a state approved CROMERR solution (identity proofing; authentication; activity, CoR, etc.)

Alternatively, the state may obtain the EPA enterprise solution source code developed by EPA, to host in their state environment as a state solution. The state will need to make necessary updates to the source code, so that the application complies with CROMERR requirements. It is EPA's expectation that the state will be solely responsible for maintaining and updating the source code. This would result in the following:

- 1) User Profiles captured in state approved environment
- 2) Authentication supported by state approved solution
- 3) Authorization supported by state approved solution
- 4) Data collection to support state centric requirements
- 5) State approved CROMERR solution (identity proofing; authentication; activity, CoR, etc.)

In this approach, the source code is provided in an open source model; where the state can modify

the code base as they deem necessary. The applicant must demonstrate in their application, access to or have a plan to onboard technical staff with expertise in open source development and integration.

States might also consider a combination of options to implement the NPDES eRule. Applicants should discuss costs and milestones associated with deploying and testing their solution and application(s) to ensure they works properly and send required data to ICIS-NPDES using the approved XML schema and methodology. Applicants should also provide a plan for outreach, training and support to members of their regulated community, and discuss their adoption rate goals and milestones. Applicants should highlight shared services that they will develop or consume, and how they will benefit their NPDES electronic reporting program.

➤ **Development, Testing, and Implementation of new Shared Services:**

If a necessary shared service is not available, states, tribes, and territories may propose to develop, test, and implement new service(s) that they will need to enable electronic reporting, such as a service for the collection of application fees. Applicants should specify the set of additional services needed, the permits and use cases and numbers of permittees to which they apply, and the methods they will use to enable other EN stakeholders to discover the new shared services.

These activities are eligible for funding provided that the project proposal commits to deploying the new system, upgrade(s), or shared service(s) into production.

**Cost Estimates:**

| Function  | Service    | Cost Estimate        |
|---|------------|----------------------|
| Development, Testing and Implementation of eDMR System within a State Environment   | ICIS-NPDES | \$35,000 - \$200,000 |
| Development, Testing, and Implementation of a system for reporting electronic NPDES permit forms (e.g., Notices of Intent (NOI)) for individual or general permit coverage or program reports | ICIS-NPDES | \$35,000 - \$200,000 |
| Development, Testing, and Implementation of new Shared Services   | ICIS-NPDES | \$35,000 - \$200,000 |

**Shared Services/Reusable Components Available:**

Please see Appendix A ICIS Shared Services and Appendix B for Shared CROMERR Services for services for a list of shared services or reusable components available to applicants, including, but not limited to:

- Shared CROMERR Services, including for two-factor authentication, signature service, identity proofing. See Appendix B – Shared CROMERR Services.
- Copy of Record (COR) captured in CDX CROMERR
- Common reference tables and codes
- Shared facility data
- Impaired Waters and TMDLs (ATTAINS) – Exchange Network Service
- Pollutant/Parameter Lists

- NPDES ID Lookup / creation service
- ICIS Data Access dataflow - provides the ability for any participating Exchange Network partner or node (e.g., a state agency node, EPA Regional node, etc.) to request and receive ICIS data in XML format. The Integrated Compliance Information System (ICIS) currently holds data from various EPA programs such as NPDES (National Pollutant Discharge Elimination System), FE&C (Federal Enforcement and Compliance), and RCRA (Resource Conservation and Recovery Act). Other programs will be incorporated into ICIS in the future

**More Information:**

- Integrated Compliance Information System (ICIS) Support Portal <https://icis.zendesk.com/hc/en-us>
- NPDES eReporting Tool Help Center <https://epanet.zendesk.com/hc/en-us>
- CWA-NPDES Electronic Reporting website <https://www.epa.gov/compliance/npdes-ereporting>
- More information on ICISDA can be found at the ICIS Customer Support Portal: <https://icis.zendesk.com/hc/en-us/articles/207374636-Download-XMLs-From-ICISDA-Dataflow-to-Correct-ICIS-Data-> .

**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.

A national system for tracking hazardous waste shipments electronically, known as “e-Manifest,” is the latest app in RCRAInfo. EPA established the e-Manifest system according to the [Hazardous Waste Electronic Manifest Establishment Act](#), enacted into law on October 5, 2012. For states to access eManifest data under Exchange Network framework, eManifest Outbound Service is under development.

**Status and Plans:**

| <b>Exchange Network Program Office Activities</b>       |                               |
|---|-------------------------------|
| <b>Milestone</b>  | <b>Target Completion Date</b> |
| ReportUniv Data Outbound Services (v 5.6)               | Completed                     |
| eManifest Outbound Service (v 5.7)                      | September 2018                |
| RCRAInfo upgrade/enhancements including schema revision | As requested                  |

**Activities Grant Applicants Should Consider:**

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. 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.

**Cost Estimates:**

| <b>Activity</b>   | <b>Cost Estimate</b> |
|---|----------------------|
| Use RCRAInfo eManifest outbound service to integrate data to States                     | \$50,000-\$100,000   |
| Migrate to either RCRAInfo inbound or outbound services to eliminate double data entry. | \$80,000-150,000     |

**More Information:**

- E-Enterprise – E-Manifest for Hazardous Waste (<https://e-enterprisefortheenvironment.net/our-projects/e-manifest-for-hazardous-waste/>)
- E-Manifest State Programs Fact Sheet ([https://www.epa.gov/sites/production/files/2018-06/documents/emanifest\\_state\\_programs\\_fact\\_sheet\\_0.pdf](https://www.epa.gov/sites/production/files/2018-06/documents/emanifest_state_programs_fact_sheet_0.pdf))

## Open Dump Data Exchange

### **Description:**

The open dump problem facing tribes is immense and needs to be characterized. The EPA's Office of Resource Conservation and Recovery (ORCR) and the Department of Health and Human Services - Indian Health Service (IHS) need updated and timely information on open dumps on Indian Country. The Exchange Network is in a unique position to assist and promote the timely, accurate sharing of key information on open dumps to a vast set of partners.

### **Status and Plans:**

Tribes are encouraged to develop the data requirements that will meet ORCR and IHS data needs, develop the appropriate schema and flow configuration to meet these data needs, and put the Open Dump data exchange into production. Key steps in implementing an Open Dump flow are:

- Test existing schema found at <http://www.exchangenetwork.net/data-exchange/open-dump-data-exchange/>.
- Develop web services.
- Complete end to end testing by tribes with CDX.
- Flow configuration document completed.
- Convene an IPT on the data flow.
- Mentor other tribes on the data flow.

### **Activities Grant Applicants Should Consider:**

- Determining the need to develop specific data standards for Open Dumps.
- Establishing if developing or enhancing the Fac ID 3.0 schema might fit the data exchange needs of this data flow. However, a new schema might be necessary for the data flow.
- Participating in Integrated Project Teams to assist in building out the schema for Open Dumps.
- Defining, vetting and building a comprehensive standard set of web services for Open Dump data flow to advance the Network and serve as a model for other data service publishing.
- Documenting the data flow.

This activity is eligible for funding provided that the project plan commits to putting the Open Dump data exchange into production. The applicant must coordinate with the Exchange Network Interoperability and Operations Team to ensure technical and data standards review and approval for changes to data standards and schema. Work associated with the schema review and approval process is fundable under this grant program

**Cost Estimates:**

| <b>Activity</b>  | <b>Cost Estimate</b> |
|--|----------------------|
| Determining the need to develop specific data standards for Open Dumps.  | \$5,000-\$20,000     |
| Establishing if developing or enhancing the Fac ID 3.0 schema might fit the data exchange needs of this data flow. However, a new schema might be necessary for the data flow.     | \$5,000-\$30,000     |
| Participating in Integrated Project Teams to assist in building out the schema for Open Dumps.   | \$10,000-\$30,000    |
| Defining, vetting and building a comprehensive standard set of web services for Open Dump data flow to advance the Network and serve as a model for other data service publishing. | \$35,000-\$80,000    |

**Shared Services/Reusable Components Available:**

Open Dump Data Exchange XML schema

**More Information:**

- Exchange Network – Open Dump Data Exchange (<http://www.exchangenetwork.net/data-exchange/open-dump-data-exchange>)

## eBeaches

### Description:

eBeaches is the electronic data transmission system that allows EPA to receive and display state beach water quality and swimming advisory data securely two hours after 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.

### Activities Grant Applicants Should Consider:

Applicants should consider the following steps prior to data submissions.

- Read all support documentation at <https://www.epa.gov/beach-tech/submitting-data-epa>. ***(This activity is not eligible for funding)***
- Consider publishing Beach closure data in real time, even though the EPA currently updates data on a two-hour cycle.
- Map systems to the approved national XML schemas.  
<http://www.exchangenetwork.net/communities-of-interest/water/>
- Implement NHDEvent data flow for BEACON beach locations to be geo-referenced to the NHD. Link beach locations consistent with the NHD and the Geospatial One Stop Hydrography Standard.
- Verify in WQX/STORET 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 offices for existing Node capability and Virtual Exchange Services access before developing Node capability for each beach data flow. ***(This activity is not eligible for funding)***
- Validate XML instance documents prior to submission via CDX (node or ENSC).
- Participate in biweekly/monthly Beach conference calls. ***(this activity is not eligible for funding)***

*Note: This activity is eligible for funding provided that the project proposal commits to deploying the eBeaches data flow into production.*

### Cost Estimates:

| Activity  | Cost Estimate     |
|---|-------------------|
| Implement eBeaches data exchange  | \$40,000-\$80,000 |
| Publish Beach closure data in real time, even though the EPA currently updates data on a two-hour cycle.  | \$10,000-\$20,000 |
| Map systems to the approved national XML schemas.<br><a href="http://www.exchangenetwork.net/communities-of-interest/water/">http://www.exchangenetwork.net/communities-of-interest/water/</a>  | \$10,000-\$30,000 |
| Implement NHDEvent data flow for BEACON beach locations to be geo-referenced to the NHD. Link beach locations consistent with the NHD and the Geospatial One Stop Hydrography Standard.   | \$10,000-\$20,000 |
| Verify in WQX/STORET 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. | \$20,000-\$40,000 |

## Safe Drinking Water Information System (SDWIS)

### Description:

SDWIS State is an EPA-provided system designed to assist primacy agencies in managing their Public Water System Supervision (PWSS) programs under the Safe Drinking Water Act (SDWA). Currently, primacy agencies use XML files (SDWA Schema v3.6) to submit drinking water data to EPA for quarterly reporting. SDWIS Prime, a new system replacing SDWIS State, includes a centralized, CROMERR-compliant collection site (the Compliance Monitoring Data Portal, or CMDP) for electronic reporting of laboratory samples data, as well as a centralized approach for compliance determinations through an EPA and state defined drinking water rules engine. SDWIS Prime is envisioned to include a common user interface as well as a suite of web services or APIs for interacting with SDWIS Prime.

### Status and Plans:

EPA completed development of CMDP and began deployment in October 2016. SDWIS Prime is currently in development and the drinking water community has been actively involved in testing. EPA began early pilot activities for SDWIS Prime in October 2018 and continues ongoing development of SDWIS Prime core functionality with pilot states. Part of the early pilot activities include development of adoption criteria for SDWIS Prime by EPA and pilot states. SDWIS Prime early adoption will begin when required adoption criteria are met.

The SDWIS Prime project team has identified several candidate web services (REST APIs). EPA also intends to make the initial source code for SDWIS Prime's user interface available when we begin pilot state transition activities.

EPA is currently piloting the use of the Exchange Network Virtual Exchange Services (VES) to provide optional capabilities for each state to replicate a copy of their data in SDWIS Prime into a state-hosted set of data tables in the SDWIS State v3.33 structure. This allows the state's applications to access SDWIS data from these state hosted data tables while the state's longer-term efforts proceed in reconfiguring its applications to access SDWIS Prime data via web services.

### Activities Grant Applicants Should Consider:

- Participating in monthly SDWIS Prime/CMPD update calls (For additional information send an email to [sdwisprime@epa.gov](mailto:sdwisprime@epa.gov), if not already on the contact list.) (***this activity is not available for funding***)
- Adopting and deploying SDWIS Prime and CMDP – including but not limited to developing a transition plan, data cleanup, data migration and training to move a drinking water primacy agency from their legacy systems to SDWIS Prime and CMDP. Eligible activities also include but are not limited to training of agency, public water system and laboratory personnel in system usage and system testing. Please note that states should not adopt CMDP independent of SDWIS Prime because it would result in significant extra work.
- For non-pilot states, CY 2020 activities should be limited to data clean up and CMDP training (training of agency, public water system and laboratory personnel in system usage and system testing).

- Repurposing the legacy SDWIS State database as a local data store serving as an intermediary between SDWIS Prime and the primacy agency’s interfacing applications, including a mechanism for synchronizing data with SDWIS Prime, leveraging Virtual Exchange Services for this data exchange. EPA readiness to support this activity is dependent on completion of current VES pilot activities from previous EN grant projects.

**Cost Estimates:**

| Activity   | Cost Estimate        |
|--|----------------------|
|  |                      |
| Developing primacy agency specific transition plan for CMDP (in conjunction with or following transition to SDWIS Prime)   | \$5,000 - \$15,000   |
| Developing primacy agency specific user training for CMDP  | \$5,000 - \$10,000   |
| Developing primacy agency specific transition plan for SDWIS Prime and CMDP  | \$5,000 - \$15,000   |
| Developing primacy agency specific user training for SDWIS Prime and CMDP.   | \$5,000 - \$10,000   |
| Repurpose legacy SDWIS State database as a local data store as an intermediary between SDWIS Prime and primacy agency interfacing applications and configure Virtual Exchange Services for data replication ( <b>for primacy agencies currently using SDWIS State</b> )          | \$30,000 - \$50,000  |
| Repurpose legacy SDWIS State database as a local data store as an intermediary between SDWIS Prime and primacy agency interfacing applications and configure Virtual Exchange Services for data replication) <b>for primacy agencies using a system other than SDWIS State</b> ) | \$50,000 - \$80,000  |
| Mapping non-SDWIS State compliance system to SDWIS State v3.3 structure  | \$75,000 - \$100,000 |

**Shared Services/Reusable Components Available:**

- CMDP ReST APIs: For additional information, send an email to [sdwisprime@epa.gov](mailto:sdwisprime@epa.gov).
- VES set up to allow states to configure and use VES for replicating their data in SDWIS Prime to a state hosted set of data tables in the SDWIS State v3.33 structure – Dependent on completion of current VES pilot activities from previous EN grant projects.

## Water Quality eXchange (WQX)

### Description:

The Water Quality eXchange (WQX) defines the framework by which EPA accepts and compiles water quality monitoring data (physical, chemical, biological, habitat, metrics, and index). Network Partners collect water quality monitoring data and submit it to EPA utilizing the WQX format and a node or node client. (<http://www.exchangenetwork.net/exchanges/water/wqx.htm>)

All partner data submitted to EPA is made publicly available and can be queried using the [Water Quality Portal](#) (WQP), a cooperative service by EPA and USGS under the National Water Quality Monitoring Council. The Water Quality Portal provides standard REST services, allowing interoperable access to water quality monitoring data. These services provide data to the user in tab, comma separated, Excel, and WQX formats. More information on the WQP and WQX can be found at: <https://www.epa.gov/waterdata/storage-and-retrieval-and-water-quality-exchange>.

### Status and Plans:

The WQX team is currently evaluating a series of recommended changes to the WQX schema to promote data consistency and quality. Once these changes are compiled, EPA will implement the WQX 3.0 schema. With version updates, EPA makes every effort to ensure backward compatibility with prior versions of WQX.

EPA continues to explore approaches for sharing continuous monitoring data. Demonstration projects and internal agency reviews of data sharing standards are underway. For more information on this effort, see section [I-E](#) of this document.

| Exchange Network Program Office Activities  |                        |
|---|------------------------|
| Milestone   | Target Completion Date |
| Develop habitat, metrics and index web services for use in the Water Quality Portal   | Complete               |
| System readiness to receive test and production data to EPA WQX v3.0. The new v3.0 will include minor field updates. (note WQX v1.0, 2.0, and 2.1 will still be accepted) | December 2019          |

### Activities Grant Applicants Should Consider:

- Develop applications that use Water Quality Portal web services (attribute and spatial) for data integration and analysis. This could include collaborating with EPA on the development of open-source tools for discovering data and performing water quality analyses (e.g., establish links to water impairment, water permit facilities, watershed resource planning).
- Partner with eligible entities that collect monitoring data (e.g., local governments, watershed groups) to assist them in putting the WQX data flow into production.
- Utilize recently developed inbound RESTful web services for WQX to publish data collected using a mobile application.
- Development of shared services such as QA/QC checks & reports and assessment services.
- Map state/tribal/territorial data system to WQX Schema.

- Upgrading to WQX 3.0 Schema from WQX 1.0 or WQX 2.0

**Cost Estimates:**

| Activity   | Cost Estimate     |
|--|-------------------|
| Mapping state/tribal/territorial data system to WQX Schema and/or collaborate with eligible entities that collect monitoring data    | \$40,000-\$80,000 |
| Integrating data from Water Quality Portal using outbound REST Services (attribute and/or spatial) for data integration and analysis | \$20,000-\$60,000 |
| Upgrading to WQX 3.0 Schema from WQX 1.0 or WQX 2.0  | \$40,000-\$80,000 |
| Utilize recently developed inbound RESTful web services for WQX to publish data collected using a mobile application.                | \$40,000-\$80,000 |
| Development of shared services such as QA/QC checks & reports and assessment services.   | \$40,000-\$80,000 |

**More Information:**

- WQX schema and documentation: <http://www.exchangenetwork.net/data-exchange/wqx/> (WQX 3.0 currently on track for December 2019 release)
- About WQX and more information: <https://www.epa.gov/waterdata/water-quality-data-wqx>
- Water Quality Portal Web Services Guide: [https://www.waterqualitydata.us/webservices\\_documentation/](https://www.waterqualitydata.us/webservices_documentation/)
- WQX Web RESTful web services: <https://www.epa.gov/waterdata/wqx-web-application-programming-interface>

## **Assessment TMDL Tracking and Implementation System (ATTAINS) (Integrated Reporting (303(d)/305(b)))**

### **Description:**

Clean Water Act (CWA) Sections 303(d) and 305(b) requires states to submit to EPA by April 1 of all even numbered years:

- Section 303(d) – a list of impaired and threatened waters still requiring TMDLs; identification of the impairing pollutant(s); and priority ranking of these waters, including waters targeted for TMDL development within the next two years.
- Section 305(b) – a description of the water quality of all waters of the state (including, rivers/stream, lakes, estuaries/oceans and wetlands). States may also include in their section 305(b) submittal a description of the nature and extent of ground water pollution and recommendations of state plans or programs needed to maintain or improve ground water quality.

EPA and the states invest significant resources to meet these requirements using a combination of paper and electronic submissions. In the most recent Information Collection Request for the CWA Sections 303(d) and 305(b) programs, EPA estimated that the state burden alone is \$193 million annually.

### **Status and Plans:**

The Assessment TMDL Tracking and Implementation System (ATTAINS) allows EPA to streamline and improve the process for preparing the biennial CWA Section 305(b) Report to Congress by providing electronic access to the national and state summaries and the detailed waterbody-specific assessment status reported by states. Under EPA's Water Quality Framework<sup>3</sup>, one activity being pursued is a redesign of ATTAINS. Under this redesign effort, EPA is replacing the distributed Assessment Database (ADB) and the OWIR-ATT flow.

The new ATTAINS data flow allows states/tribes/territories to:

- Report water quality assessment information (including use support, causes, and probable sources)
- Provide and receive TMDL information
- Provide references to water quality monitoring location data relevant to the water quality Assessments (submitted via the Water Quality Exchange [WQX])
- Identify activities that states/tribes/territories are performing that lead to water quality restoration

The data available in ATTAINS reside in a web-based application that states, territories, tribes<sup>4</sup>, and EPA can use to track water quality assessment decisions, TMDLs, priority areas, and report on performance

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<sup>3</sup> **The Water Quality Framework (Framework)** is a new way of thinking about how EPA's water quality data and information systems can be better integrated to more effectively support water quality managers and meet program goals. The Framework will streamline water quality assessment and reporting currently performed under ATTAINS, eliminate paper reporting and provide a more complete picture of the nation's water quality. The Framework will start by focusing on better integrating three systems: 1) EPA's water quality monitoring repository (STORET and the Water Quality Exchange [WQX]), 2) EPA's Assessment TMDL Tracking and Implementation System (ATTAINS), and 3) EPA's surface water mapping tool (the National Hydrography Dataset Plus [NHDPlus]). Following the integration of these systems, further integration is possible with other water programs such as: water quality permits, enforcement and compliance, source water protection, and nonpoint source projects.

<sup>4</sup> Tribes can provide water quality assessments as part of their 305(b) reports. Tribes can use this new ATTAINS system for tracking and reporting this information.

measures. A goal of this redesign is to transition Integrated Reporting (IR) to a paperless process as envisioned by EPA’s E-Enterprise initiative. This redesign also includes the capability to publish IR data via web services that support the integrated vision of the Water Quality Framework.

EPA began the transition to the new ATTAINS system during the summer of 2017. The Agency worked with states to define the requirements for this new system and developed a data model and schema for states to begin using. The ATTAINS v1.0 schema and Flow Configuration Document are available for use now. The redesign of the ATTAINS system is being developed using Agile methodologies, with periodic releases of additional functionality. Based on the current development status, no schema changes are expected for 2020, but potential changes may be captured for implementation beyond 2020.

States, tribes, and territories were expected to transition to the new ATTAINS by the 2018 Integrated Reporting Cycle; however, EPA recognizes that states, tribes, and territories are in various stages of this transition or are building new functionality to better integrate data within their state, thereby improving their ATTAINS data flow. To make this transition to the new ATTAINS, states, tribes, and territories can use either the new Exchange Network ATTAINS data flow or the new web-based ATTAINS data system (or some combination of the two). As states make this transition, they may begin as a web-based ATTAINS user in 2020 and transition to an Exchange Network flow for future cycles as they build out capability and are seeking to gain efficiencies. EPA will no longer support, nor award grants for the OWIR-ATT data flow.

Because of the changes resulting from the ATTAINS redesign, for the purposes of the Exchange Network Grant program, the ATTAINS data flow is considered a new flow. As states/tribes/territories implement the ATTAINS flow, they should consider reusing existing components where appropriate (i.e., ATTAINS node plug-ins or Virtual Exchange services).

| <b>Exchange Network Program Office Activities</b>  |                               |
|--|-------------------------------|
| <b>Milestone</b>   | <b>Target Completion Date</b> |
| Final ATTAINS v1.0 schema and Flow Configuration Document and system ready for testing, including outbound Exchange Network Services   | Summer 2017                   |
| States, tribes, and territories may begin submitting data to ATTAINS for the 2018 Integrated Reporting Cycle   | Spring 2018                   |
| ATTAINS system components continue to be built to provide additional functionality   | Fall and Winter 2018          |
| EPA has completed an initial suite of syncing services. EPA will continue to build common RESTful services in support of How’s My Waterway Version 2.0, and these services will also be available to states and tribes | Ongoing                       |

**Additional Activities Grant Applicants Should Consider:**

- Identify, develop, and implement innovative tools that may enhance the interaction between EPA Regions and states during the 303(d)/IR review and approval process (e.g., web-based services and

applications).

- Identify, develop, and implement innovative, reusable water quality assessment services and screening tools (e.g., web-based services and applications that compare monitoring data with standards or thresholds to automate an initial water quality assessment recommendation--that initial recommendation could then be reviewed and edited by the state, territory, or tribal organization before final decisions are made).
- Identify, develop, and implement innovative services that integrate monitoring and nonpoint source data with water quality assessments (e.g., web-based services that access monitoring data or nonpoint source data from another system and relate them to water quality assessments in a useful way).
- The ATTAINS web-based application uses the E-Enterprise Portal as the single-sign-on tool. States, tribes, and territories may consider innovative approaches for integrating with the E-Enterprise Portal for authorization into the ATTAINS system (see section I-E of this document).

*Note: All activities are eligible for funding provided that the project proposal commits to deploying the ATTAINS data flow into production.*

**Cost Estimates:**

| Activity   | Cost Estimate      |
|--|--------------------|
| Implement ATTAINS data flow for Assessment Units, Assessments, or Actions  | \$40,000-\$100,000 |
| Build capability to retrieve data from ATTAINS outbound services   | \$40,000-\$60,000  |
| Develop capability for integrating WQX and ATTAINS workflows and making use of monitoring data for automated water quality analyses                | \$40,000-\$80,000  |
| Develop tools to facilitate EPA review of Integrated Reporting Data and transitioning to a fully electronic process                                | \$20,000-\$40,000  |
| Build capability to consume outbound RESTful services from ATTAINS to incorporate data into state, tribal, or territorial websites or applications | \$40,000-\$80,000  |

**Shared Services/Reusable Components Available:**

- ATTAINS uses Authentication Services to authenticate user’s credentials via the Central Data Exchange (CDX).
- ATTAINS publishes data using services. The ATTAINS Flow Configuration Document (FCD) contains information about ATTAINS REST-based query services. More services are being developed that will provide additional functionality.
- In addition, reusable components that have been registered are searchable from EPA’s System of Registries Reusable Component Services (RCS) search:  
[https://iaspub.epa.gov/sor\\_internet/registry2/reusereg/searchandretrieve/](https://iaspub.epa.gov/sor_internet/registry2/reusereg/searchandretrieve/)

**More Information:**

- Information about ATTAINS can be found on the ATTAINS website.  
<https://www.epa.gov/waterdata/attains>

## Toxics Release Inventory Data Exchange

### Description:

TRI tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. U.S. facilities in different industry sectors must report annually how much of each chemical is released to the environment and/or managed through recycling, energy recovery and treatment. The TRI Data Exchange (TDX) enables these industries to submit simultaneously TRI reports to both EPA and States/Tribes via CDX network. Benefits of the TRI Data Exchange include:

- Elimination of duplicative data entry
- Reducing burden for reporting facilities.
- Reduction of State/Tribe data reconciliation.
- Faster access to the data.

### Status and Plans:

| Exchange Network Program Office Activities   |                        |
|--|------------------------|
| Milestones   | Target Completion Date |
| Load/Update XML Schema (if necessary) for FY 2018  | As needed              |
| 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/Tribes       | Ongoing                |

### Activities Grant Applicants Should Consider:

- Work with the TRI Program to test XML schema on the state node to accept TRI data from EPA.
- States/Tribes 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/Tribal program office employees at TDX states to take advantage of the benefits offered by the TDX Viewer tool. [More information about the TDX Viewer](#)
- 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/Tribes already on the TRI Data Exchange. A map displaying current TDX participants can be accessed at <http://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange>.
- Collaborate with states/tribes on the TRI Data Exchange and other states interested in joining (i.e., participate in quarterly TDX conference calls, develop sharable code).

*Note: These activities are eligible for funding provided that the project proposal commits to deploying the outbound data flow into production.*

**Cost Estimates:**

| <b>Grant Activity</b>   | <b>Cost Estimate</b> |
|---|----------------------|
| States/Tribes should develop procedures and support that enable the import of TRI data into their systems. The procedures should support and align with the TRI XML format received via their State/Tribal node. This would also include updating the XML to include new data elements and structure when applicable. | \$50,000 - \$150,000 |
| Use the TRI XML schema to develop load/parse/converter tools to populate the State/Tribal database directly from EPA incoming data sources via CDX.   | \$40,000 - \$60,000  |

## Facility Registry Service

### Description:

The Facility Registry Service (FRS) is EPA's centrally managed database that integrates facility data across over 90 EPA and other federal systems, as well as numerous state, tribal and local agency databases. FRS provides access to the names, locations, associated program IDs, industrial classification, corporate and contact affiliation, and other information for facilities subject to environmental regulations and for other sites of environmental interest.

These integrated facility identification records allow EPA, its state, territorial and tribal and local partners, web application owners, and the public to access integrated environmental information reported from and about facilities and sites. Using APIs and web services, co-regulators can integrate their facility information into FRS and get FRS information integrated into their systems. Through the FRS query services, state/tribal/territorial/local agencies can embed an EPA facility lookup service into their systems' public-facing facility application to provide a more comprehensive view of facilities of environmental interest to their public users.

### Status and Plans:

Applicants who wish to take advantage of FRS web services can access a listing of data resources: <https://www.epa.gov/enviro/frs-data-resources> and should periodically check RCS (see Appendix J for a description), a catalog of IT resources from EPA and its state and tribal partners. Applicants should check RCS frequently because EPA and its partners register new resources in RCS regularly.

Facility Identification (FacID) flow allows Partners to share their integrated facility/site data with EPA's [Facility Registry Service \(FRS\)](#). Partners can use the Exchange Network to share information on facilities, sites, monitoring stations, and other place-based areas subject to environmental regulation or of environmental interest. FRS was the first project to exchange data with states through the Central Data Exchange (CDX) - EPA's node on the Network, with FacID. The schema for FacID 3.0 is available and 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 the most recent version of FacID. Grant applicants can obtain information about FacID topics at <http://www.exchangenetwork.net/data-exchange/facility-identification/>

### Activities Grant Applicants Should Consider:

Applicants are encouraged to:

- Use FRS APIs to integrate their systems' facility data into FRS
- Use APIs to integrate FRS facility data into their systems
- Participate in pilots to expand facility web services to enhance facility information integration
- Leverage existing FRS's FacID data flow to:
  - Integrate state/tribal/territorial/local facility data into FRS.
  - Integrate FRS facility data into state/tribal/territorial/local systems.

**Cost Estimates:**

| <b>Function</b>   | <b>Service</b> | <b>Cost Estimate</b> |
|---|----------------|----------------------|
| Use FRS APIs to integrate data into FRS                       | APIs           | \$100,000            |
| Use APIs to integrate FRS data into partner systems           | APIs           | \$50,000-\$100,000   |
| Participate in pilots to expand facility web services         | APIs           | \$50,000-\$150,000   |
| Integrate state/tribal/territorial/local data into FRS        | FacID          | \$50,000             |
| Integrate FRS data into state/tribal/territorial/local system | FacID          | \$50,000             |

**More Information:**

- Facility Registry Service (<https://www.epa.gov/frs>)
- FRS Data Resources (<https://www.epa.gov/enviro/frs-data-resources>)
- Facility Identification (<http://www.exchangenetwork.net/data-exchange/facility-identification/>)

# Appendix B

## Foundational Exchange Network Shared Services

The Exchange Network Grant Program encourages projects that promote efficiency through the reuse of shared systems and resources. Services are software that enable the sharing of business logic, data, and processes across a network. Shared services are the delivery of a service, developed once and then managed centrally by one party, for use by other parties with agreed upon customer-service levels. This approach allows resources to be leveraged across an entire enterprise, and organizations to focus limited resources on activities that support their business goals and is the premise of the Exchange Network.

The EN provides the underlying network of computers managed by EN partners to exchange information, as well as the shared service components managed centrally by EPA or provided by a state, tribal or territorial partner for users across the EN. From an EN perspective, shared services include technological services, (e.g., CROMERR, Virtual Exchange, Enterprise Identity Management) and data services (e.g., facility identification, substance identification, publishing, analytical, visualization services).

By fostering implementation of shared services, EN partners expect to improve the exchange, timeliness, and quality of the environmental information shared between co-regulators resulting in reduced burden and improved environmental management decisions. This appendix provides information and opportunities for projects related to the foundational EN shared services which applicants can integrate into their own data flows and business processes.

The cost estimates that appear in the following appendix were made by the Subject Matter Experts who manage the featured service. Acknowledging that each state, tribe, and territory has different IT configurations and solutions for the programs they manage, it is permissible for application cost estimates associated with any individual suggested activity to exceed the estimates included in this appendix. If your estimate exceeds the estimate in this notice, you must provide an appropriate justification for the variation.

|   |                             |
|---|-----------------------------|
| <a href="#"><u>Virtual Exchange Service (VES)</u></a> .....     | <a href="#"><u>B-2</u></a>  |
| <a href="#"><u>Shared CROMERR Services (SCS)</u></a> .....      | <a href="#"><u>B-5</u></a>  |
| <a href="#"><u>Enterprise Identity Bridge</u></a> .....         | <a href="#"><u>B-8</u></a>  |
| <a href="#"><u>Facility Registry Service (FRS)</u></a> .....    | <a href="#"><u>B-11</u></a> |
| <a href="#"><u>Substance Registry Service (SRS)</u></a> .....   | <a href="#"><u>B-14</u></a> |
| <a href="#"><u>E-Enterprise Portal</u></a> .....                | <a href="#"><u>B-16</u></a> |
| <a href="#"><u>Laws and Regulations Service (LRS)</u></a> ..... | <a href="#"><u>B-18</u></a> |

## Virtual Exchange Service

### **Funding Opportunity Purpose:**

To reduce the cost and complexity to partners from managing physical EN nodes by implementing Virtual Exchange Services (VES) which can be leveraged for one or all EN data flows.

### **Service Background and Description:**

In 2012, the EN governance team established an integrated project team (IPT) consisting of states, tribes, and EPA to develop a cloud-based service for creating data exchanges on the Exchange Network which is now in production and ready for partner use. VES provides the same robust services as the traditional Exchange Network node but eliminates the need for partners to create and maintain a node server. EPA developed this new model in response to requests from Exchange Network partners that needed more cost-efficient ways to manage and maintain their nodes. In addition to cost savings, EN partners can leverage the Internet Service Bus (ISB), which offers application level connectivity - connecting applications and services in the cloud or on-premises without opening ports or changing firewall configurations.

The VES approach simplifies development and maintenance of data exchanges using inheritance features and plug-in support. It eliminates software licensing costs, server costs, and much of the administration costs for partners, while providing a simplified development model and greater economies of scale. State, tribal or territorial administrators retain complete control of all aspects of their VES, their data flows, and access to their staging tables or databases. VES can be used for some or all an organization's data flows as appropriate.

The [VES/Exchange Network Services Center Decision Tree](#) helps partners decide whether or not the VES option is right for their organization. VES can be used for some or all an organization's data flows as appropriate. VES can also be used for staging tables.

### **Status and Plans:**

VES is currently in production with large and small states, tribes, and air districts. Some states are converting all their existing flows to VES while others are using VES for new flows and keeping their physical nodes for existing flows.

EPA is interested in working closely with partners to leverage this new model for a shared node implementation (partners sharing a common scalable cloud platform). Installations of this type would provide a simplified solution for any partner (particularly partners lacking adequate resources for a dedicated node environment). EPA performs much of the basic administration centrally, allowing partners to concentrate on configuring data flows and publishing new services and data instead of administering node application servers. The VES Support team is available to help you be successful with VES.

### **Activities Grant Applicants Should Consider:**

There are several activities associated with this funding opportunity:

- Cover the transition cost for partners to move from a physical node implementation to the VES multi-tenant (shared) implementation. Applicants may also apply to implement data flows on VES while keeping other data flows on their existing node.
  - Configure data flows on the new centrally hosted cloud environment.
  - Partner staging databases could stay in place or be hosted in the VES Cloud.
  - Local staging tables will connect to VES via a New Virtual Exchange Communication Model described below.

- Grant applications for transitioning to the virtual exchange services focus on development activities such as:
  - Transitioning existing data flows to VES – mapping data if required.
  - Building new data flows in VES.
  - Testing.
  - Security plan requirements.
  - Virtual Exchange training.
- Use the new Virtual Exchange Communication Model for local staging tables; explore various ways of interconnecting from the partner’s staging tables or database servers to the VES in the cloud environment. The following technical options are currently available:
  - Internet Service Bus (ISB): The partner installs a component on a Windows machine in its environment that can communicate with their staging database, this an encrypted tunnel with the ISB in the cloud for relaying network activity to/from their VES services in the cloud. The component is supplied by CDX and installed as a Windows Server service. Additional documentation and installation instructions are available at: <http://www.exchangenetwork.net/virtual-exchange-service/>
  - Secure Virtual Private Network (VPN): This is a secure network connection from the partner’s node in the cloud to its backend database environment. Once the connectivity is established, the node can make direct database connections through the secure channel. This is the traditional VPN approach and the partner must open a firewall for VPN access.

Partners are encouraged to evaluate one or more of these options with their security team and select the option that the security team can approve for their VES implementation. Partners should include their target models in their grant.

**Cost Estimates:**

Actual award amounts will be based upon the complexity of data flows selected for migration to this environment. The following are EPA estimates for implementing individual data flows that have been adopted by EN partners and will be used for application evaluation purposes:

| <b>Data Flow</b> | <b>Services</b> | <b>Implementation Difficulty</b> | <b>Estimated VES Implementation Cost</b> |
|------------------|-----------------|----------------------------------|--|
| AQS 3.0          | 10              | Medium                           | \$20,000-\$30,000                        |
| ICIS-AIR         | 64              | Medium                           | \$40,000-\$80,000                        |
| FACID v3 FRS     | 10              | Medium                           | \$40,000-\$80,000                        |
| E-Beaches        | 9               | Medium                           | \$20,000-\$30,000                        |
| EIS              | 6               | Medium                           | \$20,000-\$30,000                        |
| EMTS v3.0        | 10              | Medium                           | \$40,000                                 |
| ICIS-NPDES       | 280             | High                             | \$40,000-\$80,000                        |
| SDWIS            | 8               | Medium                           | \$20,000-\$30,000                        |
| ATTAINS          | 6               | Medium                           | \$20,000-\$30,000                        |
| CAFO             | 2               | Low                              | \$5,000-\$10,000                         |
| ICIS-DA          | 3               | Medium                           | \$20,000-\$30,000                        |
| TRI (OUT)        | 6               | Medium                           | \$20,000-\$30,000                        |
| UIC              | 4               | Medium                           | \$20,000-\$30,000                        |
| WQX v2.1         | 4               | Medium                           | \$20,000-\$30,000                        |
| CROMERR          | 1               | Low                              | \$5,000-\$10,000                         |
| OWIR_ATT         | 2               | Low                              | \$5,000-\$10,000                         |
| RCRA 5.2,5.3     | 13              | Medium                           | \$20,000-\$30,000                        |
| Radon            | 2               | Low                              | \$5,000-\$10,000                         |

## Shared CROMERR Services

### Funding Opportunity Purpose:

To expand the use of shared CROMERR services by EN partners to minimize customized solutions, reduce development and maintenance cost for electronic signatures and identity proofing, make the most efficient use of limited resources, and eliminate paper-based reporting by the regulated community.

### Service Background and Description:

EPA's Cross Media Electronic Reporting Regulation (CROMERR) sets technology-neutral and performance-based standards for systems used by states, tribes and local governments to receive electronic reports and documents from entities regulated under EPA-authorized programs. These standards cover a variety of system functions (e.g., user identification, data integrity, security) designed to make electronic reports as legally defensible as paper submittals. EN partners and co-regulators can leverage CDX shared CROMERR services (SCS) which are managed centrally to meet the CROMERR requirements within their own reporting programs.

States and tribes can select the range of services they need and implement them to meet their organizational and system needs. Categories of the SCS services available include:

- **Online Registration and Help Desk**- Centralized web/mobile platform services for shared user registration that builds upon shared CROMERR web services for user management and identity-proofing to offer administrative tools for credential management, role-based access, and CROMERR sponsorship.
- **Identity Management** – Identity-proofing individuals to meet CROMERR minimum criteria and at minimal cost to co-regulators.
- **User Management**- Creating, validating and maintaining accounts of reporting entities.
- **Electronic Signature**- Validating user credentials, verifying user intent, and electronically signing submissions from regulated entities in a way that is as legally defensible as a paper-based approach.
- **Copy of Record (COR) Management**- Storing, maintaining, and retrieving data submissions at the level of legal integrity required by CROMERR.
- **Advanced CROMERR Services**- Single sign-on authentication and web user redirects between regulated entity websites and <https://encromerr.epa.gov> to support navigation to advanced CROMERR registration, e-signature functions, administration and record-keeping.
- **Organization Management Services**- Creating and updating Organization profiles for Advanced CROMERR Registration.

SCS is made available to EN partners to reduce their cost to develop and maintain many aspects of an E-Reporting solution, leverage expertise across the SCS partner community, streamline their CROMERR review and approval process, and integrate all services while maintaining the look and feel of their own agency web site presence

### Status and Plans:

EPA has implemented a set of CROMERR shared services and deployed these services with an initial group of co-regulators. States and tribes can select the range of services they need and implement them to meet their organizational and system needs. Categories of the SCS services available include:

- **Online Registration and Help Desk**- Centralized web/mobile platform services for shared user registration that builds upon shared CROMERR web services for user management and identity-proofing to offer administrative tools for credential management, role-based access, and CROMERR sponsorship.
- **Identity Management** – Identity-proofing individuals to meet CROMERR minimum criteria and at minimal cost to co-regulators.
- **User Management**- Creating, validating and maintaining accounts of reporting entities.
- **Electronic Signature**- Validating user credentials, verifying user intent, and electronically signing submissions from regulated entities in a way that is as legally defensible as a paper-based approach.
- **Copy of Record (COR) Management**- Storing, maintaining, and retrieving data submissions at the level of legal integrity required by CROMERR.
- **Advanced CROMERR Services**- Single sign-on authentication and web user redirects between regulated entity websites and <https://encromerr.epa.gov> to support navigation to advanced CROMERR registration, e-signature functions, administration and record-keeping.
- **Organization Management Services**- Creating and updating Organization profiles for Advanced CROMERR Registration.

Many co-regulators have established plans for implementing the necessary business processes and technical environments to consume these services. More information is available on the status of the services at the [EN website](#). Detailed information on SCS may be located at <http://www.exchangenetwork.net/shared-cromerr-services-ipt/> and <https://encromerrdev.epacdxnode.net/about>

#### **Activities Grant Applicants Should Consider:**

EN partners implementing SCS for their electronic reporting programs can choose to leverage EPA’s centralized CROMERR services with support from the Grant Program. Acceptable activities include but are not limited to the following:

- Integrating SCS into electronic reporting flows.
- Documenting technical and security requirements.
- Testing and deploying SCS.
- Administrative process to coordinate procurement of third party vendor identity-proofing (currently Lexis Nexis).
- Project planning and management.

Many standard and advanced CROMERR services may be independently implemented or combined, and/or integrated with Virtual Exchange Services (VES) for greater efficiency. Actual award amounts will be based upon the integration and documentation for service functions, service categories, and number of reports (first, and subsequent) as well as the number of security roles provisioned for advanced services for regulated reports.

#### **Cost Estimates:**

The costs for developing an electronic reporting data flow can vary depending on the complexity of the environmental program, volume of data requirements and magnitude of implementation. While independently developed CROMERR applications are eligible for consideration, applicants who propose

the maximum use of SCS functions across multiple or enterprise-wide reporting will be given priority consideration for funding. The following are cost estimates directly associated with SCS integration.

| <b>Grant Activity</b>  | <b>Estimated Implementation Cost</b> |
|--|--------------------------------------|
| Integrate a single set of service functions (e.g., user registration)                          | \$10,000-\$25,000                    |
| Integrate the entire suite of service functions  | \$25,000-\$40,000                    |
| Document technical and security requirements associated with SCS (based on using all services) | \$10,000                             |
| Testing and deployment of SCS  | \$10,000                             |
| Project planning and management  | \$10,000                             |
| Administrative process to coordinate procurement of third party vendor identity-proofing       | \$5,000                              |

*Note: If the EN applicant proposes to implement the third-party identity-proofing service, the applicant will enter into agreement directly with the service vendor prior to production release and be responsible for fees associated with the ongoing identity-proofing of users.*

## Enterprise Identity Bridge (Identity Management)

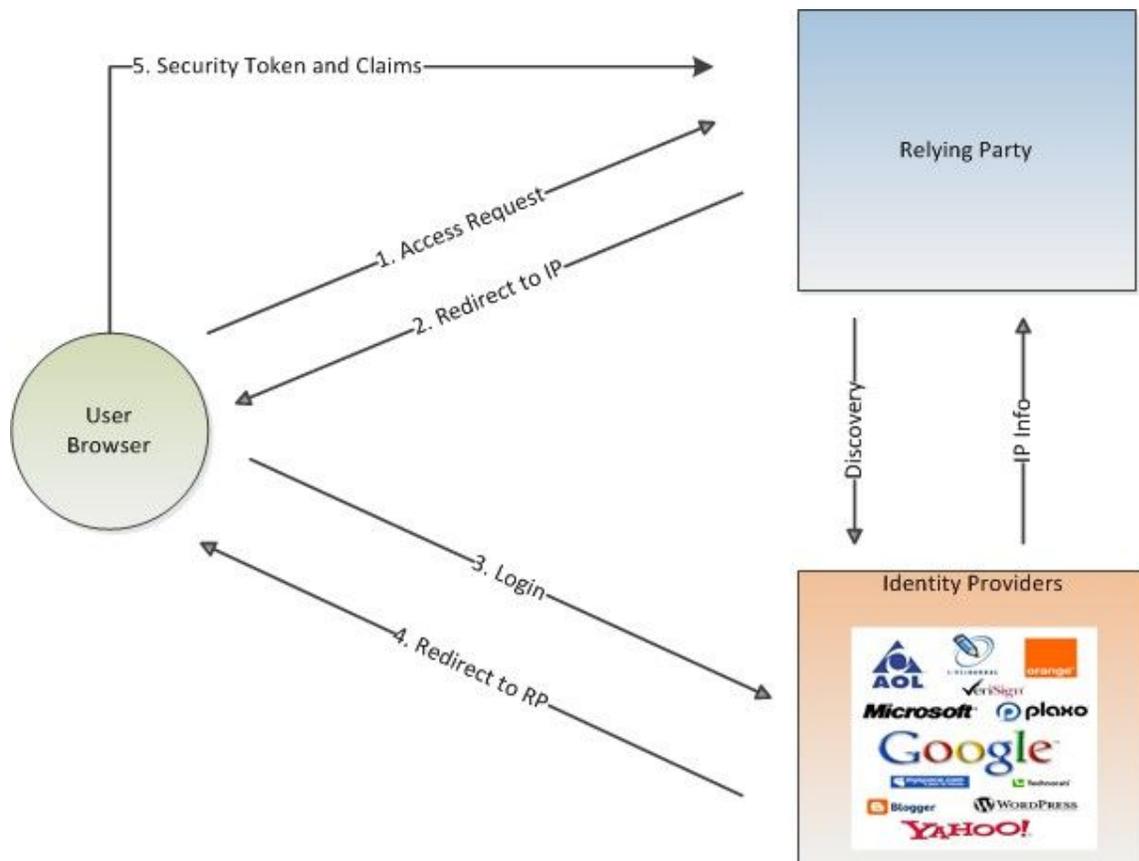
### Funding Opportunity Purpose:

To increase the number of EN partner domains that individual E-Enterprise/EN users can access using a single identity to enter portals and applications across the partner network. Additionally, the Identity Bridge saves partners time and resources from registering users and maintaining identities that duplicate those from other EN partners. The objective is to augment access to data, services and applications in the domains outside the user's organization.

### Service Background and Description:

Web applications need to be secured using authentication and authorization mechanisms often requiring users to create multiple, different, passwords and registrations when entering portals or applications in domains that are not in their organization. The Enterprise Identity Bridge offers a standards-based, unified interface to enable EN partners to use hundreds of thousands of user accounts (state accounts, CDX, NAAS, social media, etc.) without having to register and manage the new identities.

The Exchange Network Enterprise Identity Bridge is based on open standards such as WS-Federation, WS-Trust, OpenID, oAuth and OpenID Connect. The standards are widely supported in almost all platforms, and there are many toolkits available that make it even easier to integrate to the Identity Bridge. Identity federation is a process of sharing user identities and user authentication processes between two parties: The relying party (RP) and the identity provider (IdP). The following diagram depicts the general process of federated authentication:



### **Status and Plans:**

Wyoming and North Dakota have test implementations that they plan to push into production. More EN partners are expected to use this service for traversing across partner E-Enterprise portals.

### **Activities Grant Applicants Should Consider:**

Several types of enterprise security integration can be done with grant funds:

- Enable Single Sign On (SSO) in your website by integrating the Secure Token Services to accept Enterprise tokens.
- Integrate applicant portals and web applications to leverage the Identity Bridge and third-party identities (also see E-Enterprise Portal entry).
- Integrate applicant's existing SAML/Open ID /Open ID Connect Identity provider interface into the Identity Bridge.

A description of each way to integrate enterprise security follows:

- **Enable Single Sign On for your users across the enterprise using the Secure Token Services**  
After users are authenticated, a call to the Secure Token Services will create a standard enterprise token for the user. The token can then be used to access any enterprise relying party (web sites), however the web sites will continue to authorize users.
- **Integrating the Identity Services into Your Web Applications**  
When using the Identity Bridge, it will present a list of trusted identity providers to the user. It then redirects the user to the identity provider after a selection is made. If a relying party has made a choice of OpenID provider already, it can direct the user to the provider. The E-Enterprise Portal has already integrated this way.

The process of integrating the Identity Bridge into a relying party in the .NET platform is configuration driven; no programming, scripting or web designing is needed. The integration can be accomplished through editing the web configuration file: web.config.

- 1) When a user tries to access a protected resource at the relying part web site.
  - 2) The user is offered a choice of identity providers and redirected to the selected identity provider.
  - 3) The user authenticates by providing login information at the identity provider's login page.
  - 4) After successful authentication, the user is redirected to the relying part web site along with a signed security token and other claims.
  - 5) The relying party validates the security token and allows access if the token is valid (signed by trusted issuer).
- **Integrate your own existing Open ID / Open ID Connect Identity provider interface into the Identity Bridge**  
Registration of your interface with the bridge so that it can be used across the enterprise. This involves governance approval and interface documentation at the Identity Bridge.

**Cost Estimates:**

Integration costs vary by the programming environment. Evaluation of applications for Identity Bridge will be evaluated based on the following estimates:

| <b>Programming Environment</b> |                   | <b>Estimated Integration Cost</b> |
|--------------------------------|-------------------|-----------------------------------|
| <b>PHP</b>                     | Identity Provider | \$50,000                          |
|                                | Relying Party     | \$50,000                          |
| <b>.NET</b>                    | Identity Provider | \$25,000                          |
|                                | Relying Party     | \$25,000                          |
| <b>Java</b>                    | Identity Provider | \$50,000                          |
|                                | Relying Party     | \$50,000                          |

## Facility Registry Service

### **Funding Opportunity Purpose:**

To improve the quality, timeliness, and availability of facility-related data used by EN partners in managing environmental programs and integrate facility data across partner systems.

### **Service Background and Description:**

The Facility Registry Service (FRS) is EPA's centrally managed database that integrates facility data across over 90 EPA and other federal systems, as well as numerous state, tribal, territorial and local databases. FRS provides access to information about facilities subject to environmental regulations and for other sites of environmental interest, including the names, locations, associated program IDs, industrial classification, corporate and contact affiliation, and other data.

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. FRS data is available as [web services](#), [prepackaged downloads](#), and [custom downloads](#).

Applicants that wish to take advantage of FRS web services can find a listing of data resources here: <https://www.epa.gov/enviro/frs-data-resources> and should periodically check RCS, a catalog of IT resources from EPA and its state and tribal partners. Applicants should check RCS frequently because EPA and its partners register new resources in RCS regularly.

FRS exposes several REST services that allow developers to utilize a live feed of data from the FRS database (<https://www.epa.gov/enviro/frs-rest-services>). The FRS Lookup service is used to access facility profile information containing name, address and geospatial coordinates. Watershed boundaries and congressional district information is also available. Environmental program reporting information is also available by facility. For example, you can query the Superfund facilities within specified geographic boundaries.

FRS has jointly developed a reusable web-based module for CDX-based data collection flows that leverages the FRS lookup service to improve data collection and quality. This tool provides the ability to look up, retrieve, and repopulate facility information tied to existing known permit IDs and EPA's FRS Registry ID to reduce data duplication, ambiguity, and redundancy. The widget also provides capabilities for validating and standardizing address fields, along with providing a geocoding service and map preview for visual verification of facility locations. The map tool can also allow users to provide precise locations via dragging and dropping a pin on aerial imagery or by entering lat/long data, and generates locational metadata for QA/QC. This tool has already been implemented in over a half dozen EPA data collection interfaces such as TRI and TSCA to yield significant internal and external burden reduction, along with significant improvements in data quality.

The Facility Linkage Application (FLA) is EPA's data curation tool that is available to states/tribes/local municipality co-regulators. This data quality tool allows state/tribal data stewards to suggest changes/corrections to FRS data, such as deduplication of facilities, correcting mislinkages, and updating/correcting facility name/address. To register to become a steward of FRS data, please visit: <https://www.epa.gov/frs/fla-facility-linkage-application>

**Status and Plans:**

Through the work of the E-Enterprise Facility Integrated Project Team, detailed requirements for facility data integration and joint data curation have been documented. This information is a useful resource for states and tribes interested in expanding facility information for their master data management systems or for leveraging EPA's facility information resources: <https://e-enterprisefortheenvironment.net/our-projects/e-enterprise-facility-integration/>

EPA has developed and tested facility web services in partnership with E-Enterprise partners. These services are available, and applicants are encouraged to research their capabilities and determine if they can be implemented with their systems to improve data timeliness, quality, and completeness for facilities of environmental interest in their purview. Potential benefits include burden reduction in reporting, improved data accuracy, and synchronizing data in real time between FRS and partner systems.

FRS enhanced the facility data model in December 2016 to include sub-facility components, providing additional granularity for facility information. EPA plans to continue development of FRS's facility model to enable management of sub-facility component data; examples include detailed information about stacks, outfalls, or processes. Web services to retrieve sub-facility component data should be developed in the next six to 12 months.

**Activities Grant Applicants Should Consider:**

- Use of the FRS web services by state, tribal, territorial, and local programs to integrate data by FRS ID.
  - This activity can also include integrating other state, tribe, territory, and local programs to incorporate additional environmental interests (e.g., air, water, waste, etc.) or sub-facility information for partner use.
  - Partners that integrate their facility information can use this service to develop tools for retrieving additional value-added data fields into their facility records, including geocoded addresses, NAICS codes, applicable census information, hydrologic unit codes (HUC), and congressional boundary information.
  - Partners that integrate their facility information can also use this service to develop tools for retrieving FRS data for comparative analysis and reconciliation.
- Use FRS Lookup service and/or facility web services for front end data entry for burden reduction as well as supporting entry of data integrated on FRS ID.
  - This activity can also include integrating other state, tribe, territory, and local programs to incorporate additional environmental interests (e.g., air, water, waste, etc.) for partner use.
  - Partners that integrate their facility information can use these services to develop tools for retrieving additional value-added data fields into their facility records, including geocoded addresses, NAICS codes, applicable census information, hydrologic unit codes (HUC), and congressional boundary information.
  - Partners that integrate their facility information can also use these services to develop tools for retrieving FRS data for comparative analysis and reconciliation.
- Use of the Facility Linkage Application (FLA) for data stewardship to reconcile and analyze data and assess data quality prior to projects requiring the use of facility information.

**Cost Estimates:**

| <b>Grant Activity</b>  | <b>Service</b>  | <b>Cost</b>         |
|--|---|---------------------|
| Use FRS web services to integrate data by FRS ID                   | EnviroFacts FRS REST service or FRS/partner submit services | \$50,000-\$100,000  |
| Use FRS Look-up service to support facility information collection | FRS Look-up or FRS query service                            | \$100,000-\$150,000 |

## Substance Registry Services (SRS)

### Funding Opportunity Purpose:

To improve the quality of chemical and biological data being flowed across the EN and increase its discoverability by the public.

### Service Background and Description:

SRS is EPA's centralized service for sharing basic information about chemicals, biological organisms, and other substances that EPA and/or other organizations (e.g., state agencies, tribal agencies, other federal agencies) track or regulate. SRS:

- Enables data integration by substances (chemicals and biological organisms).
- Increases data quality of substance names and other identifiers in systems and online forms.
- Improves information management for individual substances and regulatory substance lists.
- Helps users discover which systems and programs have data for a substance and under which substance name.

Each substance has a record that contains basic information about the substance, such as Chemical Abstract Service (CAS) name and number. SRS records include synonyms, which can help users discover substances of interest. There are also links to health and safety fact sheets developed internally at EPA or externally by states, other federal agencies, and/or international organizations. In addition, SRS catalogs substances into programmatic and statutory lists.

There are several services available for use by partner systems. To promote information management of chemical identification, SRS can register state and tribal programmatic lists. States and tribes also can improve public access to health and safety information by creating direct links from their websites to individual SRS records. SRS also has a widget that partners can incorporate into their web pages.

### Status and Plans:

Web services are available for partners to pull information from SRS for use in their system for integration into online reporting forms or other tools, or for displaying their substance lists on their websites. The Toxics Release Inventory and the Chemical Data Reporting (CDR) are two examples of programs that have incorporated SRS web services into their online reporting forms. When entering chemical names on the reporting forms, a submitter searches for a chemical using a synonym or other identifier. The submitter then selects the appropriate chemical, which the service retrieved from SRS. Integration of SRS web services into the online reporting form saved the CDR program hundreds of thousands of dollars in reduced data quality errors. SRS can be accessed at [www.epa.gov/srs](http://www.epa.gov/srs).

### Activities Grant Applicants Should Consider:

- Work with the SRS team to add programmatic or statutory substance lists to SRS for improved management of those lists and to make it possible to crosswalk chemicals, regardless of synonym, between states, tribes, and EPA.
- Add SRS identifiers to state or tribal systems to promote the ability to link across datasets by substance, regardless of which synonyms are used.
- Encourage state or tribal programs to integrate SRS web services into online reporting forms or other tools to improve the data quality of substance identities or to help submitters report for the correct

substance.

**Cost Estimates:**

| <b>Grant Activity</b>  | <b>Estimated Cost to Implement</b> |
|--|------------------------------------|
| Add state or tribal programmatic or statutory substance lists to SRS   | \$5,000                            |
| Add SRS identifiers to state or tribal systems to promote the ability to link across datasets  | \$5,000                            |
| Integrate SRS web services into online reporting forms or other tools to improve the data quality and reporting of the correct substance | \$30,000 - 40,000                  |

**Shared Services/Reusable Components Available:**

The SRS REST Services allow the use of web services to access data from SRS. Single substance queries pull standardized information about a substance, as well as the environmental statutes and data systems that track or regulate that substance and the synonym(s) used by those lists for the substance. Multi-substance queries are also available, in addition to services that facilitate auto-complete functionality for substance names. Find them at [https://ofmpub.epa.gov/sor\\_internet/registry/substreg/automatedservices/index.jsp](https://ofmpub.epa.gov/sor_internet/registry/substreg/automatedservices/index.jsp)

## E-Enterprise Portal

### Description:

The E-Enterprise for the Environment Portal is a web platform that supports the way the public, regulated community, and co-regulators conduct environmental transactions and access web resources. EPA is working with States, Territories, and Tribes to further develop the E-Enterprise Portal and a network of interoperable partner portals, integrating data and functionality to create a dynamic tool for collaboration and innovation and to improve and customize user experience (<http://www.e-enterprise.gov>).

This funding opportunity enables applicants to partner with EPA and other States, Tribes, and Territories to identify and provide new information and services that are of interest to multiple partners. The intent is to reduce costs and burden borne by co-regulators when developing services and applications independently and promote sharing services as standard operations. There are two fundamental approaches being taken to achieve this:

- Building services and applications to be shared by other partners in the E-Enterprise Portal.
- Developing local services and applications in partner portals that can be shared and consumed by other partners and the E-Enterprise Portal.

Examples of projects include: The Be Well Informed and Assistance Gateway widgets in the E-Enterprise Portal which include information and resources provided by multiple partners and allows for partners to manage their own environmental data requirements on these centralized applications; and, Missouri's Gateway for Community Assistance, the partner portal template that serves Missouri's information to Assistance Gateway through a webservice

### Status and Plans:

EPA launched a prototype for the E-Enterprise Portal in 2015, with an intent to expand service offerings and participation from partners over time. As partners develop E-Enterprise Portal and localized applications and services, new features and functions will be added. Ultimately, the E-Enterprise Portal will contain a broad suite of resources for co-regulators, the regulated community and the public. Additional information is available at <https://www.epa.gov/e-enterprise/e-enterprise-portal> (overview) and <https://e-enterprise.gov/for-developers> (User Guide and E-Enterprise Portal Service Development Guidelines).

### Activities Grant Applicants Should Consider:

Portal applications that accomplish the following will be considered for funding:

- Meet environmental information or service needs of multiple E-Enterprise and Exchange Network partner user communities as demonstrated through partnerships.
- Design for easy expansion/scalability to additional partners' user communities, to use web services, with responsive design for display on either web or mobile devices, and other design criteria that help to meet interoperability goals identified in the E-Enterprise Portal Service Development Guidelines.
- Work with the Portal team to develop standards and guidance for portal design, development and operations.
- Develop an approach for access controls across a network of partners and users to the application or service through the federated identity management service.

- Implement applications that are shareable to the maximum extent (build, host, maintain once and use many times) across multiple partner communities.

**Cost Estimates:**

EPA will consider grant opportunities that are low in complexity and cost in development and operations to achieve the above results as minimal viable products that can be deployed with multiple partners. Cost estimates will be considered based on the limits of the Exchange Network Individual and Partnership grants and the extent to which the cost demonstrates inclusiveness with or need by other partners and its contribution to the above criteria. The inclusion of estimated operation costs and proposals for cost recovery in grant applications will also assist in the review process.

**More Information:**

It is expected that applicants will review the following websites for opportunities to reuse existing services or propose new services that promote interoperability and improved customer experience among E-Enterprise and Exchange Network partners.

- E-Enterprise Community Inventory Platform at [www.eecip.net/](http://www.eecip.net/)
- Reusable Component Services (RCS) at <http://www.exchangenetwork.net/data-exchange/rcs/>

## Laws and Regulations Services

### **Funding Opportunity Purpose:**

To increase the ability of the states, tribes, territories, industry and the public to discover the regulations that may be applicable to specific chemical and biological substances or industry sector. The desired output is a more comprehensive picture of how substances or industry sectors are regulated at both the state and federal levels.

### **Service Background and Description:**

As part of the E-Enterprise initiative to help the public, including industry, discover potentially applicable regulations, EPA is cataloging federal environmental laws, their implementing regulations, and the EPA programs that oversee those regulations. EPA is integrating information on federal environmental regulations into the E-Enterprise Portal with a tool called the Federal Regulation Finder EPA envisions making it possible for the public to discover state and tribal laws, regulations, and programs as well, with the aim of making a seamless experience for users of the Portal.

The Law and Regulations Service will contain the following basic information (metadata) about the laws and regulations:

- Citation: The formatted reference to the specific state/tribe regulation. (E.g., the citation for the federal Toxic Chemical Release Reporting regulation is 40 CFR 372, which refers to Title 40, Part 372 of the Code of Federal Regulations)
- Title - The title of the specific regulation. (E.g., Toxic Chemical Release Reporting: Community Right-to-Know)
- URL to document (PDF, HTML) \* - The link to the PDF or HTML document that provides the information about the law or the regulation.
- Publication Date - The date the document (see above bullet) was made available to the public.
- Authority (Statute/Law) \* - The authority for the regulation as published. (E.g., the state/tribe law or statute)
- Program / Office - The state/tribe program/office responsible for the regulation.
- Associated NAICS codes or SIC codes.
- Associated chemicals or other substances.
- Associated keywords.

### **Activities Grant Applicants Should Consider:**

Cataloging state or tribal laws, the associated regulations, and implementing programs, as a first step towards sharing and possibly linking this information with other state, tribal, and federal laws and regulations.

Making information compiled available via an API (or otherwise, electronically) so that the information could easily be shared with EN partners.

**Cost Estimates:**

| <b>Grant Activity</b>         | <b>Grant Sub-Activities</b>   | <b>Estimated Implementation Costs</b> |
|-------------------------------|---|---------------------------------------|
|                               | Creating automated process to keep catalog current                            | \$10,000                              |
| <b>Cataloging Regulations</b> | Cataloging regulations and associating them with appropriate sections of laws | \$5,000                               |
|                               | Creating automated process to keep catalog current                            | \$10,000                              |
| <b>Cataloging Programs</b>    | Cataloging state/tribal programs and associating them with regulations        | \$25,000                              |
| <b>Web Services</b>           | Integrate EPA's LRS web services into a local portal                          | \$30,000-\$40,000                     |

**Shared Services/Reusable Components Available:**

Search federal laws, regulations, and related EPA programs, chemical lists, and keywords:

<https://ofmpub.epa.gov/lrswebservices/>

| <b>Grant Activity</b>         | <b>Grant Sub-Activities</b>   | <b>Estimated Implementation Costs</b> |
|-------------------------------|---|---------------------------------------|
| <b>Cataloging Laws</b>        | Cataloging laws   | \$5,000                               |
|                               | Creating automated process to keep catalog current                            | \$10,000                              |
| <b>Cataloging Regulations</b> | Cataloging regulations and associating them with appropriate sections of laws | \$5,000                               |
|                               | Creating automated process to keep catalog current                            | \$10,000                              |
| <b>Cataloging Programs</b>    | Cataloging state/tribal programs and associating them with regulations        | \$25,000                              |
| <b>Web Services</b>           | Integrate EPA's LRS web services into a local portal                          | \$30,000-\$40,000                     |

**Shared Services/Reusable Components Available:**

Search federal laws, regulations, and related EPA programs, chemical lists, and keywords:

<https://ofmpub.epa.gov/lrswebservices/>

# Appendix C

## Strengthening Partner Information Management Capabilities

The EN's sustainability depends on partners' capacity to manage their information in a way that allows them to create and maintain Network data flows as well as enabling the discovery, publication, and usefulness of their information. Some existing and potential EN partners have limited experience with managing data in a way that facilitates electronic reporting and its sharing via services. They also often do not have an operational knowledge of the Exchange Network or its relevance to their environmental management programs. This hinders them from taking advantage of the many EN features that could be useful to their environmental program planning and decision making in more cost-effective ways.

This opportunity will enable tribal and territorial governments to benefit from a coordinated effort to identify the most valuable ways to participate in the EN given their unique regulatory responsibilities and relationships, data needs, capacity, funding, and comfort with data sharing.

### Territory and Tribal Capacity Building (Individual or Partnership Opportunity)

- **Individual Capacity Building Proposals**- Territories, tribes and inter-tribal consortia are eligible to apply for individual capacity building grants that will enhance the applicant's environmental programs and the applicant's ability to share environmental data electronically with EN partners. Proposals must identify outputs that will increase the applicant's ability to share environmental information electronically with EPA or other EN partners, (for example, developing a backend database for a priority data system or implementing an intra-tribal data exchange). Proposals may include developing a data management plan, but the plan must lead to the development of a test or prototype system.
  - Applicants may apply for an individual capacity-building grant up to \$200,000.
- **Collaborative Capacity Building Proposals**- Additionally, territories, tribes and inter-tribal consortia are eligible to apply for partnership grants. These proposals must include multiple partners and identify an experienced EN partner that can serve as a mentor. Collaborative capacity building proposals may include funding requests for the mentoring partner's personnel costs and travel.
  - To serve as a mentor for a capacity building application, an experienced partner must currently report or publish data for one or more environmental programs using its own node or Virtual Exchange Services.
  - Furthermore, a proposal must include a commitment letter from the mentor tribe, intertribal consortium, territory, or state.
  - In the case that a territory, tribe, or intertribal consortium applying for a capacity-building grant can demonstrate past experience implementing an Exchange Network data flow, **the requirements for identifying a mentor will be waived.**

Applicants may apply for a collaborative capacity-building grant up to \$400,000.

# Appendix D

## Promoting Reuse of Exchange Network Partner Products

The E-Enterprise/Exchange Network (EN) Community strives to improve the efficiency and effectiveness of environmental management by collectively learning about successful business processes, data management and technology approaches used by EN partners. Therefore, in FY 2019, the EPA Exchange Network Grant Program continues to require that grant applicants explicitly identify which EN data and technology management resources developed by EN partners will be reused or repurposed in the text of their grant project proposals.

There are two key tools available to assist applicants in identifying EN partner products that might be appropriate for their proposal: Reusable Component Services (RCS) and the E-Enterprise Community Inventory Platform.

**Reusable Component Services (RCS):** [www.epa.gov/rcs](http://www.epa.gov/rcs)

RCS is part of EPA's System of Registries. It is both a catalog of EPA, State, Tribal and Territory services and a registry of XML schema, widgets, plug ins, web services and many other resources all of which can be reused by a user for their projects. RCS has an interface through which users can search for existing data and IT assets which are grouped into resource types containing similar assets. This enables users to leverage existing data, services/APIs, and/or software codes to maximize investments by reducing redundant development. Anyone can search RCS by going to [the RCS public website](#) without a password or registration. All resources designated as publicly viewable can be found here. To see resources marked as only available to EPA and partners, you must login into RCS.

In addition to registering new EN resource developed through an EN grant, if you are reusing a resource of ANY type in RCS, you must register an Implementation/Reuse type resource in RCS, indicating the reuse. This is necessary to ensure that you get credit for such reuse and so that the EN can measure success in promoting reuse. Please use [the RCS Grant website](#).

Please navigate to the "References" section on the RCS website ([https://ofmpub.epa.gov/sor\\_internet/registry2/reusereg/trainingandeducation](https://ofmpub.epa.gov/sor_internet/registry2/reusereg/trainingandeducation)) to access instructional guides on how to effectively use the RCS resources.

| Resource   | Description of Resource  |
|--|--|
| <a href="#">RCS Grant website</a>                | There is a grant-specific access point to search/add components to the RCS database so that grant IDs and reuse opportunities can be recorded. |
| <a href="#">Requesting Access to RCS</a>         | This document will help users learn how to obtain access to the RCS database for non-EPA users.  |
| <a href="#">Adding New IT Resources into RCS</a> | This document will guide you through the registration process for any IT components that was developed using EN grant funds                    |
| <a href="#">Searching in RCS</a>                 | This document provides detailed instructions on how to do more effective searches in the RCS database.   |

**E-Enterprise Community Inventory Platform (EECIP): (<https://www.eecip.net>)**

The second tool for identifying EN partner products is the **E-Enterprise Community Inventory Platform (EECIP)**. The EECIP is an online community and living project inventory for employees of Federal, Tribal territorial, and state environmental agencies to enter information about agency projects, technical environment, and their own professional interests. Projects and expertise can be tagged to make connections to peers. Users can learn from and collaborate with colleagues and experts and discover, reuse, or repurpose the work of others. The site search includes projects, agencies, discussion topics, and staff. Projects in all parts of the development cycle can be added to the EECIP – even projects just under consideration – to help users connect with each other in the initial stages of a project, which may be beneficial for identifying potential EN grant partnerships.

# Appendix E

## Detailed Instructions for Submitting Applications

Applicants for the FY 2019 Exchange Network Grant program must submit an application package to EPA by **11:59 Eastern Time on April 8, 2019**. Except as noted below, applicants must apply electronically through [Grants.gov](https://www.epa.gov/grants.gov) under this funding opportunity based on the grants.gov instructions in this announcement.

The following forms and documents are required under this announcement (fillable forms can be obtained from <https://www.epa.gov/grants/epa-grantee-forms> ). All packages must contain a cover letter, project narrative, grant forms, and attachments.

### **Overview of Application Materials:**

#### **Mandatory Documents**

1. Project Narrative Attachment Form – for submitting:
  - a. Cover Letter
  - b. Project Narrative
2. Grant Forms
  - a. Application for Federal Assistance (Standard Form (SF-424))
  - b. Budget Information for Non-Construction Programs (SF-424A)
  - c. Assurances for Non-Construction Programs (SF-424B)
  - d. Key Contacts Form (EPA Form 5700-54)
  - e. Pre-award Compliance Review Report (EPA Form 4700-4)
3. Budget Narrative Attachment Form – for submitting the Detailed Itemized Budget

#### **Additional Attachments, if applicable:**

4. Other Attachment Form – for submitting the following documents, if applicable
  - a. Personnel attachments, if applicable
  - b. Negotiated Indirect Cost Rate Agreement, if applicable
  - c. Additional Information for Inter-Tribal Consortium, if applicable
  - d. Formal Project Partners - Roles and Responsibilities and Distribution of Funds, if applicable
  - e. List of Exchange Network Assistance Agreements, if applicable

### **Detailed Application Information**

#### **Mandatory Documents:**

##### **1. Project Narrative Attachment Form**

- a. **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 E) including:

- Applicant information;
- Project title;
- Type of vehicle requested (grant/cooperative agreement/ Performance Partnership Grant);
- Proposed amount of grant (broken down into direct funding and in-kind assistance if relevant);
- Partners on the grant (if applicable);
- Brief project summary including a statement of project goal(s);
- Contact information for the project lead; and
- Signature of executive level Authorized Organizational Representative (AOR).

b. **Project Narrative**

i. **General Guidelines for Writing a Successful Project Narrative:**

1. **Clarity and Succinctness** - A proposed work plan **must not exceed ten pages. The EPA grants review panel will not review any work plan elements that appear after the tenth page.** Grant panels score proposals on how well they meet the criteria. The narrative should completely and clearly describe how the proposal meets each criterion.
2. **Completeness and continuity** – Make sure the project narrative fully addresses each criterion. Make sure all items that belong in the work plan are grouped together and that no non-work plan items are included in this portion of the application.
3. **Numbering**– Number each page of your work plan from one to ten.
4. **Legibility** – Proposals should use fonts (serif or sans serif) that are 11 point or higher. Use 1-inch margins and single line spacing. Small font size across full pages is not necessary (see 1.a) and it makes a reviewer’s job harder.
5. **Limit the Terminology to “Goals, Outputs and Outcomes.”** There are no “objectives, milestones, or tasks” in Exchange Network Grant proposals. There is nothing wrong with those terms. In fact, you might find them useful for your internal project planning and tracking. However, limiting and standardizing these terms makes it easier for panelists to score proposals consistently.

- ii. **Project Narrative Contents** – Include each of the following items in the ten-page project narrative. **Applicants must address all evaluation criteria in their Project Narrative.** The project narrative must substantially conform to the following outline and content:

1. **Project Description** – This should be a narrative description of the proposed work. If the proposal is for more than one project, it may be helpful to organize the introduction by goal. The purpose of the introduction is to help reviewers better understand what is being proposed.
  
2. **Project Goals, Outputs and Outcomes** – Include a plan that will allow the applicant to track and report progress toward achieving the project’s proposed goals. Reviewers will look for a table similar to the one included below as evidence of a plan to track and report progress. Using the table below as a model will ensure reviewers can see what major project outputs (major deliverables or events) you propose for each goal (a self-contained project), the anticipated budget for each goal and output, when they are scheduled, and which outcomes leading to environmental results each proposed goal supports.

**Goals, Outputs, Scheduled Completion Dates and Outcomes**  
*Suggested format – expand number of goal and outputs as needed*

| Goal  | Output | Output budget | Scheduled Completion Date | Outcome(s) |
|---|--------|---------------|---------------------------|------------|
| Goal 1:<br>Name the Goal<br><i>Total Goal Budget (\$XX,XXX)</i> | 1.1    |               |                           |            |
|   | 1.2    |               |                           |            |
|   | 1.3    |               |                           |            |
|   | 1.4    |               |                           |            |
| Goal 2:<br>Name the Goal<br><i>Total Goal Budget (\$XX,XXX)</i> | 2.1    |               |                           |            |
|   | 2.2    |               |                           |            |
|   | 2.3    |               |                           |            |

3. **Roles and Responsibilities of project participants for the applicant and any partners** - If the project is not a partnership, list the personnel who are going to work on the project and what they will be doing. If the proposed project includes one or more formal partners, describe their roles within agencies or tribes.
  
4. **Summarized qualifications of the project manager and other key**

**personnel** – Applicants must summarize the qualifications of the project manager and other key personnel who would perform the proposed work in the project narrative. Applicants may include resumes and biographical sketches as attachments but must include a summary in the narrative and indicate these items are attached. In the case an applicant is proposing to hire key personnel, the applicant should submit a statement of knowledge skills, abilities and qualifications as an attachment, and summarize this in the project narrative.

5. **Programmatic Involvement** – Applicants must describe programmatic involvement in the development and management of the project, including a listing of programmatic participants, positions and roles in the project. 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. Any project that is not purely technical must have substantive program participation. Make sure that you describe that contribution.
6. **Commitment to Reuse**– Applicants should not spend grant funds on tools already developed and available for EN partner use. Partners must clearly identify which existing project-appropriate tools and shared services will be incorporated into the project. The proposal must also explicitly commit to registering tools they develop in grant-funded projects.
7. **Budget Narrative** – Applicants should identify budget amounts for each goal and each output. Occasionally EPA will decide not to fund an individual goal. This may happen when a proposed goal is not consistent with EN/EE priorities or when EPA decides the proposal is not adequate for other reasons. Because each goal represents a freestanding project, EPA may decide to fund other proposed goals in the same proposal. Knowing what each proposed project will cost makes it possible for EPA to adjust the total budget in these cases. Applicants should explain why the proposed budget is appropriate, how it relates to budget estimates in this notice, explain any indirect cost calculations, and include any other pertinent budgetary information.
8. **Statement summarizing past performance** – Applicants should identify any EPA assistance agreements similar in size, scope, and relevance to the proposed agreement performed in the last 3 years. Applicants with no past performance (have never received an EN grant) must indicate this in their project narrative. Applicants should also identify any tools, resources, services, and/or dataflows they have registered in RCS, produced by EN grant funds since 2011.

## 2. Grant Forms

- a. **Application for Federal Assistance (SF 424),**  
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.
  - b. **Budget Information for Non-Construction Programs (SF-424A)**  
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.)
  - c. **Assurances for Non-Construction Program (SF-424B)**  
Complete the form.
  - d. **Key Contacts Form (EPA Form 5700-54)**  
Complete the form.
  - e. **Pre-Award Compliance Review Report (EPA Form 4700-4)**  
Complete the form.
3. **Budget Narrative Attachment Form – for Submitting the Detailed Itemized Budget**  
Applicants should describe *both the total project budget and the costs associated with each major goal* in a detailed itemized budget. This budget is required to help the grants office process the award, should the project be selected. **This budget should not be included in the project narrative.** 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 regional and area Exchange Network conferences.
  - d. Equipment – Identify each item of equipment to be purchased that 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. This is also where Subawards should be allocated. Recognize that there is a difference between a procurement (goods and services) and a subaward (performing part of the project).
- 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 applicant’s 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.
- j. Light Food Refreshments- If any light and/or refreshments are planning to be purchased with federal funds or matching funds, then a separate itemized breakout must be provided to determine whether or not the cost is considered reasonable and necessary.

**Additional Attachments, if applicable:**

**4. Other Attachment Form – for submitting the following documents, if applicable**

**a. Personnel Attachments:**

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. (For proposals seeking funding who propose to use funding from this grant to hire key personnel and/or the project manager only -- submit a statement of knowledge, skills, abilities, and qualifications from the recruitment package for that position.)

**b. 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.

c. **Additional Information for Inter-Tribal Consortium:**

An inter-tribal consortium applying for an 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.

d. **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 \$500,000.

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 partnerships and are limited to the \$250,000 maximum funding for a single-jurisdiction grant and are not eligible for EE assistance agreements.

e. **List of Exchange Network Assistance Agreements:**

Provide a list of previously awarded assistance agreements.

## **Grants.gov Submission Instructions**

### **Requirements to Submit Through Grants.gov and Limited Exception Procedures:**

Applicants, except as noted below, must apply electronically through Grants.gov under this funding opportunity based on the grants.gov instructions in this announcement. If an applicant does not have the technical capability to apply electronically through grants.gov because of limited or no internet access which prevents them from being able to upload the required application materials to Grants.gov, the applicant must contact OGDWaivers@epa.gov or the address listed below in writing (e.g., by hard copy, email) at least 15 calendar days prior to the submission deadline under this announcement to request approval to submit their application materials through an alternate method.

Mailing Address:  
OGD Waivers  
c/o Jessica Durand  
USEPA Headquarters  
William Jefferson Clinton Building  
1200 Pennsylvania Ave., N. W.  
Mail Code: 3903R

Washington, DC 20460

Courier Address:  
OGD Waivers  
c/o Jessica Durand  
Ronald Reagan Building  
1300 Pennsylvania Ave., N.W.  
Rm # 51278  
Washington, DC 20004

In the request, the applicant must include the following information:

- Funding Opportunity Number (FON)
- Organization Name and Unique Entity Identifier (e.g., DUNS)
- Organization's Contact Information (email address and phone number)
- Explanation of how they lack the technical capability to apply electronically through Grants.gov because of 1) limited internet access or 2) no internet access which prevents them from being able to upload the required application materials through Grants.gov.

EPA will only consider alternate submission exception requests based on the two reasons stated above and will timely respond to the request -- all other requests will be denied. If an alternate submission method is approved, the applicant will receive documentation of this approval and further instructions on how to apply under this announcement. Applicants will be required to submit the documentation of approval with any initial application submitted under the alternative method. In addition, any submittal through an alternative method must comply with all applicable requirements and deadlines in the announcement including the submission deadline and requirements regarding proposal content and page limits (although the documentation of approval of an alternate submission method will not count against any page limits).

If an exception is granted, it is valid for submissions to EPA for the remainder of the entire calendar year in which the exception was approved and can be used to justify alternative submission methods for application submissions made through December 31 of the calendar year in which the exception was approved (e.g., if the exception was approved on March 1, 2018, it is valid for any competitive or non-competitive application submission to EPA through December 31, 2018). Applicants need only request an exception once in a calendar year and all exceptions will expire on December 31 of that calendar year. Applicants must request a new exception from required electronic submission through Grants.gov for submissions for any succeeding calendar year. For example, if there is a competitive opportunity issued on December 1, 2018 with a submission deadline of January 15, 2019, the applicant would need a new exception to submit through alternative methods beginning January 1, 2019. Please note that the process described in this section is only for requesting alternate submission methods. All other inquiries about this announcement must be directed to the Agency Contact listed in Section VII of the announcement. Queries or requests submitted to the email address identified above for any reason other than to request an alternate submission method will not be acknowledged or answered.

**Submission Instructions:**

The electronic submission of your application must be made by an official representative of your institution who is registered with Grants.gov and is authorized to sign applications for Federal assistance. For more information on the registration requirements that must be completed in order to submit an application through grants.gov, go to Grants.gov and click on "Applicants" on the top of the page and then go to the "Get Registered" link on the page. If your organization is not currently registered with Grants.gov, please encourage your office to designate an Authorized Organization Representative (AOR) and ask that individual to begin the registration process as soon as possible. Please note that the registration process also requires that your organization have a Unique Entity Identifier (e.g. DUNS number) and a current registration with the System for Award Management (SAM) and the process of obtaining both could take a month or more. Applicants must ensure that all registration requirements are met in order to apply for this opportunity through grants.gov and should ensure that all such requirements have been met well in advance of the submission deadline. Registration on grants.gov, SAM.gov, and DUNS number assignment is FREE.

Applicants need to ensure that the AOR who submits the application through Grants.gov and whose Unique Entity Identifier (e.g., DUNS number) is listed on the application is an AOR for the applicant listed on the application. Additionally, the DUNS number listed on the application must be registered to the applicant organization's SAM account. If not, the application may be deemed ineligible.

To begin the application process under this grant announcement, go to [Grants.gov](https://www.grants.gov) and click on "Applicants" on the top of the page and then "Apply for Grants" from the dropdown menu and then follow the instructions accordingly. Please note: To apply through Grants.gov, you must use Adobe Reader software and download the compatible Adobe Reader version. For more information about Adobe Reader, to verify compatibility, or to download the free software, please visit [Adobe Reader Compatibility Information on Grants.gov](#)

You may also be able to access the application package for this announcement by searching for the opportunity on Grants.gov. Go to [Grants.gov](https://www.grants.gov) and then click on "Search Grants" at the top of the page and enter the Funding Opportunity Number, EPA-OEI-19-01, or the CFDA number that applies to the announcement (CFDA 66.608), in the appropriate field and click the Search button.

Please Note: All applications must now be submitted through Grants.gov using the "Workspace" feature. Information on the Workspace feature can be found at the [Grants.gov Workspace Overview Page](#).

**Application Submission Deadline:**

Your organization's AOR must submit your complete application package electronically to EPA through Grants.gov no later than **April 8, 2019, 11:59 PM ET**. Please allow for enough time to successfully submit your application and allow for unexpected errors that may require you to resubmit.

Please submit *all* of the application materials described in the first part of this appendix using the Grants.gov application package accessed using the instructions above.

Applications submitted through grants.gov will be time and 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 Edward Mixon, at 202-566-2142 and [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov). Failure to do so may result in your application not being reviewed.

**Technical Issues with Submission:**

Once the application package has been completed, the "Submit" button should be enabled. If the "Submit" button is not active, please call Grants.gov for assistance at 1-800-518-4726. Applicants who are outside the U.S. at the time of submittal and are not able to access the toll-free number may reach a Grants.gov representative by calling 606-545-5035. Applicants should save the completed application package with two different file names before providing it to the AOR to avoid having to re-create the package should submission problems be experienced, or a revised application needs to be submitted.

Submitting the application. The application package must be transferred to Grants.gov by an AOR. The AOR should close all other software before attempting to submit the application package. Click the "submit" button of the application package. Your Internet browser will launch, and a sign-in page will appear. **Note: Minor problems are not uncommon with transfers to Grants.gov. It is essential to allow enough time to ensure that your application is submitted to Grants.gov BEFORE the due date identified in Section IV of the solicitation.** The Grants.gov support desk operates 24 hours a day, seven days a week, except Federal Holidays.

A successful transfer will end with an on-screen acknowledgement. For documentation purposes, print or screen capture this acknowledgement. If a submission problem occurs, reboot the computer turning the power off may be necessary and re-attempt the submission.

Note: Grants.gov issues a "case number" upon a request for assistance.

Transmission Difficulties. If transmission difficulties that result in a late transmission, no transmission, or rejection of the transmitted application are experienced, and following the above instructions do not resolve the problem so that the application is submitted to [Grants.gov](http://Grants.gov) by the deadline date and time, follow the guidance below. The Agency will make a decision concerning acceptance of each late submission on a case-by-case basis. All emails, as described below, are to be sent to [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov) with the FON in the subject line. If you are unable to email, contact Edward Mixon at 202-566-2142. Be aware that EPA will only consider accepting applications that were unable to transmit due to [Grants.gov](http://Grants.gov) or relevant www.Sam.gov system issues or for unforeseen exigent circumstances, such as extreme weather interfering with internet access. Failure of an applicant to submit timely because they did not properly or timely register in SAM.gov or Grants.gov is not an acceptable reason to justify acceptance of a late submittal.

- a. If you are experiencing problems resulting in an inability to upload the application to Grants.gov, it is essential to call [Grants.gov](http://Grants.gov) for assistance at 1-800-518-4726 before the application deadline. Applicants who are outside the U.S. at the time of submittal and are not able to access the toll-free number may reach a Grants.gov representative by calling 606-545-5035. Be sure to obtain a case number from Grants.gov. If the problems stem from unforeseen exigent circumstances unrelated to Grants.gov, such as extreme weather interfering with internet access, contact Edward Mixon, at 202-566-2142 and [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov).

- b. Unsuccessful transfer of the application package: If a successful transfer of the application cannot be accomplished even with assistance from Grants.gov due to electronic submission system issues or unforeseen exigent circumstances, and you have already attempted to resolve the issue by contacting Grants.gov, send an email message to [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov) prior to the application deadline. The email message must document the problem and include the Grants.gov case number as well as the entire application in PDF format as an attachment.
- c. Grants.gov rejection of the application package: If a notification is received from Grants.gov stating that the application has been rejected for reasons other than late submittal and it is too late to reapply, promptly send an email to [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov) with the FON in the subject line within one business day of the closing date of this solicitation. The email should include any materials provided by Grants.gov and attach the entire application in PDF format.

*Please note that successful submission through Grants.gov or via email does not necessarily mean your application is eligible for award.*

## Suggested Cover Letter Template

*[Organizational Letterhead]*

Wendy Blake-Coleman  
U.S. Environmental Protection Agency  
Office of Environmental Information  
1200 Pennsylvania Ave., NW, Mail Code 2824-T  
Washington, DC 20460

Dear Mrs. Blake-Coleman:

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, PPG]**, entitled [project name], under the FY 2019 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 F

## 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/forms/forms.htm>. All applicable forms and documents must be submitted and validated within grants.gov or, for applicants with a waiver, submitted via a method specified in the waiver **at or before 11:59 pm on April 8, 2019**. To confirm applicant eligibility and/or applicability of any of the listed forms or documents below, please contact Edward Mixon at (202) 566-2142 or [mixon.edward@epa.gov](mailto:mixon.edward@epa.gov).

- Cover Letter
  - Recipient Information
  - Indicate Exchange Network priorities
  - 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
- Project Narrative
  - No more than 10-pages, single-spaced.
  - Must address Evaluation Criteria [Section V-A] and link activities to environmental outcomes.
- Standard Form 424, “Applications for Federal Assistance”
- Standard Form 424A, “Budget Information for Non-Construction Programs”
- Standard Form 424B, “Assurances for Non-Construction Programs”
- Standard Form 5700-54, “Key Contacts Form”
- EPA Form 4700-4, “Preaward Compliance Review Report”
- 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.
- Negotiated Indirect Cost Agreement, if applicable
- Personnel Attachments, if applicable
- 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 EN Assistance Agreements, if applicable

# Appendix G

## Definitions

### **Application Programming Interface (API)**

When used in the context of web development, an API is a set of Hypertext Transfer Protocol (HTTP) request messages, along with a definition of the structure of response messages, which is usually in an Extensible Markup Language (XML) or JavaScript Object Notation (JSON) format. The term web API is virtually synonymous with the term web service.

### **Central Data Exchange (CDX)**

CDX is the gateway through which environmental data enters the Agency and is EPA's point of presence on the Exchange Network and for many EPA shared services. CDX provides the capability for submitters to access their data using 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.

### **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 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.

### **Cross-Media Electronic Reporting Rule (CROMERR)**

Rule that sets requirements – including performance-based, technology-neutral standards for electronic reporting systems – for states, tribes and local governments implementing electronic reporting under their approved EPA-authorized programs. CROMERR requires that states, tribes, and local governments amend or revise their EPA-authorized program(s) to receive reports from regulated facilities under those programs. Both new and existing electronic reporting programs require EPA approval, and the regulation establishes a process for applying for and obtaining such approval. CROMERR also addresses electronic reporting directly to EPA.

### **Data Access Services (Publishing)**

Network publishing is a term that refers to using Exchange Network technologies, services and specifications for web services to make data available to Network users by querying nodes and returning environmental data in the form of XML or (Json) 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 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/knowledge-base/>

## **Development, Modernization, and Enhancement (DME)**

DME refers to projects and activities leading to new IT assets/systems, as well as projects and activities that change or modify existing IT assets to substantively improve capability or performance. DME includes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from or significantly greater than those originally intended.

## **E-Enterprise**

E-Enterprise is a joint initiative of states, tribes and EPA to expand access to environmental monitoring data, streamline regulatory information collections, and achieve performance goals for regulatory burden reduction and cost avoidance. The E-Enterprise program will be institutionalized through policies, supported by shared services, coordinated with governmental partners, and overseen by intra-agency and interagency governance structures.

## **Exchange Network Discovery Services (ENDS)**

The Exchange Network Discovery Services (ENDS) is a set of directory services for all nodes in Exchange Network. This central catalog approach supports the automated consumption of services using tools such as the EN Browser and the EN Services Center via an XML document that contains the service metadata. ENDS automate both the discovery and retrieval of service metadata for the Network and supports the Administration and export of node services via the web and web Service interfaces. ENDS is composed of two main components: the first, is a set of services that allows EN partners to submit and query the service descriptions stored in the ENDS repository; the second, is a web interface that simplifies the data entry of service metadata into ENDS. The services all accept or return a common XML schema. This XML schema provides a structured, standard way to represent EN services across all EN Nodes. A second ENDS schema defines the Data Element Description Language (DEDL) that can be used by individual Exchange Network nodes for describing acceptable parameters and valid allowable values and making them available as services. DEDL further enhances the ability for EN partners to build rich, user friendly applications using EN services. More information on ENDS is available at <http://www.exchangenetwork.net/exchange-network-discovery-service-ends/>.

## **Exchange Network Services Center (ENSC)**

The ENSC is a browser-based portal that provides Exchange Network partners access to a broad range of Network services. Among the most notable features of the Service Center is the ability to submit data to EPA systems, monitor the status of data submissions, and access a variety of Network administrative data. Essentially, the ENSC offers most of the functionality of a Node, but it is not automated and cannot respond

to data requests. It simplifies access to Network services because it requires no software to install or configure. It can be accessed from any computer with a browser and internet access. The ENSC is available at <https://enservices.epa.gov/login.aspx>.

### **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 website at <http://www.exchangenetwork.net>.

### **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.

### **Goal**

In EPA grant terminology, a goal is a self-contained project (e.g., implementing WQX, implementing an electronic reporting system using shared CROMERR services). This differs from the more common definition of goal—a desired end. An Exchange Network grant proposal must list one or more goals.

## **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.

## **Maintenance**

Maintenance is the activity necessary to keep an IT asset functioning as designed. Maintenance costs include costs needed to sustain an IT asset at the current capability and performance levels including: corrective hardware/software, voice and data communications maintenance; replacement of damaged or obsolete IT equipment; and associated overhead costs. Examples of maintenance projects include operating system upgrades, technology refreshes, and security patch implementations. **Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from or significantly greater than those originally intended.**

## **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.

## **Network Authorization and Authentication Services (NAAS)**

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. Freely available Node software is available at <http://www.exchangenetwork.net/exchange-network-products/>. Specifications, protocols, tools, code and documentation for building a functioning Exchange Network Node are available at <http://www.exchangenetwork.net/knowledge-base/>.

## **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 website 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)

## **Operations**

Operations is the day-to-day management of an asset in the production environment and include activities to operate data centers, help desks, operational centers, telecommunication centers, and end user support services. Operations costs include the expenses associated with an IT asset that is in the production environment to sustain an IT asset at the current capability and performance levels including: Federal and contracted labor costs; and costs for the disposal of an asset.

## **Operations and Maintenance (O&M)**

Operations and Maintenance is the phase of an asset in which the asset is in operations and produces the same product or provides a repetitive service. Operations and Maintenance (O&M) is synonymous with “steady state.”

## **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, may be quantitative or qualitative, 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.

## **Phase 1 (of the Exchange Network)**

Phase 1 of the Exchange Network is a term that the Network community uses to identify the Ten National and Priority System Flows identified in this Solicitation Notice. The flows are: Air Quality System (AQS); Emissions Inventory System (EIS); Integrated Compliance Information System – National Pollution Discharge Elimination System (ICIS-NPDES), including Net Discharge Monitoring Reports (NetDMR); Resource Conservation and Recovery Act Information System (RCRAinfo); 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).

## **Phase 2 (of the Exchange Network)**

Phase 2 of the Exchange Network is the term that the Network community uses to refer to the second phase of Network development. Phase 1 focused on development of the Network infrastructure and implementation of data reporting to EPA using the Network. In Phase 2, the Network community will expand Network publishing (data owners making their information available to other partners on the Network using automated services), develop applications (both mobile and desktop) and websites (including public sites) that analyze and/or display data accessed using Exchange Network services, expand the use of the Network for data reporting to additional EPA data systems, expand intra-partner data sharing including programs where EPA does not have a central data store (e.g., institutional controls for cleanup sites) and develop new technologies that make using the Network easier and less costly.

## **Representational State Transfer (REST) / RESTful Web Service**

Software system designed to support machine-to-machine interaction over a network. Representational State Transfer (REST) services do not require XML, SOAP, or WSDL (Web Services Description Language) but rely on the exchange of requests and responses between the resources and on their corresponding states. REST-style services facilitate the aggregation of services into more complex services and the development of mashups. REST services are usually accessed via HTTP (like a web URL or link). Guidance on implementing REST services for the Exchange Network is available at <http://www.exchangenetwork.net/rest-guidance/>.

## **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 on the Exchange Network website at <http://www.exchangenetwork.net/knowledge-base/>.

## **Shared Service**

A shared service, as defined by the Shared Services Integrated Project Team in 2016, is a service that is:

- Developed jointly.
- Usable by multiple partners/users.
- Managed centrally, meaning that some entity is overseeing the ongoing evolution and maintenance of the service. The entity might be a state, tribe, territory, EPA, or some other interested party.
- Addresses a common need/concern.

## **Simple Object Access Protocol (SOAP)**

SOAP is a protocol specification for exchanging structured information for the implementation of web services on a computer network. It allows machines to interoperate in a loosely coupled manner using simple standard messages over the Hypertext Transfer Protocol (HTTP or others) and uses Extensible Markup Language (XML) as the mechanisms for information exchange.

**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.

**Widget**

A software tool that uses a small (smaller than a page) graphical interface to provide a function or service and that can be added to a web application or to a web page.