



# **Fiscal Year 2020 National Environmental Information Exchange Network Grant Program**

## **Solicitation Notice**

**February 4, 2020**

**Amended March 20, 2020**

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

# Fiscal Year 2020 National Environmental Information Exchange Network Grant Program Solicitation Notice

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# Fiscal Year 2020 National Environmental Information Exchange Network Grant Program Solicitation Notice

## Overview Information

### Agency Name and Office:

U.S. Environmental Protection Agency  
Office of Mission Support – Environmental Information

### Funding Opportunity Title:

FY 2020 National Environmental Information Exchange Network Grant Program

### Announcement Type:

Request for Applications

### Notice Funding Opportunity Number:

EPA-OMS-20-01

### Catalog of Federal Domestic Assistance (CFDA) Number:

66.608

### Information Dates:

Friday, April 10, 2020 – Deadline for submitting applications to EPA

Thursday, October 1, 2020 – Period of performance start date

## 1. Funding Opportunity Description

The EPA Exchange Network Grant Program is soliciting project applications using 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 eligible for funding through the FY 2020 EN Grant Program competitive grant process.

## I-A. Background

The Exchange Network (EN) was launched in 2002 as an inter-governmental, collaborative partnership of EPA, states, territories, and tribes to foster better environmental management and decision-making through increased access to timely, high quality environmental information. This was achieved through a standards-based approach to facilitate environmental data sharing among EPA, states, tribes and territories. The framework adopted 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 uses a shared governance model to streamline business processes and leverage technology. Through this model, environmental leaders from EPA, states, tribes and territories work to deliver better environmental results, often with lower costs and less burden, for the benefit of government agencies, the regulated community, and the public.

Today, through EE, environmental agencies are streamlining processes and reimagining ways to use technology to achieve better environmental outcomes and provide more responsive services to the regulated community and the public.

The governance bodies of the EN and EE efforts merged in 2015 and governance activities are referred to as EE/EN governance. This formal integration ensures that a single management board and [operations](#) team support the goals and principles of both efforts under the strategic direction of the E-Enterprise Leadership Council (EELC). The EN remains the key mechanism for implementing the technological aspects of business processes streamlining and reengineering as 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, focused on expanding the availability of published data and making the process of sharing data more efficient. This was 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.

With the release of the E-Enterprise Digital Strategy (EEDS), the EN is transitioning into Phase 3 of its implementation. The EEDS was commissioned by the EELC to help environmental agencies coordinate and share their investments in new technologies to deliver better environmental protection services. The EEDS is a living document, built on the foundation laid by the EN, that will evolve in response to changing technologies and programmatic needs. It also serves as a high-level framework for an environmental enterprise that is Customer-Centric, Information-Centric, and based on Shared Platforms and Services. The most current version of the EEDS is available at <https://e-enterprisefortheenvironment.net/wp-content/uploads/2019/08/Interim-E-Enterprise-Digital-Strategy-V-2.0.pdf> or <https://e-enterprisefortheenvironment.net/our-projects/digital-strategy/>.

The EEDS will be followed by:

- A Business Case that presents the EELC's vision for the future of environmental protection and the benefits of pursuing digital transformation collaboratively.
- A detailed Architecture Plan that will describe the suite of services and standards needed to achieve the future vision.
- An [API](#) Framework that describes new standards, guidance, and a management lifecycle for EE and EN APIs and services.
- A Roadmap that lays out timelines and steps for implementing the Digital Strategy.
- Practical guidance that agencies can give to developers and contractors to promote more useful, shareable, and interoperable technology projects.

The roadmap, slated for FY 2020, will set specific implementation steps, timelines, and responsibilities along the path to a more responsive and efficient enterprise. Paired with a forthcoming architecture, the roadmap will clarify:

- The portfolio and timing of EE services.
- How to connect with those services and build software that is interoperable.
- How to plan technology investments supported by a broadly shared vision.
- How to design and manage interoperable APIs that conform to new EE/EN standards and best practices.

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

FY 2020 is the 19th year EPA will award competitive funding to eligible partners for projects through the Exchange Network Grant Program. Between FY 2002 and FY 2019, EPA provided approximately \$236 million for state, tribal, and territorial awards and associated program support through the grant program. As of October 1, 2019, all 50 states and the District of Columbia, 81 tribes, and 5 territories have received EN grants. 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. For descriptions of previously awarded EN Grants, please see: <https://www.epa.gov/exchangenetwork/previous-exchange-network-grant-projects>.

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

This Exchange Network Grant Program Solicitation Notice requests states, tribes, [inter-tribal consortia](#), and territories submit applications with goal(s) supporting the EN priorities set forth by EE/EN governance. The priorities are found in [Section I-E](#) and explained further in Appendices [A](#), [B](#), and [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-A](#).

**Applicants are responsible for reading and complying with the instructions and criteria described in this solicitation.** Please note that extensive application guidance, including tools such as optional templates and a completion checklist, are available in [Appendix E](#), [Appendix F](#), [Appendix G](#), [Appendix H](#), and [Appendix I](#).

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

The activities to be funded under this announcement are intended to support Goal 3: Greater Certainty, Compliance, and Effectiveness, Objective 3.4: ‘Streamline and Modernize’ of the EPA’s FY 2018-22 Strategic Plan.

Applicants must explicitly state their support of Goal 3, Objective 3.4: ‘Streamline and Modernize’ within their [project narrative](#) and identify language under this objective which links to their proposal’s project outputs. Applicants are encouraged to read the full text of Goal 3, Objective 3.4 under the EPA Strategic Plan, available at: <https://www.epa.gov/planandbudget/fy-2018-2022-epa-strategic-plan>. Please note that FY20 Exchange Network grant applications are not required to reflect all aspects of this strategic objective, nor are they restricted to permitting projects.

In addition to Goal 3, Objective 3.4, awards may also support other strategic goals and objectives of the EPA strategic plan such as:

- Goal 1: A Cleaner, Healthier Environment
  - Objective 1.1 Improve Air Quality
  - Objective 1.2 Provide for Clean and Safe Water
  - Objective 1.3 Revitalize Land and Prevent Contamination
  - Objective 1.4 Ensure Safety of Chemicals in the Marketplace
  
- Goal 2: More Effective Partnerships
  - Objective 2.1 Enhance Shared Accountability
  - Objective 2.2 Increase Transparency and Public Participation
  
- Goal 3: Greater Certainty, Compliance, and Effectiveness
  - Objective 3.2 Create Consistency and Certainty
  - Objective 3.5 Improve Efficiency and Effectiveness

EPA 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](#)).

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.

## I-E. Exchange Network Program Priorities

This section presents specific funding priorities for the FY 2020 EN Grants Program. The priorities stated here are aligned with the priorities of the EE/EN governance bodies. There are five priorities for the FY 2020 EPA Exchange Network Grant Program:

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

EN grant applicants can apply under one or multiple Exchange Network priorities within a single application. Applicants are encouraged to specifically state which EN priorit(ies) they are applying under within the 'Project Description' section of their [project narrative](#).

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 organized by the priority it supports and labelled as an individual opportunity, a partnership opportunity, or both. Applicants applying under an **individual opportunity may request up to \$200,000** in funding. Applicants applying under a **partnership opportunity may request funds up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

Additionally, EPA will only consider applications for partnership projects if the project's work is intended to be nationally scalable, to give these projects the best opportunity to succeed on the national/regional scale. Applicants without partners should apply for the individual opportunities, which may result in scalable products, but are usually focused on activities supporting 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 EE/EN partners. These services enable individual organizations to avoid costs associated with building, securing and maintaining the data and technology infrastructure supporting 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)
- [Enterprise Identity Bridge \(Identity Management\)](#) (Partnership Opportunity)
- [Shared CROMERR Services](#) (Individual Opportunity)
- [Substance Registry Service \(SRS\)](#) (Individual Opportunity)

Applicants applying under an individual opportunity may request funds **up to \$200,000**.

Applicants applying under a partnership opportunity may request funds **up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

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

- [E-Enterprise Portal](#) (Individual/Partnership Opportunity)
- [Law and Regulations Service \(LRS\)](#) (Partnership Opportunity)

Applicants applying under an individual opportunity may request funds **up to \$200,000**.

Applicants applying under a partnership opportunity may request funds **up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

### 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 EE/EN 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 EE/EN partners to identify common processes in e-Reporting and e-Permitting spanning 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 improving the exchange of permitting information.
- Proposing the establishment of an e-Reporting/e-Permitting team of EPA and partners under the EE/EN governance to address process requirements and common approaches resulting in, or informing the development of, shared services.
- Develop and test minimally viable products automating 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 a 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 application 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 outlining 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.

Applicants applying under this partnership opportunity may request funds **up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

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

### **1) 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, applications 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 2020 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 \(ICIS-Air\)](#) [replaced Air Facility System]
- [Radon Data Exchange](#)
- [Safe Drinking Water Information System \(SDWIS\)](#)
- [Drinking Water State Revolving Fund and Clean Water State Revolving Fund Database](#)
- [Underground Injection Control \(UIC\)](#) [Data Availability Projects]

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

Applicants establishing new data flows should consider reusing existing foundational services where appropriate (i.e. [Virtual Exchange Services](#) or [Shared CROMERR Services](#)) as many of these services will reduce the cost and time required to implement a new exchange. Additionally, an applicant's adherence to the EN principle of 'build once, reuse many times' is one of the many factors that comprises a grant application's score (see [Section V-A Evaluation Criteria](#)).

Applicants applying under an individual opportunity may request funds **up to \$200,000**.

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

### **1) 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, delivering automated access to environmental data continues to be a priority in FY 2020. These tools include, but are not limited to:

- [APIs](#) and microservices for data access – to include accessing records, querying, filtering, aggregating and other [data access services](#).
- Desktop, laptop and tablet/smartphone applications providing access to and analyze/display environmental data.
- Websites providing users access to data sets and a range of analytical and display tools.
- Dashboards providing real time program status information to program managers and executives.
- All applications, whether desktop, mobile, web app, or dashboards, should follow an API-first design methodology.

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 supporting cross-program data integration and supporting 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 supporting EPA's open data and transparency goals <https://www.epa.gov/open> as well as emerging Federal Open Data goals under the Foundations for Evidence-Based Policymaking Act and Federal Data Strategy, and serving 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 meet the applicant's business needs and how the project complies with Exchange Network guidance and standards. As part of the ongoing development of the E-Enterprise Digital Strategy, EE/EN governance is actively developing an API framework that will include guidance, standards, and tools for developers of APIs and other services. Recipients of FY2020 grants should regularly consult with the EE/EN websites to ensure that their work is consistent with this new framework, guidance, and standards.

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 include appropriate [metadata](#), conforming to Project Open Data Metadata Schema 1.1 <https://project-open-data.cio.gov/v1.1/schema/> and a data dictionary with [data element](#) descriptions. 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 supporting 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 current technical standards and design guidance are available on the EN website:

<http://www.exchangenetwork.net/knowledge-base>.

Applicants applying under this partnership opportunity may request funds **up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

## **2) 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 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/what-we-do/manage-federal-geospatial-resources/a-16-portfolio-management/ngda-themes-and-datasets>) to ascertain if there are any additional publishing opportunities for these data sets supporting the mission goals of multiple federal, state and local agencies. Data should be published as open, standards compliant data services 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](http://data.gov) and [geoplatform.gov](http://geoplatform.gov).

Applicants applying under this individual opportunity may request funds **up to \$200,000**.

## **Funding Opportunity under Priority 4: Improve Environmental Management through Advanced Data Monitoring & Transmittal Processes**

### **1) Continuous Water Quality Monitoring (Partnership Opportunity)**

Continuous water quality monitoring (monitoring performed with a sensor measuring 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 in the E-Enterprise and Exchange Network Digital Strategy. Partners should consider approaches to make water quality sensor data available via a publishing service and make it searchable from a central portal 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/2017-01/documents/iwn\\_lessonslearned\\_final\\_201612.pdf](https://www.epa.gov/sites/production/files/2017-01/documents/iwn_lessonslearned_final_201612.pdf).

The pilot project developed a demonstration portal 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](#) 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 completed a reusable component for publishing data using these standards. This component allows a partner to register their sensors and publish the data using the OGC standards. This ‘Data Appliance’ can be deployed as a containerized Docker implementation using open-source software. This component is currently available on EPA’s GitHub at: <https://github.com/USEPA/Interoperable-Watersheds-Network-Data-Appliance>. Partners are invited to make enhancements to this component and would be encouraged to share any of those enhancements back with EPA and the rest of the community. This component can 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.

Applicants applying under this partnership opportunity may request funds **up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

### **2) Field Data Collection Collaborative Pilots (Individual Opportunity)**

Grant applicants applying under this opportunity are requested to develop mobile applications built on technology-neutral services leveraging 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.

Applicants applying under an individual opportunity may request funds **up to \$200,000**.

**Funding Opportunity Under Priority 5:  
Augment the Information Management Capacity of EN Partners.**

**1) [Territory and Tribal Individual Capacity Building](#) (Individual Opportunity)**

Territories, tribes and [inter-tribal consortia](#) are eligible to apply for individual capacity building grants enhancing the applicant's environmental programs and the applicant's ability to manage and share environmental data electronically with EN partners and tribal citizens. Applications must identify [outputs](#) which will increase the applicant's ability to share environmental information electronically with EPA and other EN partners and tribal citizens. Examples of a priority data system include the development of a backend database and tools for entering/moving/checking the included data or implementing an intra-tribal data exchange. Applications 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**.

**2) [Territory and Tribal Collaborative Capacity Building](#) (Partnership Opportunity)**

Additionally, territories, tribes and [inter-tribal consortia](#) are eligible to apply for partnership grants which must include one or more partners. Additional eligibility requirements for partnership grants can be found in [Section III-D](#).

Applicants may apply for a collaborative capacity building grant **up to \$400,000**, if the partnership eligibility criteria outlined in [Section III-D](#) is met.

## I-F. Identifying Mentors

First time Exchange Network (EN) state, tribe, or territorial applicants are encouraged to consider identifying a mentor for their project. This is applicable to any new applicant, including [instrumentalities of a state](#), an agency/department within a state, tribe, or territory, and those applying under [Appendix C: Strengthening Partner Information Management Capabilities](#).

The identified mentor should be a previous EN grant recipient that has successfully completed an EN grant and that currently reports or publishes data for one or more environmental programs using their own [node](#) or [Virtual Exchange Services](#).

An applicant utilizing a mentor should include a commitment letter from the mentoring state, tribe, territory, or intertribal consortium (see [‘Additional Attachments’ on Page E-6](#)) in their application package. Applicants are also encouraged to identify their mentor within the project narrative (see project narrative section [‘Programmatic Involvement and Mentor Support’ on Page E-3](#).)

For assistance in finding an appropriate mentor, applicants should consider contacting the:

- Environmental Council of the States (ECOS)
  - Applicable to state or territorial grant applicants
  - Contact Kurt Rakouskas, Program Manager, at [krakouskas@ecos.org](mailto:krakouskas@ecos.org)
- Institute for Tribal Environmental Professionals (ITEP)
  - Applicable to tribal applicants
  - Mentoring resources are not limited to data exchange, but also include training in database development, data management and quality control that are intended to support the exchange of information
  - Contact Lydia Scheer, Project Manager, at [lydia.scheer@nau.edu](mailto:lydia.scheer@nau.edu)

Applicants may also find the following websites helpful for identifying potential mentors:

- E-Enterprise Community Inventory Platform ([EECIP](#))
  - [www.eecip.net](http://www.eecip.net)
  - 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.
- Previous Projects Page of the EN Website:
  - <https://www.epa.gov/exchangenetwork/previous-exchange-network-grant-projects>
  - This page of the EN grants website allows for potential applicants to view previously awarded EN grant projects, organized by fiscal year.

Please note that the identification of a mentor does not automatically qualify an applicant for an EN partnership grant. The applicant must meet the criteria established for partnership grants to qualify for the higher funding threshold (see [Section III-D](#)).

Please further note that **the identification of a mentor is not a requirement for any applicant, nor will it factor into the scoring of an applicant’s application.**



## II. Award Information

### II-A. General Information

In FY 2020, EPA expects to award about \$8,000,000 for 20-30 [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 covering an individual recipient's project cannot exceed \$200,000. EPA may make awards to collaborative, partnership assistance agreements. Budgets for these projects cannot exceed \$400,000.**

The standard period of performance for each project is three years.

EPA remains committed to 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.

### 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 not prejudicing any applicants or affecting 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 EM Grant Program as [grants](#) or [cooperative agreements](#), [in-kind services](#) or [direct funding](#), single applicant or partnership grants, or as part of the applicant's Performance Partnership Grants (PPG). EPA will consider an applicant's preferences when the Agency decides what type of assistance to award.

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 if a cooperative agreement is chosen. Federal involvement may include close monitoring of the recipient's performance, collaboration during the performance of the scope of work, and, 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. Applicants should also identify whether they are requesting direct funding, in-kind services, or a combination of the two in both their cover letter and project narrative (see [Page E-2](#)).

➤ **Single Applicant or Partnership Grants** (see Sections [III-D](#) and [IV-B](#))

Single applicant grants have a maximum funding threshold of \$200,000. Single applicant grant opportunities have been labeled as '**Individual Opportunity**' within [Section I-E](#) Exchange Network Program Priorities. EPA will consider the higher funding limit (\$400,000) for projects including one or more EN partner. Partnership grant opportunities have been labeled as '**Partnership Opportunity**' within [Section I-E](#) Exchange Network Program Priorities. EPA will not consider partnerships formed from Agencies within a single state, territorial or tribal government as eligible. Additional eligibility criteria for partnership applications can be found in [Section III-D](#).

➤ **Performance Partnership Grants (PPG)/Consolidated Grants**

In 1996, Congress authorized EPA to award Performance Partnership Grants (PPGs). As a result, States, certain interstate agencies, and tribes can now choose to combine two or more environmental program grants into a single PPG. Territories may also consolidate their various grants through a single Consolidated Grant. An applicant whose organization has an existing Performance Partnership Grant (PPG) with EPA may request that 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 new awards be incorporated into the CG. An applicant may also request to create a new PPG that includes 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. See [Section III-F](#) for additional information.

### III. Eligibility Information

The Catalog of Federal Domestic Assistance number for the Exchange Network Grant Program is 66.608 (<https://beta.sam.gov/>).

#### 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 Alaska Native Villages and [inter-tribal consortia](#) of federally recognized tribes (e.g., the Northwest Indian Fisheries Commission).

Other entities, such as regional air pollution control districts and some public universities may apply for assistance if they are agencies or [instrumentalities of a state](#) under applicable state laws. These entities, as well as other entities submitting applications asserting they are agencies or instrumentalities of a state, must provide with the application a letter from the appropriate state Attorney General certifying the applicant is an agency or instrumentality of the state. EPA will not consider an application not containing the required documentation.

EPA recognizes the delegation for some programs extends to local governments, which are responsible for reporting data to EPA. Local governments can demonstrate they are instrumentalities of the state by providing the documentation described in the preceding paragraph which demonstrates the applicant's eligibility to apply for Exchange Network grants. However, most local governments implementing 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 EN. 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.** Interested parties not meeting the eligibility criteria may consider partnering with eligible applicants (see examples below).

EPA will notify applicants ineligible for funding within 15 calendar days of the ineligibility determination. Applicants with questions about eligibility can contact Erika Beasley, at (202) 566-2530 or [beasley.erika@epa.gov](mailto:beasley.erika@epa.gov).

#### ***Examples of Eligible Applicants:***

- 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

### III-B. Threshold Eligibility Criteria for Applications

Applications from eligible applicants (see [Section III-A](#)) are only eligible for Exchange Network funding if they meet the requirements listed below. Applicants deemed ineligible for funding consideration as a result of the threshold eligibility review will be notified within 15 calendar days of the ineligibility determination.

1. An application includes goal(s) leading to completion of activities listed in the [Priorities Section \(I-E\)](#), additional activities identified in [Appendix A](#), [B](#), [C](#), or others consistent with EN priorities. Completion in the context of the EN means placing a data flow, data publishing, web service or other eligible projects into production.
2.
  - a. An application must substantially comply with the application submission instructions and requirements set forth in [Section IV](#) of this announcement or 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, an application must be submitted through [grants.gov](https://www.grants.gov) as stated in [Section IV](#) and [Appendix E](#) 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](#) and [Appendix E: Detailed Instructions for Submitting Applications through Grants.gov](#) of this announcement to ensure their application is timely submitted.

- c. An application submitted after the submission deadline will be considered late and deemed ineligible without further consideration unless the applicant can clearly demonstrate it was late due to EPA mishandling or because of technical problems associated with [grants.gov](https://www.grants.gov) or relevant [SAM.gov](https://www.sam.gov) system issues. An applicant's failure to submit their application on time through [grants.gov](https://www.grants.gov) because they did not allow enough time to properly register in [SAM.gov](https://www.sam.gov) or [grants.gov](https://www.grants.gov) will not be considered an acceptable reason to consider a late submission.

Applicants should receive email confirmation from [grants.gov](https://www.grants.gov) of their application's submission within two business days in the form of two emails:

- The first email, sent immediately after submission, will confirm receipt of the application by [grants.gov](https://www.grants.gov) and contain a tracking number.
- The second email will indicate the application has been successfully validated or rejected due to errors.

Applicants should also confirm receipt of their application with Erika Beasley at (202) 566-2530 or [beasley.erika@epa.gov](mailto:beasley.erika@epa.gov) as soon as possible after the submission deadline. Failure to do so may result in your application not being reviewed.

3. An application 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.

Applicants may submit more than one application; however, applicants are not eligible to receive more than one award under this opportunity.

4. Applicants may not have more than four active [Exchange Network assistance agreements](#) with the Agency as of **as of December 31, 2019**. 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, 2019.

*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 Quality 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 like 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.

### III-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 EN 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. All proposed project costs must be necessary and reasonable and in accordance with Federal guidelines. Determinations of allowable costs will be made in accordance with [2 CFR 200 Subpart E](#) - Cost Principles found in the Office of Management and Budget's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.

Applicants may not use EN funding for the following functions:

- **Construction costs**
- **Operations and maintenance** including previously developed or implemented EN projects
- **Workshops and Conferences** 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 physical nodes** – Instead, EPA makes available and encourages all applicants to request funds to use and configure the Agency's [VES](#)
- **Operations and maintenance of flows**, including minor updates to [schema](#) for an existing flow

If an application includes any ineligible tasks or activities (e.g., is not a priority, previously funded, falls under the above funding restrictions), 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-D. Eligibility Criteria for Exchange Network Partnership Applications**

EPA will consider the higher funding limit (\$400,000) for projects including one or more qualifying Exchange Network partners. The lead partner for a partnership application must demonstrate the project's support for the identified EN 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 \$200,000, the maximum funding for a single-jurisdiction grant for an EN application in FY20.

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

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

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

Funds for a grant awarded under this solicitation may be included in a PPG. Applicants should indicate in their application 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 including 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 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 applications must first be selected under the competitive grant process described in this announcement and, in accordance with 40 CFR 35.138, the workplan commitments 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 applications 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 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.

**Local governments are not eligible for PPGs.**

## IV. Application and Submission Information

Applicants for the FY 2020 Exchange Network Grant program must submit an application package to EPA through the [grants.gov](https://www.epa.gov/grants) website (or by an alternative method for those applicants with an approved Grants.gov Exception) on or before **Friday, April 10, 11:59 PM Eastern**.

[Appendix E](#) includes an overview of application package requirements, as well as an overview of required attachments and detailed submission instructions:

[E-2:](#) Cover Letter [*Mandatory; use 'Other Attachments Form' to submit*]

[E-2:](#) Project Narrative [*Mandatory*]

[E-5:](#) Additional Mandatory Grant Attachments

- Budget Narrative Attachment Form
- SF 424 Application for Federal Assistance
- SF 424A Budget Information for Non-Construction Programs
- EPA Form 5700-54 Key Contacts Form
- EPA Form 4700-4 Pre-Award Compliance Review Report

[E-6:](#) Additional Attachments [*use 'Other Attachments Form' to submit*], as applicable

- Personnel Attachments, including staff resumes
- Negotiated Indirect Cost Rate Agreement
- Additional Information for Inter-Tribal Consortium
- Formal Project Partners:
  - Roles and Responsibilities
  - Distribution of Funds
- List of Prior Exchange Network Assistance Agreements

[E-8:](#) Detailed Instructions for Submitting Applications

[Appendix F](#) provides a pre-submission checklist tool to help applicants avoid common application errors and to ensure a complete application package.

[Appendix G](#) provides an optional Cover Letter Template

[Appendix H](#) provides an optional Project Narrative Template

[Appendix I](#) provides an optional Budget Narrative Attachment Form Template

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**

Completed application packages as described in [Appendix E: Detailed Instructions for Submitting Applications through Grants.gov](#) must be sent electronically via [grants.gov](#) (or by an alternative method for those applicants with an approved Grants.gov Exception) no later than **Friday, April 10, 11:59 PM Eastern**.

#### **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](#).

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](#) describes in detail the evaluation criteria and process EPA will use to make selections under this Notice.

More information about Partnership Agreements can be found in [Section III-D](#).

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

Additional provisions applying 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 found at <https://www.epa.gov/grants/epa-solicitation-clauses> are important and applicants must review them when preparing applications 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, meeting 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](#).

*Note: 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.

Criteria	Points
<b>1. Project Outputs and Outcomes Leading to Environmental Results</b>	
<p><b>A. Supporting EPA Strategic Goals/Environmental Outcomes (5 Points)</b> Applicants will be evaluated based on the quality and extent to which their application states and describes how project <a href="#">outputs</a> will support EPA Strategic Goal 3.4 ‘Streamline and Modernize’, as well as additional EPA <a href="#">goals</a> (see <a href="#">Section I-D</a>), and the achievement of environmental results.</p>	<b>10</b>
<p><b>B. Tracking, Evaluating, and Measuring Progress (5 points)</b> Applicants will be evaluated based on the quality and extent to which their application describes and provides a plan for tracking, evaluating and measuring their progress toward the achieving expected project <a href="#">goals</a>.</p>	
<b>2. Project Feasibility and Approach</b>	
<p><b>A. Project Roles and Responsibilities (5 points)</b> Applicants will be evaluated based on the extent and quality to which their application clearly describes individual project roles and responsibilities for the applicant, any <a href="#">partners</a> (if applicable), and contractors (if applicable).</p>	<b>12</b>
<p><b>B. Programmatic Involvement (5 points)</b> For applications that involve the management of, transport of or access to programmatic data, applicants will be evaluated based on how well their application explains how the program owning the data needs to be involved in the proposed project.  For applications that do not include programmatic involvement, applicants will be evaluated based on how well their application explains why programmatic involvement is not necessary.</p>	

<p><b><i>Commitment to Registering New and/or Reused Resources (2 points)</i></b>  Applicants will be evaluated based on the extent to which their application <b>explicitly</b> commits to register any new resource they develop or the reuse of any existing EN resource(s) in their project.</p>	
<p><b>3. Exchange Network/E-Enterprise Priorities</b>  EPA will evaluate the consistency of proposed work in the application with EE/EN priorities and FY 2020 EN Grant Program Priorities (<a href="#">Section I-E</a>) as described below. More details on specific activities falling under each EN Grant Program priority are in Appendices <a href="#">A</a>, <a href="#">B</a>, and <a href="#">C</a>.</p>	
<p><b><i>A. Defining Project Goals and Outputs (5 points)</i></b>  Applicants will be evaluated based on the extent and quality to which their application clearly defines the project <a href="#">goals</a> and <a href="#">outputs</a>.</p>	
<p><b><i>B. Aligning Goals with EN Program Priorities (5 points)</i></b>  Applicants will be evaluated based on the extent and quality to which their application <a href="#">goals</a> support and describe their adherence to Exchange Network Grant Program Priorities (<a href="#">Section I-E</a>).</p>	
<p><b><i>C. Connecting Goals to Business and Administrative Needs (5 points)</i></b>  Applicants will be evaluated based on the extent and quality to which their application clearly connects each <a href="#">goal</a> to a business or administrative need of their organization.</p>	
<p><b><i>D. Demonstrating Technical Understanding (5 points)</i></b>  Applicants will be evaluated on the degree to which their application demonstrates the technical understanding to perform the proposed work.</p>	46
<p><b><i>E. Enhancing Data Sharing and Availability (8 points)</i></b>  Applicants will be evaluated on the extent to which their application demonstrates that it will enhance data sharing and data availability among Exchange Network partners and provides value to both the applicant and network partners.</p>	
<p><b><i>F. Commitment to Reuse Existing Resources (8 points)</i></b>  Applicants will be evaluated based on the extent and quality to which their application demonstrates a commitment to reuse existing resources by identifying and listing project-appropriate EN tools, resources, services, <a href="#">widgets</a> or applications developed by other EN partners which will be incorporated in the project.</p> <p>If none are identified, applicants will be evaluated on the extent to which their application clearly explains and justifies why reusable EN tools, resources and services cannot be used.</p>	

<p><b>G. Using and/or Developing Shared Services (up to 10 points)</b></p> <p>Applicants will be evaluated based on the extent to which the applicant plans to appropriately use or develop <a href="#">foundational shared services</a> in their project. Their application will be evaluated based on the scale below:</p> <ul style="list-style-type: none"> <li>➤ An applicant planning to appropriately use or develop <u>more than one foundational shared service</u> will receive up to <b>10 points</b>.</li> <li>➤ An applicant planning to appropriately use or develop <u>one foundational shared service</u> will receive up to <b>5 points</b>.</li> <li>➤ An applicant planning <u>not to use or develop a foundational shared service</u> in their project will receive <b>0 points</b>.</li> </ul> <p><i>Qualifying <a href="#">foundational shared services</a> are those listed in <a href="#">Appendix B</a>. If the applicant intends to use or develop a <a href="#">shared service</a> not explicitly listed in this appendix, but believes it should qualify, the applicant MUST identify the service and describe in detail how it is nationally-scalable to meet the needs of EN partners for it to be evaluated as such.</i></p>	
<b>4. Budget, Resources and Key Personnel</b>	
<p><b>A. Clearly Stating a Detailed Budget (5 points)</b></p> <p>Applicants will be evaluated on the extent to which their application budget is clearly stated and detailed, including budget amounts for each proposed <a href="#">goal</a> and <a href="#">output</a> in the project narrative.</p>	
<p><b>B. Qualifications of the Project Manager/Key Personnel (5 points)</b></p> <p>Applicants will be evaluated on how well their application demonstrates that the qualifications of the project manager and other key personnel 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 and/or contractors, their application should include a statement of skills, knowledge, abilities and qualifications from the position’s recruitment package.</p>	<b>20</b>
<p><b>C. Appropriate Budgeting (5 points)</b></p> <p>Applicants will be evaluated based on the extent to which the application budget provided is appropriate to accomplish project <a href="#">outputs</a> and <a href="#">goals</a>.</p> <p><i>Reviewers will evaluate appropriateness using the cost estimates provided in <a href="#">Appendix A</a> and <a href="#">B</a> and in consultation with <a href="#">Subject Matter Experts</a>.</i></p> <p><i>If an applicant’s goal and/or output cost(s) exceed the cost estimates provided in <a href="#">Appendix A</a> or <a href="#">B</a>, applicants should provide a clear and detailed rationale for how they estimated this cost and why these funds are necessary to accomplish the work. An equivalent cost rationale should also be included when an applicant is applying under an opportunity that does not include cost estimates.</i></p>	

<p><b><i>D. Managing Funds Efficiently and Timely (5 points)</i></b>  Applicants will be evaluated based on their approach, procedures and controls for ensuring 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 <a href="#">assistance agreements</a> based on:</p> <ul style="list-style-type: none"> <li>➤ The overall percentage of progress reports <u>submitted by their due date</u> as required in the terms and conditions of the prior assistance agreements <b>(4 Points)</b>.</li> <li>➤ Whether semi-annual reports as submitted under prior assistance agreements <u>historically demonstrate sufficient progress</u> toward achieving expected project results <b>(4 points)</b>.</li> <li>➤ Whether grantees with past <u>grants funded since 2011 have registered</u> tools, resources, services, data flows and/or the reuse of existing resources, in <a href="#">RCS/ENDS/SSRC</a>, per the <a href="#">terms and conditions of EN grants</a> <b>(4 Points)</b>.</li> </ul> <p>Please note in evaluating applicants under the Past Performance criteria, the Agency will consider the information provided by the applicant in the ‘Past Performance’ section of the project narrative (see <a href="#">Page E-4</a>) as well as semi-annual and technical report submissions. The Agency 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> <hr/> <p>If an applicant does not have any previous EN Grant Program assistance agreements and the application states this, they will receive a neutral score of <b>6 points</b>.</p> <p>If an applicant has no past performance with the Exchange Network Grant Program and does not explicitly state that this is their first EN grant, they will receive a score of <b>0 points</b>.</p>	<p><b>12</b></p>
<p><b>Total:</b></p>	<p><b>100</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 \(SME\)](#) to inform their evaluations. **The Subject Matter Experts are not reviewers and will not score applications.** The EPA review panels will submit comments and rankings and make funding recommendations to the selection official, the Principal Deputy Assistant Administrator of the Office of Mission Support (OMS) 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 supporting the stated Exchange Network priorities within this solicitation notice as long as doing so is consistent with the partial funding provision under [Section II-A: General Information](#).

### Other Evaluation Factors:

The Selection Official will make final funding decisions based on the rankings and preliminary recommendations of the EPA review panel as discussed above. In making the final funding decisions, the EPA Selection official may consider one or more of the following factors:

- Geographic distribution of funding.
- Excessive [unliquidated obligations \(ULOs\)](#).
- Selection of priority activities over other assistance activities.
- Ensuring participation in the Exchange Network by federally recognized Indian tribes, [inter-tribal consortia](#) and Alaska Native 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 may use the appropriate criterion below to determine if an applicant has excessive ULOs, unless the applicant can explain 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.

Period of Performance Milestone	Criteria – Unspent Balance as Percent of Awarded Funds
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 it will announce selection decisions in or around July 2020. EPA tentatively plans to issue the awards by September 30, 2020.

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

Additional provisions applying 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 found at <https://www.epa.gov/grants/epa-solicitation-clauses> are important and applicants must review them when preparing applications 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 July 2020. The notification will be sent to the original signer of the application or the project contact listed in the application. This notification, which informs the applicant its application 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 the Grants and Interagency Agreement Management Division (GIAMD). Applicants are cautioned 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 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, EN services, and other IT resources such as [widgets](#) and [RESTful web services](#). Please see [Appendix D](#) for further information on reuse and links to helpful resources. Applicants must also commit to register any newly developed resources and the reuse of existing resources. At the time of grant close-out, EN grantees should work with their [Regional Exchange Network Coordinator](#) (RENC) to complete this registration. A current list of RENCs can be found [here](#). EPA requires all grant recipients issued under this solicitation notice to meet these terms and 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 EN Grant Program. The QARF must describe for each [goal](#) and [output](#):

- 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 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: <https://www.epa.gov/exchangenetwork/exchange-network-grant-program#QAP>.

## VI-C. Reporting

### Semi-Annual Performance Progress Reports:

Reporting is an important obligation 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 applying 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 found at <https://www.epa.gov/grants/epa-solicitation-clauses> are important and applicants must review them when preparing applications 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 Contact

The primary EPA Headquarters point of contact is:

Erika Beasley

Office of Information Management

Information Exchange Partnership Branch

Phone: (202) 566-2530

Fax: (202) 566-1684

Email: [beasley.erika@epa.gov](mailto:beasley.erika@epa.gov)

<b>Mailing Address:</b> Erika Beasley U.S. Environmental Protection Agency 1200 Pennsylvania Ave., NW (2824T) Washington, DC 20460	<b>Physical Address</b> <i>(for overnight or courier deliveries):</i> Erika Beasley U.S. Environmental Protection Agency 1301 Constitution Avenue, NW (Rm 6408J) Washington, DC 20004
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# 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. These activities must align with EPA’s priorities found in [Section I-E](#). Applicants can propose to implement one or more of these data exchanges.

The cost estimates that appear in the following appendix were made by the [Subject Matter Experts \(SMEs\)](#) 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 in costs (see [Evaluation Criteria 4C](#) and the ‘[Overview of Project Budget](#)’ on Page E-4).

### **Air**

<a href="#">Air Quality System (AQS)</a> .....	A - 2
<a href="#">Emission Inventory System (EIS)</a> .....	A - 3
<a href="#">Radon Data Exchange</a> .....	A - 4
<a href="#">E-Enterprise Combined Air Emissions Reporting (CAER)</a> .....	A - 6

### **Enforcement and Compliance**

<a href="#">ICIS (Integrated Compliance Information System) Digital 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 (RCRA Info)</a> .....	A - 16
<a href="#">Open Dump Data Exchange</a> .....	A - 17

### **Water**

<a href="#">eBeaches</a> .....	A - 18
<a href="#">Safe Drinking Water Information System (SDWIS)</a> .....	A - 20
<a href="#">Water Quality Exchange (WQX)</a> .....	A - 21
<a href="#">Assessment TMDL Tracking And Implementation System (ATTAINS)</a> .....	A - 23
<a href="#">Drinking Water State Revolving Fund &amp; Clean Water State Revolving Fund</a> .....	A - 26
<a href="#">Underground Injection Control (UIC) Data Availability Projects</a> .....	A - 27

### **Other Data Exchanges**

<a href="#">Toxic Release Inventory Data Exchange</a> .....	A - 30
<a href="#">Facility Registry Service (FRS)</a> .....	A - 32



## 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 does not anticipate any major changes to AQS affecting EN flow requirements or milestones in FY 2020.

### Cost Estimates:

Activity	Cost Estimate
Implement AQS data exchange	\$50,000-\$150,000

## 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 (CERS) 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 related to 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, 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 facilitating online collection of emissions inventory data.

**Cost Estimates:**

Grant Activity	Cost Estimate
Support the transition from locally installed code tables to <a href="#">web services</a> 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 <a href="#">shared services</a> 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 allowing 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](#), 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 Spring 2020.

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 and standardized data mapping. VES uses a centralized, scalable server supporting any file format including XML and JSON and automatically generates [REST](#) and [SOAP](#) services. VES only requires users to manage database staging tables and configure the system via a web browser-based administrator console. These requirements are significantly less than with prior [Node](#) technology.

CDC makes the aggregated data accessible to the public through their CDC Tracking [API](#). 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:**

- Implement Exchange Network web services making radon test data available to other stakeholders and the public as appropriate.
- Participate in the CDC EPHTN Work Group to discuss radon data exchange needs and collaboratively coordinate on implementing standardized web services.
- 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.

**Cost Estimates:**

Grant Activity	Cost Estimate
Map radon data: <ul style="list-style-type: none"> <li>➤ to the Radon XML <a href="#">schema</a> 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 making radon test data available to other stakeholders and the public as appropriate. Grantees may also want to explore the use of <a href="#">Virtual Exchange Services (VES)</a> 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” which can be downloaded from CDC’s Radon Resources webpage: <https://ephtracking.cdc.gov/showRadonResources>
- 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 an electronic reporting system, a “common emissions form” (CEF) that will 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. The CEF will be able to retrieve previously submitted emissions and facility and sub-facility data, collect input data for emissions calculations, perform the necessary calculations, then make the data available to each program as needed. The CEF will 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 preferred reporting system. In addition, a suite of webservices are being created for use with the CEF as part of a broader CAER CEF System. These services will be available for SLTs to use with their own systems, should they choose to do so.

### **Status and Plans:**

To date, a large amount of information about air emissions data requirements has been collected through CAER’s Product Design Team (via its Research and Development Teams), and the CEF application is under development towards a minimum viable product (MVP). The Common Form development is being conducted using agile methods, where features of the form are being built out progressively and tested. The state of Georgia and its pilot facilities have been working with EPA towards the MVP since the Fall of 2018, with the launch of the MVP expected to support facilities reporting to Georgia for the 2019 inventory year in June 2020 for NEI and TRI air sources.

Draft CEF work done so far includes the capability for facilities in Georgia to report to their emissions to the state in the CEF and the state to report those emissions to the NEI. The draft CEF also supports sharing reported hazardous air emissions for pre-populating in TRI-MEweb forms. Work on the CEF with Georgia will not stop there. First, features will be added to the CEF and customization for Georgia will be expanded. Second, more SLTs will be onboarded. All SLTs will be welcome to participate. While the CEF MVP will be set up for SLTs that don’t have their own reporting system (e.g. are still using paper or email submissions) or do not wish to keep their current reporting systems, future work will also include supporting SLTs who wish to keep their current reporting systems by helping integrate SLT systems with shared TRI reporting. Work will involve both building out the CEF to work with the SLTs reporting systems, as well as customization of SLT-specific data requirements. The architecture of the CEF is such that new SLT customization is possible in modules, thus eliminating the need to build out an entirely new form for each state. Third, work on the CEF will also begin incorporating additional programs (CEDRI and GHGRP) during 2020 and 2021.

This solicitation is aimed at state, local, and tribal partners that would like to onboard with the CAER Common Form System and begin work towards CEF adoption. We will need state and tribal partners and volunteer facilities, who will assist throughout the development and piloting of different iterations of the Common Form by providing input regarding their SLT-specific program requirements. Due to timing of availability of grants and reporting deadlines, EPA will be flexible in working with onboarding states, territorial, and tribal partners to best meet their needs.

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

The following are examples of activities states and tribes could undertake towards further development towards their adoption of the Common Form. This list is not exhaustive of all potential fundable activities.

- *Collect SLT Data Program Requirements.* The CEF has incorporated federal program requirements as well as broad requirements requested by SLTs on the PDTs. However, research on additional SLT-specific requirements will be needed. This could include, for example:
  - Establish facility inventory data management: facility and sub-facility component ID's assignment and management by the SLT, inventory review, and SLT data systems to be considered.
  - Establish emissions inventory data management
  - Compile QA & QC checks specific to the SLT
  - Research and address special/atypical cases to be addressed
  - Assess Confidential Business Information (CBI) needs
  - Establish timeline with reporting deadlines to consider
  - Map state/tribal data to federal data for different programs (for example):
    - Create crosswalks for codes if state/tribal codes are different than federal codes
    - Map state/tribal emissions data requirements to federal requirements so the CEF can satisfy both
    - Research methodology differences in emissions estimations between state/tribal and federal data so the CEF can be programmed to calculate both
  
- *SLT IT Requirements (depending on the SLT system).* The CEF has incorporated basic functionality for an SLT that does not have a system or does not wish to keep its current reporting system. However, many SLTs will want to take advantage of “common” reporting while keeping their own system, in which case specific workflows for the SLT system to interact with the CEF will need to be built. Examples of work needed towards accomplishing this goal could include:
  - Analyze and assess existing system requirements for CEF for your agency
  - Gather SLT system requirements for existing data systems to interact with the CEF system
  - Identify and build or adopt webservices needed and direction of the workflow, for example, to use emission factors [web services](#), QA services, or other services that are a part of the CEF System
  - Establish a timeline for system interfacing and testing
  - Implement SLT system upgrades to connect with the CEF System
  
- *Customize and Test the SLT CEF Module.* SLT-specific requirements not already built in the CEF will be added so as to customize the CEF to SLT needs. Work towards this goal could include, for example:
  - Identify and build facility data entry preferences, including:
    - Data pre-population features
    - Default settings
    - SLT specific QA checks during reporting and during final QA

- Allowable edits
  - Identify and build SLT review preferences, such as:
    - SLT-specific reports and searches
    - Notifications preferences
  - Test the CEF SLT module
- *Train Users and Deploy the CEF to the SLT.* Once the SLT-specific module for the onboarding SLT is working, training for users (SLT staff and facilities) will be made available. A plan for adoption of the CEF by the state will be developed. Work towards full deployment and adoption of the CEF by the onboarding state could include, for example:
  - Training of facilities in the use of the CEF
  - Plan for onboarding all facilities
  - Possible facility inventory clean-up prior to starting to allow reporting with the CEF
  - Live reporting

A state/tribal authority may propose an alternative activity falling 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 SLT receiving an amount commensurate with their specific circumstances. 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 Estimate
Collect SLT Data Program Requirements	\$55,000
Collect SLT IT Requirements	\$60,000
Customize and Test the SLT Module:	\$60,000
Train Users and Deploy the CEF to the SLT	\$25,000

**Shared Services/Reusable Components Available:**

The development of the MVP up to Spring of 2020, will involve a simple workflow with the pilot state, and emissions data reporting to the NEI and the TRI. Thus, the CEF will be available with a few additions, to any SLT that wishes to have the same workflow as the pilot state. However, as new SLTs are onboarded, each workflow and module built to accommodate that SLT will be potentially re-usable to onboard other states with a similar workflow. Every SLT contributing to further development of the CF, thereafter, is laying the foundation for other states to be able to adopt the CEF, because additional SLTs will be leveraging earlier work. 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.

In addition, a suite of webservices are being created for use with the CEF as part of a broader CAER CEF System. These will constitute stand-alone products that SLTs will be able to use with their own systems, even if they do not adopt the CEF. Such webservices will include: Source Classification Code searches, emission factor searches from WebFIRE, QA and QC checks.

**More Information:**

For SLTs who want to onboard in 2020 for 2021 inventory year reporting, the grants have already been issued, but they should reach out to Kelly Poole ([kpoodle@ecos.org](mailto:kpoodle@ecos.org)) from ECOS to find out if and how they might obtain assistance. For SLTs who want to onboard in 2022 for the 2021 inventory year reporting under this grant, the SLT would need to apply during this 2020 grant cycle and would be able to plan to start their project by October of 2021. This timing may not be early enough for some states who have early reporting deadlines for the 2021 inventory year. For example, it could be very difficult for a state who has a lot of custom needs for their CEF integration to start a project in October 2021 for a reporting deadline in January of 2022. Thus, the later the reporting deadline in 2022 and the simpler the SLT integration needs, the more likely completion of the work would be in time for the reporting deadline. Some SLT reporting regulations allow flexibility in the report deadline at the discretion of the SLT's administrator, and SLTs should explore whether a temporary extension for a given reporting year could help to make possible the use of E-Enterprise grants for an earlier emissions reporting year. However, SLTs should still consider the 2020 EE grants as a funding mechanism for onboarding intended for the 2022 inventory year or later, since the grants last for 3 years. Either way, EPA will be flexible in working with SLTs and their specific timelines. Interested states should consider discussing a potential timeline of work with EPA even if funds are not yet available. It may be possible to begin some aspects of the work even if the SLT has not been fully funded. EPA plans to offer grants for this purpose in upcoming years as well.

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

#### **Acronyms:**

- CAER - Combine Air Emission Reporting
- NEI - National Emission Inventory
- SLT - State, local and Tribes
- CF - Common Form
- TRI - Toxics Release Inventory Program
- GHG - Green House Gas Program
- CEDRI – Compliance and Emissions Data Reporting Interface
- MVP – Minimal Viable Product
- PDTs- Product Design Teams
- FRS – Facility Registry System



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

### **Description:**

State and tribal partners send data to the Integrated Compliance Information System (ICIS) to meet reporting requirements. The data is used to support 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 programs related to Clean Air Act [\(CAA\) stationary sources](#). State and tribal partners provide data to ICIS for which they have authority via [node](#) and [node client](#) technology. This includes [XML](#) formatted submissions of CWA NPDES and CAA data via physical nodes on the Exchange Network, and Virtual Exchange Services, which is a cloud-based platform for creating data exchanges on the EN.

### **Status and Plans:**

To expand data sharing 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.

In addition, the Agency is advancing digital strategies to reduce operation costs for agencies and make environmental compliance and enforcement data more accessible and shareable. These strategies include innovative projects to develop, for example, frameworks and platforms for digital services, shared hosting, and multi-direction data flows, which are all facets of a digital environment that includes ICIS.

States and tribes can contribute to advancing digital strategies by considering shared platforms that allow regulators to work together using consistent [data standards](#) for information related to facility, permit, and compliance and enforcement data.

The Agency will continue to grow its efforts to establish support for shared services. However, recognizing the investment to transition to digital services, activities to operate and maintain physical [nodes](#) on the EN will continue to be supported.

### **Activities Grant Applicants Should Consider, include, but are not limited to:**

The applicant might explain key aspects of its business case, functional requirements, and long-term operational considerations necessary to integrate and use elements of a digital strategy 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 the capability to exchange structured and unstructured information through web Application Programming Interfaces ([API](#)).
- Develop APIs 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.
- Expose data and content that describes the data to other computers in a machine-readable format (i.e., provide web APIs).
- Develop, modify or consume shared services that support environmental business processes, including but not limited to:
  - User registration process,
  - User authorization and authentication,
  - Enable entering data and viewing human readable data,
  - Facilitate search functions, and
  - Create, maintain, and archive a copy of record.
- Develop and implement a framework that results in reference table shared services for data and [data standards](#) related to, for example: states, counties, permit types, permit status, chemicals, pollutants, form status, form types, titles, and roles/user types.
- 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 Online (ECHO).

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

**Cost Estimates:**

Grant Activity	Service	Cost Estimate
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
Develop the capability to exchange structured and unstructured information through web Application Programming Interfaces ( <a href="#">API</a> ).	ICIS-NPDES	\$35,000 - \$50,000
Develop APIs and/or shared services	ICIS-NPDES or ICIS-Air	\$25,000 - \$50,000
Expose data and content that describes the data to other computers in a machine-readable format	ICIS-NPDES or ICIS-Air	\$25,000 - \$50,000
Build mechanisms to present open data to customers.	ICIS-NPDES or ICIS-Air	\$25,000 - \$50,000
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
- Impaired Waters and TMDLs ([ATTAINS](#)) – Exchange Network Service
- Pollutant/Parameter Lists (reference tables)
- 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.
- Share Services Resource Catalog - <https://sscatalog.epa.gov/sharedservicecatalog/>

**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:

EPA currently has two tools to accomplish NPDES electronic reporting: NetDMR for DMRs and the NPDES eReporting Tool (NeT) for general permits and program reports. EPA has developed and deployed NetDMR and NeT solutions for the regulated community to report to EPA via web applications where EPA is the NPDES permitting authority, and also where the state is authorized. NetDMR supports DMR reporting by the regulated community in 24 states and territories and all 10 EPA Regions. NeT is a fully service-based solution used by the regulated community to report Part 503 annual program reports to EPA (Biosolids Annual Program Report), and submit NPDES general permit forms, including, but not limited to, Notices of Intent and No Exposure Certifications. Where EPA is the permitting authority, the federal construction (Construction General Permit (CGP)) and industrial storm water general permits (Multi-sector General Permit (MSGP)) are currently supported by NeT, in addition to EPA Region 4 and 6’s Outer Continental Shelf general permits. For authorized state permits, NeT currently supports the Rhode Island industrial stormwater general permit (RI MSGP). NeT is available to states as Managed Software as a Service (MSaaS).

### 1. State Use EPA’s NeT Solution

EPA is expanding use of the NeT platform for CGP and MSGP to additional authorized states and the federal aquaculture permit in Region 10 (Pacific Northwest). NeT will eventually support reporting by regulated entities for additional EPA or state NPDES general permits and program reports including, but not limited, to: 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. Where needed and appropriate, new [web services](#) and application program interfaces ([APIs](#)) will be developed and made available to states, tribes, and territories to support electronic reporting of NPDES permits and program reports. States that elect to use the EPA’s NeT platform may need to use [APIs](#) or develop [shared services](#) that can be invoked by EPA applications in order to integrate with the NeT platform. For example, states may consider how they might access or collect the data or information provided by permittees through the NeT application.

### 2. States Develop Own Solution

States that prefer to develop and deploy their own electronic reporting solutions within their state computing environment could describe how the data will be shared with EPA and others, what services will be used and/or developed, what APIs will be developed/incorporated and how they will be used, a strategy for maximizing reuse of existing shared services and components, and how the application will support their customer’s needs. These states will use their own applications to ensure timely and accurate reporting of DMRs, NPDES permit forms and/or program reports by permittees, then send this data to EPA per 40 CFR Part 127 and possibly make it available to others as open data. For a write up on sharing data between co-regulators, please see Appendix A for the ICIS Digital Services write up. In these

instances, states should highlight development that results in the integration of state and EPA shared services, and multi-directional dataflows for accurate and complete data sharing.

Finally, whether states elect to use an EPA application or develop their own, the solution should leverage shared services, APIs, and contribute to the establishment of consistent [data standards](#) for the NPDES permit, compliance and enforcement program.

**Activities Grant States Should Consider, include, but are not limited to:**

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

Since the NeT application uses a service-first model, state partners can use (or consume/invoke/leverage) shared services from the EPA enterprise solution. In this scenario, a state may develop and host their own NeT complementary solution that leverages EPA shared services (e.g., identity management) and web APIs that have been developed for user registration and account management, identity proofing/management, electronic signature recording, and copy of record management.

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

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

States should always leverage existing shared services. But, if a necessary shared service is not available, states, tribes, and territories may propose to develop, test, and implement the new service(s) that they will need to enable electronic reporting, such as a service for the collection of application fees or common reference tables (e.g., states). States 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.

➤ **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, states might explain why it is advantageous to develop and deploy their custom system (which requires state operation and [maintenance](#)). States 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. States 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.

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 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	\$25,000 - \$50,000
Development, Testing and Implementation of eDMR System within a State Environment	ICIS-NPDES	\$35,000 - \$200,000

**Shared Services/Reusable Components Available:**

Please see [Appendix A ICIS Digital Services](#) and [Appendix B for Shared CROMERR Services](#) for services for a list of shared services or reusable components available to states, including, but not limited to:

- Shared CROMERR Services: User Management, Identity Management, Signature Device, Signature, Sign and Store Copy of Record
- [CDX](#) Registration
- Common reference tables and codes (e.g., Pollutant/Parameter Lists)
- Federated Identity Management
- Impaired Waters and TMDLs ([ATTAINS](#)) – Exchange Network Service
- 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.
- Share Services Resource Catalogue - <https://sscatalog.epa.gov/sharedservicecatalog/>

**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 with 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.

RCRAInfo Permit v6 upgrade is scheduled and under development. Its upgrade may include service [schema](#) enhancement. That may lead to client-side update as well.

A national system for tracking hazardous waste shipments electronically, known as “e-Manifest,” is the most-demanding 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 ready to go.

### Status and Plans:

Exchange Network Program Office Activities	
Milestone	Target Completion Date
RCRAInfo Permit v6 upgrade and its services	First quarter 2020
RCRAInfo Corrective Action V6 upgrade and its services	Fourth quarter 2020
eManifest Outbound Service (v 5.7)	Completed
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 currently performing double-data entry should seek to use either RCRAInfo inbound or outbound services to eliminate double-data entry.

### Cost Estimates:

Activity	Cost Estimate
RCRAInfo Permit v6 services upgrade	\$50,000 - \$100,000
RCRAInfo Corrective Action V6 services upgrade	\$50,000 - \$100,000
Migrate to either RCRAInfo inbound or outbound services to eliminate double data entry.	\$80,000 - \$150,000

### More Information:

- RCRAInfo Exchange Network Resources (<http://www.exchangenetwork.net/data-exchange/rcrainfo/>)
- E-Enterprise – E-Manifest for Hazardous Waste (<https://www.epa.gov/e-manifest>)

## 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 meeting 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 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.

### Cost Estimates:

Activity	Cost Estimate
Determining the need to develop specific <a href="#">data standards</a> 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 <a href="#">Integrated Project Teams</a> 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:** (<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 jurisdiction (state, tribe, territory) 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. Jurisdictions should consider submitting spatial representations of the beaches reported in the Beach Notification (PRAWN) and monitoring stations in Beach Monitoring (WQX) submissions using the NHDEvent data flow.

### Status and Plans:

For both Beach Notification and Beach Monitoring the Version Status is “Supported” and the Data Exchange Status is “Flowing”. There are no plans to modify the Beach Notification [schema](#), however the Beach Monitoring flow uses the WQX schema which is scheduled to be revised to version 3.0 before or during this grant period.

### 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 National Hydrographic Dataset (NHD). Link beach locations consistent with the NHD and the Geospatial One Stop Hydrography Standard.
- Verify in WQX/WQP 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 jurisdiction 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. <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

**Shared Services/Reusable Components Available, More Information:**

Please see the following Beach Program websites for Data-related information:

<https://www.epa.gov/beach-tech/submitting-beach-data-epa>

and general Beach Program information including BEACH Act Grants:

<https://www.epa.gov/beaches> and <https://www.epa.gov/beach-tech/beach-grants>

## 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. EPA is in the process of updating SDWIS State to version 3.4 to operate successfully with all possible combinations of Java 8, Tomcat 8.5 or higher, Windows Server 2012 or 2016 or Linux operating systems, and Internet Explorer, Firefox and Chrome web browsers, which would address current security vulnerabilities and cross-browser compatibility requirements. EPA also provides a centralized, [CROMERR](#)-compliant web-based application, the Compliance Monitoring Data Portal (CMDP) for electronic reporting of water samples data, compliance, and non-compliance data from laboratories and water systems to primacy agencies.

### Status and Plans:

CMDP has been operating since October 2016. To date, ten (10) primacies agencies have adopted CMDP. SDWIS State's update is currently in development and is expected to be available to drinking water primacy agencies in December 2019.

### Activities Grant Applicants Should Consider:

- Participating in monthly SDWIS/CMPD update calls (send an email to [sdwisprime@epa.gov](mailto:sdwisprime@epa.gov) if not already on the contact list.) (**activity not available for funding**)
- Join the SDWIS User Community Discussion Forums managed by the Association of State Drinking Water Administrators (ASDWA): <https://www.asdwa.org/data-management/> (**activity not available for funding**)
- Adopting and deploying CMDP – including but not limited to developing a transition plan, data cleanup, data migration and training to move a drinking water primacy agency to 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, transitioning labs to CMDP, and migrating data into CMDP.
- Improving data quality of existing SDWIS State databases
- For non-SDWIS states, implementing SDWIS State 3.4, including but not limited to developing a transition plan, data cleanup, data migration and training to move a drinking water primacy agency to SDWIS State 3.4.

### Cost Estimates:

Activity	Cost Estimate
Developing primacy agency specific transition plan for CMDP	\$5,000 - \$15,000
Developing primacy agency specific user training for CMDP	\$5,000 - \$10,000
Mapping non-SDWIS State compliance system to CMDP	\$30,000 – \$50,000
Mapping non-SDWIS State compliance system to SDWIS State v3.4 structure	\$75,000 - \$100,000
Migrate all necessary data into the CMDP and conduct necessary administrative set-up to enable future use by laboratories	\$5,000 - \$20,000
Transition a drinking water lab to CMDP	\$8,000 - \$15,000

### Shared Services/Reusable Components Available:

- CMDP [ReST APIs](https://cmdp.zendesk.com/hc/en-us/articles/231732608-CMDP-LIMS-Interface-Control-Document): <https://cmdp.zendesk.com/hc/en-us/articles/231732608-CMDP-LIMS-Interface-Control-Document>

## 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 QA/QC shared <a href="#">web services</a> for utilization for inbound WQX and outbound WQP	March 2020
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)	March 2020
Migration of the WQP to the cloud for enhanced data publishing, efficient access to web services, scalability, and increased computing efficiency.	January 2020

### Activities Grant Applicants Should Consider:

- Develop applications using 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 collecting 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.
- Creation 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
- EPA is particularly interested in partners including PFAS monitoring data.

**Cost Estimates:**

Activity	Cost Estimate
Mapping state/tribal/territorial data system to WQX Schema and/or collaborate with eligible entities collecting 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 <a href="#">shared services</a> 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 currently on track for March 2020 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 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 states/tribes/territories are performing leading to water quality restoration

The data available in ATTAINS reside in a web-based application states, territories, tribes<sup>4</sup> and EPA can use to track water quality assessment decisions, TMDLs, priority areas and report on performance 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](#) supporting the integrated vision of the Water Quality Framework.

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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. 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 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	Complete
States, tribes and territories may begin submitting data to ATTAINS for the 2018 Integrated Reporting Cycle	Complete
ATTAINS system components continue to be built to provide additional functionality	Ongoing
EPA has completed an initial suite of syncing services. EPA will continue to build common <a href="#">RESTful services</a> 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 enhancing 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 comparing monitoring data with standards or thresholds to automate an initial water quality assessment recommendation--the 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 integrating monitoring and nonpoint source data with water quality assessments (e.g., web-based services accessing 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 the project proposal commits to deploying the ATTAINS data flow into production.*

**Cost Estimates:**

<b>Activity</b>	<b>Cost Estimate</b>
Implement ATTAINS data flow for Assessment Units, Assessments or Actions	\$40,000-\$100,000
Build capability to retrieve data from ATTAINS outbound <a href="#">web services</a>	\$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 <a href="#">RESTful services</a> 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 providing additional functionality.
- In addition, reusable components 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>)



## Drinking Water State Revolving Fund and Clean Water State Revolving Fund

### Description:

The Drinking Water State Revolving Fund (DWSRF) program and Clean Water State Revolving Fund (CWSRF) program are federal-state partnership to provide communities a permanent, independent source of low-cost financing for a wide range of drinking water and wastewater infrastructure and other water quality projects. The State Revolving Fund (SRF) database will capture the range of activities that states pursue with their DWSRF and CWSRF funds. These funds are provided as grants to states to establish and capitalize (fund) infrastructure banks. The states primarily make loans to drinking water and wastewater systems from these state infrastructure banks. The new SRF system will capture project level data from each state's bank (what was the funding for, how much, etc.), as well as financial data about the flow of funds between the state bank and other entities, including but not limited to: disbursements of funds, repayment of funds, funds borrowed.

Most states already have state systems to track a subset of this data. Some of those states currently push data electronically to the present EPA system. States should be able streamline reporting to EPA by enabling a data bridge to maintain and expand the flow of data from those states. The new SRF system will use [REST APIs](#) and other opportunities to connect to existing state databases to import data. The new SRF system will also allow a user to upload an excel file and map data fields to [batch upload](#) to the New SRF system. The new SRF System will be developing an excel sheet model/template as a guide for states interested in that method of batch uploads. All Imported Data will include checks to ensure it meets Quality Assurance Requirements and it should allow users to edit or modify fields within the new SRF system after import.

### Status and Plans:

The new SRF system is currently being developed; it is expected to be released in production summer 2020. States wishing to bridge to the database may begin doing so in fall 2020.

### Activities Grant Applicants Should Consider:

- We are pursuing support for maintaining and expanding the flow of data from states that will streamline data reporting.

### Cost Estimates:

Grant Activity	Cost
Mapping state SRF system to New SRF system	\$75,000 - \$100,000
Mapping state data files to upload to New SRF templates	\$30,000 – \$50,000
Modifying state applications to interact with New SRF system using <a href="#">REST API</a> calls	\$40,000 - \$60,000
Develop checks of the data being downloaded from New SRF system to the state applications to ensure it meets state system needs	\$75,000 - \$100,000

### Shared Services/Reusable Components Available:

- EPA furnished mappings of the new SRF database and templates available fall 2020.
- New SRF system [REST APIs](#) for data access and uploading data available fall 2020.
- [VES](#) set up to allow states to configure/use VES for replicating their data in SRF to a state hosted set of data tables.
- VES set up to allow states to configure/use VES for to allow [batch upload](#) to the new SRF system.

### More Information:

- Drinking Water State Revolving Fund: <https://www.epa.gov/dwsrf>
- Clean Water State Revolving Fund: <https://www.epa.gov/cwsrf>

## Underground Injection Control (UIC) Data Availability Projects

### Description:

In 2018, the Underground Injection Control (UIC) program streamlined and modernized multiple data collection processes into the web-based UIC Data Application. The Application allows primacy programs and EPA to electronically report injection well inventory, permitting, enforcement and compliance, inspections and mechanical integrity testing data, download data, and access pre-populated tables and figures created with Qlik software. Prior to 2018, programs reported data to the Inventory and Measures Reporting Site, hardcopy Form 7520 or the National UIC Database.

States that reported to the National UIC database were able to query the data to generate populated 7520 report forms. In order to successfully participate, states and regions were required to build their data into a schema mappable to the national schema. This schema is still useful as a method for generating 7520 data, even if the new UIC Data Application does not require well-level detail.

### Status and Plans:

In order to engage more states with national electronic collection of 7520 activity and inventory data, the UIC program began operating its UIC Data Application as the sole reporting mechanism in April 2019. The EPA began robust outreach and education in late 2018 on using the Application as well as increasing awareness and accuracy of the data requested from programs. Outreach will continue throughout 2020.

The EPA learned during UIC Data Application development and outreach that some UIC programs are faced with outdated, inefficient data management systems or no electronic data management system. The outdated systems or lack of a system create a challenge for programs to meet regulatory reporting requirements. In the case of states, tribes, or territories in the process of requesting primary UIC enforcement authority, the potential program is particularly challenged because they are seeking approval to transfer the UIC program, including all the current and historical data collected on existing injection wells, from the EPA Regional office as well as developing a new data management system.

### Activities Grant Applicants Should Consider:

The following are examples of activities that states, territories, and tribes could undertake to increase the efficiency and accuracy of reporting to the UIC Data Application. This list is not exhaustive of all potential activities that could be funded.

- Map data collected by the primacy program or potential primacy program to data schema collected nationally in the UIC Data Application. Mapping activities may include:
  - Ensuring the program is collecting and reporting on all required data fields within the UIC Data Application. This includes gathering required data elements and evaluating the quality of any source data.
  - Creating crosswalks for state regulatory requirements or codes with federal data requirements and codes. Primacy program regulatory requirements may use differing terminology or be applied differently than federal requirements. The primacy program will need to understand how the primacy regulations align with federal regulations in order to provide accurate data for federal reporting.
  - Creating and assessing accuracy of queries within the primacy program data system to meet the regulatory reporting obligations and format required by the UIC Data Applications. Queries are used to extract and summarize data in the format required by the application. Queries may also be used to assess the quality of the source data.

- Developing an organizational structure (schema) for the primacy program database. This includes building tables that will organize and store facility, well, and UIC activity data, and primacy program codes mapped to federal codes among other data elements. The database structure should also allow the primacy program to easily extract data into the UIC Data Application's templates for batch upload of data.
- Streamline and modernize reporting of primacy program or potential primacy program data, including:
- The development of technology that increases efficiency of program staff to enter and access data from the primacy program data system. This includes building a user interface that enables staff to add and manage data.
  - The provision of training to program staff on assessing data quality, use of the primacy program data system, and preparing data for federal reporting in the UIC Data Application
  - The deployment of technology that decreases reporting redundancies within the primacy program and increases quality control. For example, electronic reporting that allows injection well operators to submit data directly to the program data management system would decrease staff time in manually entering operator data into the program's system. Another example might be a program that utilizes tablets or laptops to collect field data and flows data directly from the field device into the program's data management system.
  - The transference of historical data to current data management systems. Migrating data from hardcopy files or older data management systems into the current data system allows primacy programs to use the entire body of data more efficiently.
  - The maintenance and upgrading of data systems as needed. Maintaining data system functions are necessary for efficiency of data use and information security. Advances in technology allow for primacy programs to potentially increase efficiency and decrease costs of operations and maintenance if data systems are upgraded. While maintenance costs are ongoing over the life of a data system, the need for upgrades is expected every several years rather than annually.

**Cost Estimates:**

<b>Grant Activity</b>	<b>Estimated Cost</b>
<b>Map data collected by the primacy program or potential primacy program to data collected nationally in the UIC Data Application</b>	
Ensure program is collecting and able to report all data fields found in the UIC Data Application	\$20,000
Create crosswalks for state regulatory requirements or codes with federal data requirements and codes	\$15,000
Create and assess accuracy of queries within the primacy program data system to meet the regulatory reporting obligations and format required by the UIC Data Applications	\$10,000
Develop schemas and templates for batch upload of data to the UIC Data Application	\$10,000
<b>Streamline and modernize reporting of primacy program or potential primacy program data</b>	
Develop technology that increases efficiency of program staff to enter and access data from the primacy program data system	\$50,000
Provide training to program staff on assessing data quality, use of the primacy program data system, and preparing data for federal reporting in the UIC Data Application	\$3,000/year

Deploy technology that decreases reporting redundancies within the primacy program and increases quality control	\$50,000
Transfer historical data to current data management systems	\$45,000
Maintain and upgrade database systems as needed	\$30,000

**Shared Services/Reusable Components Available:**

Programs may seek information about existing UIC databases found in the EPA Regions. It is possible that a primacy program or potential primacy program may be interested in obtaining a model or schema of an existing EPA Regional database or the previous National UIC Database as a starting point in developing their data management system. Primacy programs should engage their EPA Regional contacts in discussion about reusable components or shared services.

**More Information:**

- The target activity data for the Underground Injection Control program is available on the 7520 forms, please see:  
<https://www.epa.gov/uic/underground-injection-control-reporting-forms-state-summary-information>.
- Applicants and reviewers can find a concise summary of the UIC regulations here:  
<https://nepis.epa.gov/Exe/ZyPDF.cgi/P100ETDA.PDF?Dockey=P100ETDA.PDF>.
- The instructions on the Form 7520 also provide clarification on the data collected by EPA from primacy programs:  
<https://www.epa.gov/uic/compliance-reporting-requirements-injection-well-owners-and-operators-and-state-regulatory>.

## Toxics Release Inventory Data Exchange

### Description:

TRI collects information on the management of certain toxic chemicals that can pose a threat to human health and the environment. Facilities in the United States 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) facilitates these industries with their TRI-MEweb submissions to send simultaneous copies of their TRI forms to both EPA and States/Tribes via the [CDX](#) network. Benefits of the TRI Data Exchange include:

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

### Status and Plans:

Exchange Network Program Office Activities	
Milestones	Target Completion Date
Build end-points and loading/converter tool to collect the TRI data flow and map its <a href="#">XML</a> data fields to their state/tribal <a href="#">node</a> .	As needed
Continue to investigate use of additional <a href="#">web services</a> for further application functionality.	Ongoing
Test and Support Operational Node-to-Node data exchanges between <a href="#">CDX</a> 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 enabling the import of TRI data into their systems. The procedures should support data in XML format received via their state/tribal node.
- Encourage environmental state/tribal program office employees from TDX states to take advantage of the benefits offered by the TDX Viewer tool.
- Use the TRI XML schema to develop loading/converter tools to populate the State/Tribal databases 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 the project proposal commits to deploying the outbound data flow into production.*

**Cost Estimates:**

Grant Activity	Cost Estimate
States/Tribes should develop procedures and support enabling the import of TRI data into their systems. The procedures should support and align with the TRI XML format received via their State/Tribal <a href="#">node</a> . This would also include updating the XML to include new <a href="#">data elements</a> and structure when applicable.	\$50,000 - \$150,000
States/Tribes can request participation in accessing TRI data flow via a downloadable method. This method does not require any configuring of a node-to-node flow. However, participation does require submitting a Memorandum of Agreement (MOA) form with EPA. The MOA form is available on the TDX website.	\$10,000 - \$15,000
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

**Shared Services/Reusable Components Available:**

The following projects have been funded using [Exchange Network](#) grants to build TRI data flows to States/Tribes:

Project Name	Short Description	Resource ID
New Mexico- TRI Plugin Grant ID: OS83608401	The New Mexico Environment Department developed Java2 versions of the TRI plugin and to get TRI Submit Manifest Service for their OpenNode2.	<a href="#">14048</a>
Maryland - TRI and eBeaches Grant ID: OS83607001	The Maryland Department of the Environment (MDE) completed two network exchange data flows for Toxic Release Inventory System (TRIS) and eBeaches.	<a href="#">14041</a>

**More Information:**

- TRI Data Exchange (TDX):  
<http://www.epa.gov/toxics-release-inventory-tri-program/tri-data-exchange>
- TRI Reporting Resources:  
<https://www.epa.gov/toxics-release-inventory-tri-program/reporting-tri-facilities>
- Exchange Network- TRI XML schema documentation:  
<http://www.exchangenetwork.net/data-exchange/toxics-release-inventory-tri/>
- Reusable Component Service (RCS) Grant website:  
[https://ofmext.epa.gov/sor\\_extranet/registry2/reusereg/addresource?grantResource=true](https://ofmext.epa.gov/sor_extranet/registry2/reusereg/addresource?grantResource=true)
- Shared Service Resource Catalogue (SSRC) Website:  
<https://sscatalog.epa.gov/sharedservicecatalog/>

## Facility Registry Service (FRS)

### Funding Opportunity Purpose:

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

### Service Background and Description:

The Facility Registry Service (FRS) is EPA's centrally managed database integrating 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 wishing to take advantage of FRS web services can find a listing of data resources here: <https://www.epa.gov/frs/frs-data-resources>.

Through the work of the E-Enterprise Facility Integrated Project Team, two new sets of RESTful web services have been developed and are now available for funding opportunities. The FRS Submit web services enable a partner to submit facility information to FRS in real-time. The FRS Query web services can be leveraged to get FRS facility information in real-time and enable partners to integrate into their systems. This can be used to provide a more comprehensive view of facility data in their public or non-public facility applications. Grant applicants can obtain information about FRS Submit and Query web services at: <https://www.epa.gov/frs/frs-exchange-network>

FRS has jointly developed a reusable web-based module for CDX-based data collection flows leveraging 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.

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: <https://www.exchangenetwork.net/data-exchange/>

The Facility Linkage Application (FLA) is EPA's data curation tool 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 mis-linkages and updating/correcting facility name/address. To register to become a steward of FRS data, please visit: <https://www.epa.gov/frs/facility-linkage-application-fla>

#### **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 RESTful 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. Grant applicants can obtain information about FRS Submit and Query web services here: <https://www.epa.gov/frs/frs-exchange-network>

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 are available through the RESTful FRS Query service.

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

- Use of the RESTful FRS Query and Submit 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 integrating 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 integrating their facility information can also use this service to develop tools for retrieving FRS data for comparative analysis and reconciliation.
- Use FRS RESTful Query web services for front end data entry for burden reduction as well as supporting display of integrated facility data on public-facing facility applications.
  - 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 integrating 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 integrating their facility information can also use these services to develop tools for retrieving FRS data for comparative analysis and reconciliation.



- Leverage existing FRS's FacID data flow to exchange data through a node in order to:
  - Integrate state/tribal/territorial/local facility data into FRS.
  - Integrate FRS facility data into state/tribal/territorial/local systems.
- 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:**

Function	Service	Cost Estimate
Use FRS Submit web services to integrate data into FRS	<a href="#">APIs</a>	\$75,000-\$100,000
Use FRS Query web services to integrate FRS data into partner systems	<a href="#">APIs</a>	\$75,000-\$100,000
Integrate state/tribal/territorial/local data into FRS	FacID	\$75,000-\$100,000
Integrate FRS data into state/tribal/territorial/local system	FacID	\$75,000-\$100,000

**More Information:**

Facility Registry Service: <http://www.epa.gov/frs>

FRS Data Resources: <https://www.epa.gov/frs/frs-data-resources>

Facility on the Exchange Network: <https://www.epa.gov/frs/frs-exchange-network>

## 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 [EN](#).

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 \(SMEs\)](#) 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 in costs (see [Evaluation Criteria 4C](#) and the [‘Overview of Project Budget’ on Page E-4](#)).

#### **Foundational EN Shared Services**

<a href="#">Virtual Exchange Service (VES)</a> .....	B - 2
<a href="#">Shared CROMERR Services (SCS)</a> .....	B - 4
<a href="#">Enterprise Identity Bridge (Identity Management)</a> .....	B - 7
<a href="#">Substance Registry Services (SRS)</a> .....	B - 9
<a href="#">E-Enterprise Portal</a> .....	B - 11
<a href="#">Laws and Regulations Service (LRS)</a> .....	B - 13

## Virtual Exchange Service (VES)

### 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 EN partners needing 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. VES also supports [RESTful service](#) that provides a greater ease of use for developers to integrate other applications with VES.

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 exiting 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 Service Administrator 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 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 adopted by EN partners and will be used for application evaluation purposes:

Data Flow	Services	Implementation Difficulty	Estimated VES Implementation Cost
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 (SCS)

### Funding Opportunity Purpose:

The purpose is 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 building 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 equivalent to being 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. EPA is now working with the Enterprise Identity Management Team to support the sharing of SCS end user identities which result in reduced burden to users and [E-Enterprise](#) partners in registering and managing duplicate identities.

### **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 building 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 equivalent to being 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 <https://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 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. EPA will provide the necessary information for completing this process.*

## Enterprise Identity Bridge (Identity Management)

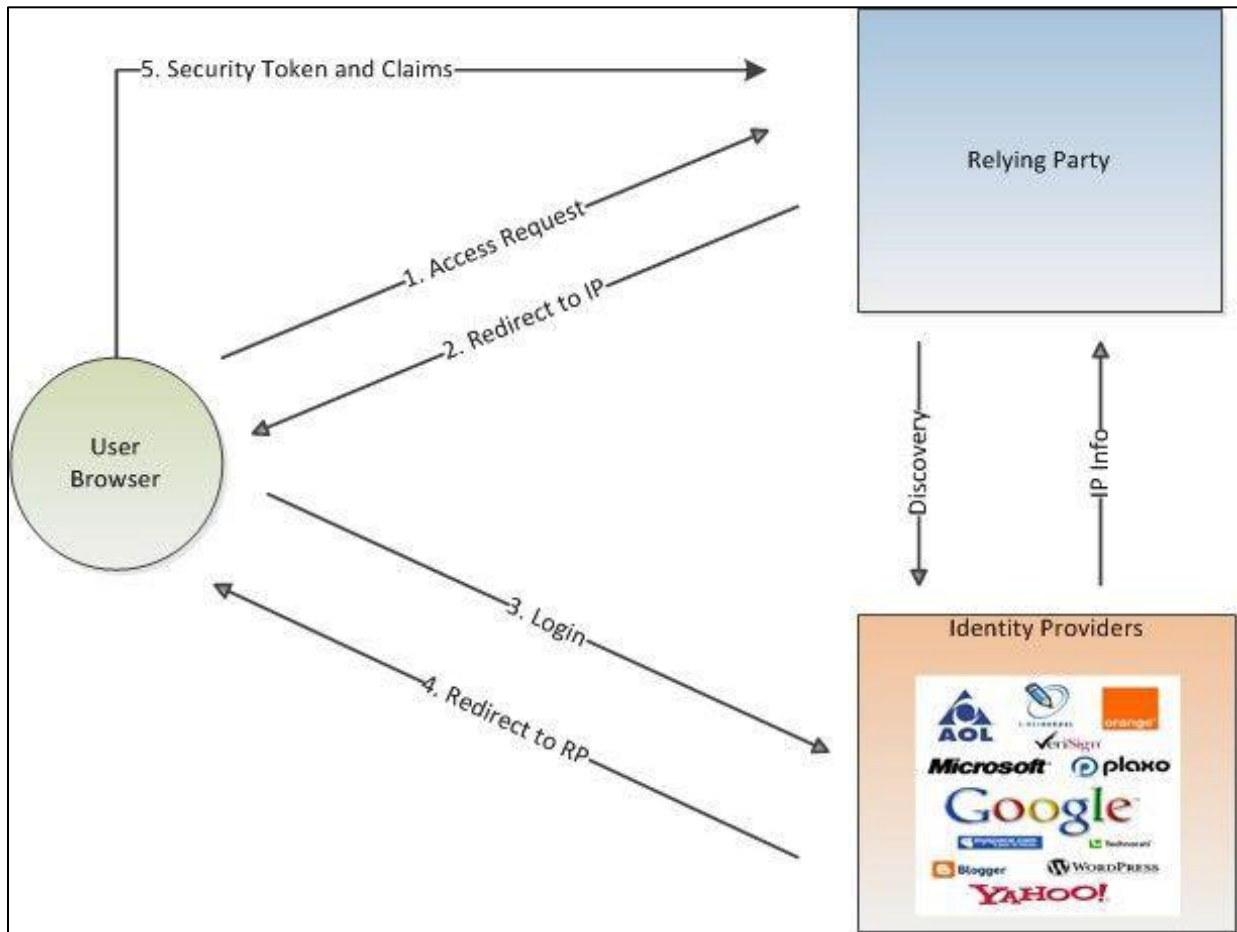
### Funding Opportunity Purpose:

The purpose is to increase the number of EN partner domains 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 duplicating 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 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 and tribal 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 making 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:**

Three states have test implementations they plan to push into production. More EN partners are expected to use this service for traversing across partner E-Enterprise portals which will further support a portal interoperability architecture among [EE](#) partners. The New Mexico Environmental Department and EPA are also in the process of deploying the next level of identity management that includes sharing CROMERR identities across participating partners. This significantly reduces identity management efforts on the E-Enterprise user community in registering and supporting duplicate identities for users that conduct business with multiple partners.

**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.
- **Integrate your own existing Open ID / Open ID Connect Identity provider interface into the Identity Bridge**  
Registration of your interface with the bridge so 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:

Programming Environment		Estimated Integration Cost
PHP	Identity Provider	\$50,000
	Relying Party	\$50,000
.NET	Identity Provider	\$25,000
	Relying Party	\$25,000
Java	Identity Provider	\$50,000
	Relying Party	\$50,000

## Substance Registry Services (SRS)

### Funding Opportunity Purpose:

To improve the quality of chemical and biological identification 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 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.
- Helps manage information about 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 containing basic information such as Chemical Abstract Service (CAS) name and number. SRS records include the many synonyms of substances, which can help users discover substances of interest. There are also links to health and safety fact sheets developed by EPA, states, other federal agencies and international organizations. In addition, SRS catalogs substances into programmatic and statutory/regulatory lists.

There are several services available for use by partner systems. To improve 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 links from their websites to individual SRS records. SRS also has a search [widget](#) that partners can incorporate into their web pages.

### Status and Plans:

[Web services](#) are available for use in partner systems to pull information from SRS for integration into online reporting forms or other tools or for displaying substance lists on their websites. The Toxics Release Inventory and the Chemical Data Reporting (CDR) are two examples of programs having 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 retrieves 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: [https://ofmpub.epa.gov/sor\\_internet/registry/substreg/LandingPage.do](https://ofmpub.epa.gov/sor_internet/registry/substreg/LandingPage.do)

### 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.
- Integrate SRS web services into the online reporting form of a state or tribal system or other tool to improve the data quality and/or help submitters report correct substance information.

**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 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 tracking or regulating the substance and the synonym(s) used by those lists. Multi-substance queries are also available, as well as services facilitating 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 an integration platform supporting the way the public, regulated community and co-regulators conduct environmental transactions and access web resources about environmental conditions. 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 customize user experiences (<https://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 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 shared and consumed by other partners and the E-Enterprise Portal.

A prime example of a partner shared application is “Be-Well Informed” in the E-Enterprise Portal which includes information and resources provided by multiple partners and allows for partners to manage their own environmental data requirements.

### Status and Plans:

EPA launched the E-Enterprise Portal prototype 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 accomplishing 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 helping 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 shareable to the maximum extent (build, host, maintain once and use many times) across multiple partner communities.

**Cost Estimates:**

EPA will consider grant opportunities low in complexity and cost in development and operations to achieve the above results as minimal viable products 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 applicants will review the following websites for opportunities to reuse existing services or propose new services promoting interoperability and improved customer experience among E- Enterprise and Exchange Network partners.

- E-Enterprise Community Inventory Platform at <https://www.eecip.net/Home?ReturnUrl=%2f>
- Reusable Component Services (RCS) at <http://www.exchangenetwork.net/data-exchange/rcs/>

## Laws and Regulations Services (LRS)

### Funding Opportunity Purpose:

To increase the ability of the states, tribes, territories, industry and the public to discover regulations 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 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 overseeing 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 Part 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 law or regulation (PDF, HTML)- The link to the PDF or HTML document providing the citation, and/or summary information about the law or the regulation.
- Publication Date - The date the document (see above bullet) was made available to the public.
- 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 the information could easily be shared with EN partners.

### Cost Estimates:

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

### Shared Services/Reusable Components Available:

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

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

## Appendix C: Strengthening Partner Information Management Capabilities

The [Exchange Network](#)'s (EN) sustainability depends on partners' capacity to manage their information in a way allowing 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, facilitating electronic reporting, and sharing those via services. They also often do not have an operational knowledge of the EN or its relevance to their environmental management programs. This hinders them from taking advantage of the many EN features useful to their environmental program planning and decision making in more cost-effective ways. Additional information is provided to assist first time applicants under [Section I-F: Identifying Mentors](#).

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 Applications-*

Territories, tribes and [inter-tribal consortia](#) are eligible to apply for individual capacity building grants enhancing the applicant's environmental programs and the applicant's ability to manage and share environmental data electronically with EN partners and tribal citizens. Applications must identify [outputs](#) which will increase the applicant's ability to share environmental information electronically with EPA and other EN partners and tribal citizens. Examples of a priority data system include the development of a backend database and tools for entering/moving/checking the included data or implementing an intra-tribal data exchange. Applications 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 Applications-*

Additionally, territories, tribes and [inter-tribal consortia](#) are eligible to apply for partnership grants which must include one or more partners. Additional eligibility requirements for partnership grants can be found in [Section III-D](#).

Applicants may apply for a collaborative capacity-building grant **up to \$400,000**, if the partnership eligibility criteria outlined in Section III-D is met.

## Appendix D: Promoting Reuse of Exchange Network Partner Products

The [E-Enterprise/Exchange Network](#) 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. As outlined in [Section VI-B](#), the EPA EN Grant Program continues to require grant applicants to 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.

To ensure that products and services are available for EN partner use and/or collaboration, Exchange Network grant applicants must [commit to register](#) any newly developed resources (required since 2011) and the reuse of existing resources (required since 2018).

Applicants may use several tools to help identify opportunities to reuse or build on the work of other partner agencies:

- **Search past EN grant projects on the EPA Exchange Network Grants website**  
Past project records on the EN Grants website now contain information, where available, on reusable components that were developed as part of the project. To find any registered reusable components follow these steps:
  - Visit <https://www.epa.gov/exchangenetwork/previous-exchange-network-grant-projects> and select a link for the fiscal year you would like to search.
  - In the PDF file, examine the column marked “Registered Components”. Projects that have components registered in EPA’s Shared Services Resource Catalog (SSRC) will include a hyperlink in that column.
    - Components previously registered in [RCS](#) have been migrated to SSRC
  - Click the hyperlink to view the project record in the SSRC that describes registered components associated with the project.
- **Search EECIP to find project ideas, project partners, and reuse opportunities**  
The E-Enterprise Community Inventory Platform or EECIP (<https://www.eecip.net>) 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 and identify organizations for potential EN grant partnerships.
- **Search the SSRC to find potentially reusable code, services, software, and other tools**  
The Shared Services Resource Catalog (SSRC) is part of EPA’s System of Registries (<https://sscatalog.epa.gov/sharedservicecatalog/search>). 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 others. SSRC has a searchable interface with which users can search for existing data and IT assets, grouped by resource types of similar assets. Anyone can search these resources by going to [the SSRC public website](#), which hosts all publicly viewable resources without requiring registration or a password.



## Appendix E: Detailed Instructions for Preparing and Submitting Applications

Applicants for the FY 2020 [Exchange Network](#) Grant program must submit an application package to EPA by **11:59 PM Eastern on Friday, April 10, 2020**. Except as noted on [Page E-8: ‘Detailed Instructions for Submitting Applications’](#), applicants must apply electronically through [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, and the applicable forms and attachments listed below in the ‘overview of application materials.’

### Overview of Application Materials:

#### Mandatory Documents:

- |   |   |
|---|---|
| (1) Cover Letter (use ‘Other Attachments Form’ to submit) | (see optional template <a href="#">here</a> ) |
| (2) Project Narrative Attachment Form                     | (see optional template <a href="#">here</a> ) |
| (3) Budget Narrative Attachment Form                      | (See optional template <a href="#">here</a> ) |
| (4) Application for Federal Assistance                    | (Standard Form (SF-424)                       |
| (5) Budget Information for Non-Construction Programs      | (SF-424A)                                     |
| (6) Key Contacts Form                                     | (EPA Form 5700-54)                            |
| (7) Pre-award Compliance Review Report                    | (EPA Form 4700-4)                             |

#### Additional Attachments (use ‘Other Attachments Form’ to submit), if applicable (see guidance [here](#)):

- (A) Personnel attachments, including staff resumes
- (B) Negotiated Indirect Cost Rate Agreement
- (C) Additional Information for Inter-Tribal Consortium
- (D) Formal Project Partners:
  - Roles & Responsibilities
  - Distribution of Funds
- (E) List of Exchange Network Assistance Agreements

#### **A Note to Applicants Regarding Our Provided Templates**

Optional templates have been provided as applicant tools for the Cover Letter ([Appendix G](#)), Project Narrative ([Appendix H](#)) and Budget Narrative Attachment Form ([Appendix I](#)).

Though applicants are not required to follow these templates, **their use is recommended** to help ensure that all required information is appropriately captured within each of these documents. This will improve a reviewer’s ability to locate critical information and award points appropriately. Improved ease-of-use will likewise help EPA program staff and the grants office to process grant awards more quickly.

Please note that the **blue text enclosed in brackets** within the templates signifies an area the applicant should edit and/or expand upon, while the **black italicized text** provides helpful notes/context for the applicant to reference while drafting their application. All blue text should be changed to black once edited (or removed if not relevant) and the italicized notes deleted in the final submitted documents.

When utilizing the optional templates, applicants should feel free to expand upon and alter the suggested text as deemed necessary for their application.

## Cover Letter

The application 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, which includes:

- Applicant information
- Project title
- [Type of assistance](#) 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
- Signature of executive level [Authorized Organizational Representative](#) (AOR).

**An optional cover letter template is available in [Appendix G](#).**

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## Project Narrative

Applicants must include a project narrative or work plan which describes their proposed project in detail and clearly addresses each grant scoring criterion as outlined on [Section V-A Evaluation Criteria](#). Grant review panels will score applications based on how well they meet these criteria.

Please note **the project narrative cannot exceed ten single-spaced pages in length**. Number each page of your workplan and note EPA grant reviewers will not review any work plan elements appearing after the tenth page.

### Tips for Writing a Successful Project Narrative:

- Strive for clear and succinct language-

Applicants should address each section of the project narrative in detail. The use of clear and concise language is highly recommended to ensure the best comprehension and scoring by EPA program staff and grant reviewers.

- Include headers for each of the eight project narrative sections-

To allow for easy review panel navigation throughout the project narrative, applicants are requested to include the section header in bold font above the section text in size 11 or 12 font (serif or sans serif).

- Use standard margins and fonts-

Applications should use 11-point fonts (serif or sans serif), with the exception of section headers (see above) and the proposal title, which may be increased to size 12. Please use 1-inch margins and single line spacing.

- Limit the Terminology to “Goals, Outputs and Outcomes”-

For improved clarity and consistency, applicants are requested to use the terms “goals”, “outputs”, and “outcomes” in their project narratives. The use of synonyms such as “objectives”, “targets”, “tasks” or “milestones” is often confusing for reviewers and makes it more difficult to properly score applications.

**An optional project narrative template is available in [Appendix H](#).**

The Project Narrative must include the following sections, in this order:

**1. Project Description (see proposed template section [here](#))**

The purpose of this section is to help reviewers better understand what is being proposed. Applicants should include a brief description of the applicant’s organization and scope of work, the [EN priorit\(ies\)](#) and opportunit(ies) that the applicant is applying under, an overview of the major outputs and outcomes to be accomplished in the project, and a brief description of how the project would meet the applicant’s business and/or administrative need(s).

**2. Project Goals, Outputs, and Outcomes (see proposed template section [here](#))**

The purpose of this section is to state the project’s support of [EPA Strategic Goal 3, Objective 3.4 ‘Streamline and Modernize’](#) and to establish the project’s alignment with language found under this objective. Applicants should also detail how their project supports other [EPA strategic goals](#) (as applicable) and note any anticipated [environmental results](#).

Applicants should also provide a detailed project plan in this section, with affiliated costs and deadlines, so that applicants can track and report on their project’s progress. This project plan should be broken down by **each** project [goal](#), its cost, and all [output\(s\)](#), output cost(s), output deadline(s), and [outcome\(s\)](#) affiliated with that goal.

Applicants are encouraged to provide their detailed project plan using the table template found on [Page H-2](#).

**3. Roles, Responsibilities, and Qualifications of Key Personnel & Any Project Partners (see proposed template section [here](#))**

The purpose of this section is to list the key personnel who are going to work on the project, their qualifications for the role, and their project responsibilities. Applicants should include any key personnel for formal partners, technology vendors, and/or contractors.

In the case of staff not yet hired, applicants should note the role title, the qualifications/experience they will need, and their future project responsibilities.

**4. Programmatic Involvement and Mentor Support (see proposed template section [here](#))**

Any EN grant projects that are not solely IT-focused must have substantive environmental program participation. The purpose of this section is for the applicant to describe that contribution, including programmatic collaboration, involvement, and management of the project. This should also include a list of programmatic participants, positions, and roles in the project.

If an applicant’s project does not include programmatic involvement, the applicant should explain in detail why this was not deemed applicable and/or necessary for the proposed grant project.

Applicants should also note in this section whether they are choosing to [utilize a mentor for their project](#) and, if applicable, identify the mentoring organization and the nature of their guidance.

**5. Commitment to Reuse (see proposed template section [here](#))**

Applicants should not spend grant funds on tools already developed and available for EN partner use. The purpose of this section is for the applicant to clearly identify which existing project-appropriate tools and [shared services](#) will be incorporated into the project, including [foundational shared services](#) (as applicable).

Applicants must also explicitly [commit to register](#) the reuse of these tools, as well as register any new tools developed in the project. If no products have been identified for reuse in this project, applicants should explain **in detail** why this is the case.

**6. Technical Understanding (see proposed template section [here](#))**

The purpose of this section is for the applicant to demonstrate that they and/or their partners have the technical understanding to perform the proposed work and that the data and/or IT management solutions as identified are appropriate for the project.

Applicants should identify and provide a brief description for each data/IT management/technological solution they will be utilizing in their project. For each solution identified, applicants should also detail why this technology is appropriate for the project, which business/administrative need(s) it helps to meet, and why the applicant feels confident in their ability to successfully implement and maintain the solution.

If specific solutions and/or technological aspects of the project are not yet known (e.g. if the applicant is using a contractor), please describe in detail why this is the case and how future technical choices will be made.

**7. Overview of Project Budget (see proposed template section [here](#))**

Applicants should have identified budget amounts for each [goal](#) and each [output](#) within the Project Goals, Outputs, and Outcomes section. The purpose of this section is for applicants to explain why the proposed budget is appropriate and how it relates to the budget estimates provided in this Solicitation Notice. For applicants applying under opportunities that do not include cost estimates or for projects that include costs that exceed EPA estimates, a detailed cost rationale explaining how these estimates were calculated should be included.

Applicants should also list and explain pertinent budgetary information, including (as applicable):

- Direct grants funding vs. [in-kind support](#)
- Breakdown of funds for primary grantee vs. funds for project partners
- Contractual costs and the associated contract vehicle/acquisition method
- [Indirect costs](#) with the associated [ICR rate](#) and expiration date
- Amount requested in [equipment](#) and [supplies](#)
- Travel costs and each travel destination, traveler name, and cost per participant

**8. Past Performance (see proposed template section [here](#))**

Applicants should clearly indicate in this section whether they have received a prior Exchange Network grant or if they have never received an EN grant. Applicants should identify these prior EN grant awards and also note any EPA [assistance agreements](#) performed in the last 3 years.

Additionally, applicants should identify any tools, resources, services and/or dataflows they have registered in [RCS/ENDS/SSRC](#), produced by EN grant funds since 2011.

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## Mandatory Grant Attachments:

- 1) [Cover Letter](#) (use ‘Other Attachments Form’ to submit)
- 2) [Project Narrative Attachment Form](#)
- 3) **Budget Narrative Attachment Form**
  - This form is used to attach your budget narrative document.
  - There is an optional template for the budget narrative [here](#).
  - Please note that the document submitted under this form is separate from the Project Narrative.
  - This budget narrative is required to help the grants office process the award, should the project be selected.
  - Please note that applicants must not include [management fees](#) or similar charges in excess of the [direct costs](#) and [indirect costs](#) in their project budgets.
- 4) **Application for Federal Assistance (SF 424)**
  - Complete the form.
  - Please note 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.
  - Please include the county/parish in the applicant address on line 8(d).
  - Please note that congressional district should be 2-digit code on line 16(a).
  - Please list the project start date as October 1, 2020 and use the entire project period of performance, with an end date of September 30, 2023 on line 17(a & b).
- 5) **Budget Information for Non-[Construction](#) Programs (SF-424A)**
  - Complete the form.
  - 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.
  - Total amount of [direct costs](#) should be shown on line 6(i) and on line 21.
  - 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.
    - See the ‘[Negotiated Indirect Cost Rate Agreement](#)’ section on page E-6 for more details
  - Note that the numbers and totals depicted on this form **must** exactly match those depicted on the [Budget Narrative Attachment form](#).
  - Please do not include monetary amounts less than one dollar (round all budget items to the nearest whole number).
- 6) **Key Contacts Form (EPA Form 5700-54)**
  - Complete the form.
- 7) **Pre-Award Compliance Review Report (EPA Form 4700-4)**
  - Complete the form.

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## **Additional Attachments, as applicable:**

Use the 'Other Attachment Form' to submit the following documents, as applicable:

### **1) Personnel Attachments:**

*Though not technically required, this is highly recommended to be included in the application.*

- 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 managing the proposed project.
  - For applicants 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 the position.

### **2) Negotiated Indirect Cost Rate Agreement**

*This is required for any applicants charging indirect costs.*

- **Indirect costs (IDCs) may be budgeted and charged by recipients of Federal assistance agreements** in accordance with [2 CFR Part 200](#). EPA's [Indirect Cost Policy for Recipients of EPA Assistance Agreements](#) (IDC Policy) implements the Federal regulations, and the following applies to all EPA assistance agreements, unless there are [statutory or regulatory limits on IDCs](#).
  - Each biographical sketch should outline the education, work history and knowledge/expertise of the individual 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 the position.
- In order for an assistance agreement recipient to use EPA funding for indirect costs, the IDC category of the recipient's assistance agreement award budget must include an amount for IDCs and at least one of the following must apply:
- With the exception of "exempt" agencies and Institutions of Higher Education as noted below, all recipients must have one of the following current (not expired) IDC rates, including IDC rates that have been extended by the cognizant agency:
  - Provisional;
  - Final;
  - Fixed rate with carry-forward;
  - Predetermined;
  - 10% de minimis rate authorized by 2 CFR 200.414(f)
  - EPA-approved use of one of the following:
    - 10% de minimis as detailed in section 6.3 of the IDC Policy; or
    - Expired fixed rate with carry-forward as detailed in section 6.4.a. of the IDC Policy.
- "Exempt" state or local governmental departments or agencies are agencies that receive up to and including \$35,000,000 in Federal funding per the department or agency's fiscal year, and must have an IDC rate proposal developed in accordance with [2 CFR 200 Appendix VII](#), with documentation maintained and available for audit.
- Institutions of Higher Education must use the IDC rate in place at the time of award for the life of the assistance agreement (unless the rate was provisional at time of award, in which case the rate will change once it becomes final). As provided by [2 CFR Part 200, Appendix III\(C\)\(7\)](#), the term "life of the assistance agreement", means each competitive segment of the project. Additional information is available in the regulation.

- IDCs incurred during any period of the assistance agreement that are not covered by the provisions above are not allowable costs and must not be drawn down by the recipient. Recipients may budget for IDCs pending approval of their IDC rate by the cognizant Federal agency or an exception granted by EPA under section 6.3 or 6.4 of the IDC Policy. However, recipients may not draw down IDCs until their rate is approved or EPA grants an exception.
- The IDC Policy does not govern indirect rates for subrecipients or recipient procurement contractors under EPA assistance agreements. Pass-through entities are required to comply with [2 CFR 200.331\(a\)\(4\)](#) when establishing indirect cost rates for subawards.
- See the [Indirect Cost Guidance for Recipients of EPA Assistance Agreements](#) for additional information.

### 3) Additional Information for Inter-Tribal Consortium:

*This is required for any [inter-tribal consortia](#) applying for an Exchange Network grant*

- Inter-tribal consortia applicants must include attachment(s) showing:
  - A formal partnership exists among the Tribal governments' members of the inter-tribal consortium and the majority of the members are federally recognized Indian tribes
  - The consortiums federally recognized tribal members have authorized the consortium to apply for and receive assistance from the EN Grant Program.

### 4) Formal Project Partners – Roles and Responsibilities and Distribution of Funds:

*This is required for any projects with [formal partners](#) requesting over \$200,000 in grant 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 partners, describe the method for doing so.
- EN grant projects including one or more formal partners can have budgets up to \$400,000, if the partnership eligibility criteria outlined in [Section III-D](#) is met.
- 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 \$200,000 maximum funding for a single-jurisdiction grant and are not eligible for EN [assistance agreements](#).

### 5) List of Prior Exchange Network [Assistance Agreements](#):

*This is required for any applicants who have received prior Exchange Network grants*

- Provide a list of previously awarded assistance agreements since 2002.

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## Detailed Instructions for Submitting Applications Through Grants.gov

### Requirements to Submit Through [Grants.gov](https://www.grants.gov) and Limited Exception Procedures:

Applicants, except as noted below, must apply electronically through [grants.gov](https://www.grants.gov) under this funding opportunity based on the [grants.gov](https://www.grants.gov) instructions in this announcement. If an applicant does not have the technical capability to apply electronically through [grants.gov](https://www.grants.gov) because of limited or no internet access which prevents them from being able to upload the required application materials to [grants.gov](https://www.grants.gov), the applicant must contact [OMS-ARM-OGDWaivers@epa.gov](mailto:OMS-ARM-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](https://www.duns.com))
- Organization's Contact Information (email address and phone number)
- Explanation of how they lack the technical capability to apply electronically through [grants.gov](https://www.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](https://www.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 are 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 application 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](https://grants.gov) for submissions for any succeeding calendar year. For example, if there is a competitive opportunity issued on December 1, 2019 with a submission deadline of January 15, 2020, the applicant would need a new exception to submit through alternative methods beginning January 1, 2020. Please note 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](https://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 the individual to begin the registration process as soon as possible.

Please note the registration process also requires 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 all registration requirements are met in order to apply for this opportunity through grants.gov and should ensure all such requirements have been met well in advance of the submission deadline. Registration on [grants.gov](https://grants.gov), [SAM.gov](https://sam.gov) and [DUNS](#) number assignment is FREE.

Applicants need to ensure the [AOR](#) who submits the application through [grants.gov](https://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://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](https://grants.gov). Go to grants.gov and then click on "Search Grants" at the top of the page and enter the Funding Opportunity Number, EPA-OMS-20-01 or the CFDA number applying 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](https://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 **Friday, April 10, 2020 at 11:59 PM ET**. Please allow for enough time to successfully submit your application and allow for unexpected errors requiring you to resubmit.

Please submit all the mandatory application materials and any applicable additional application documents, detailed in [Appendix E](#), using the grants.gov application package:

#### Mandatory Documents

- |  |   |
|--|---|
| (1) Cover Letter (use 'Other Attachment Form' to submit) | (see optional template <a href="#">here</a> ) |
| (2) Project Narrative Attachment Form                    | (see optional template <a href="#">here</a> ) |
| (3) Budget Narrative Attachment Form                     | (See optional template <a href="#">here</a> ) |
| (4) Application for Federal Assistance                   | (Standard Form (SF-424)                       |
| (5) Budget Information for Non-Construction Programs     | (SF-424A)                                     |
| (6) Key Contacts Form                                    | (EPA Form 5700-54)                            |
| (7) Pre-award Compliance Review Report                   | (EPA Form 4700-4)                             |

Additional Attachments (submitted using the Other Attachment Form), if applicable (see guidance [here](#)):

- (A) Personnel attachments, including staff resumes
- (B) Negotiated Indirect Cost Rate Agreement
- (C) Additional Information for Inter-Tribal Consortium
- (D) Formal Project Partners:
  - Roles & Responsibilities
  - Distribution of Funds
- (E) List of Exchange Network Assistance Agreements

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 Erika Beasley, at 202-566-2530 or [beasley.erika@epa.gov](mailto:beasley.erika@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 occur 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 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, 7 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](https://www.grants.gov) issues a "case number" upon a request for assistance.

### **Transmission Difficulties:**

If transmission difficulties resulting 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 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 [beasley.erika@epa.gov](mailto:beasley.erika@epa.gov) with the FON in the subject line. If you are unable to email, contact Erika Beasley at 202-566-2530. Be aware EPA will only consider accepting applications that were unable to transmit due to grants.gov or relevant [SAM.gov](https://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](https://www.sam.gov) or [grants.gov](https://www.grants.gov) is not an acceptable reason to justify acceptance of a late submittal.

If you are experiencing problems resulting in an inability to upload the application to [grants.gov](https://www.grants.gov), it is essential to call 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 Erika Beasley, at 202-566-2530 and [beasley.erika@epa.gov](mailto:beasley.erika@epa.gov).

### **Unsuccessful transfer of the application package:**

If a successful transfer of the application cannot be accomplished even with assistance from [grants.gov](https://www.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 [beasley.erika@epa.gov](mailto:beasley.erika@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.

### **Grants.gov rejection of the application package:**

If a notification is received from [grants.gov](https://www.grants.gov) stating the application has been rejected for reasons other than late submittal and it is too late to reapply, promptly send an email to [beasley.erika@epa.gov](mailto:beasley.erika@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 successful submission through [grants.gov](https://www.grants.gov) or via email does not necessarily mean your application is eligible for award.**

## Appendix F: Pre-Submission Checklist

The below checklist was designed to help applicants ensure all required documents in their application package are included. In addition, the checklist helps to prevent errors commonly seen in prior submissions.

The successful completion of the checklist will not guarantee a high application score or ensure grant funding, but it will help applicants to avoid unnecessary point loss and to complete application packages.

### General

- Have you either followed the optional templates provided for the [Cover Letter](#), [Project Narrative](#), and [Budget Narrative Attachment Form](#) (as recommended) **OR** have you double-checked that all information outlined in [Appendix E](#) is captured in your documents?
- If using the templates, have you changed all blue text to black after editing and deleted the template notes provided in black italicized text?
- Do the numbers captured in [section two](#) of your Project Narrative exactly match the numbers in your [Budget Narrative Attachment Form](#) **AND** the numbers in your project's [424A form](#)?
- Do any of your budget estimates include change (monetary amounts less than 1 dollar)? If they do, please round these amounts up or down to the nearest whole number.
- If this is a formal [partnership grant](#) requesting over \$200,000, are the partners located in separate state, territorial or tribal governments? (A partnership between an environment and a health department within the same state is not an eligible for the partnership funding threshold).

### Cover Letter:

- Has your cover letter been signed by an [authorized organizational representative](#) (AOR)?
- If you are using a [PPG](#), have you made note of that in the cover letter and included the relevant grant number?
- If you are working with any [formal partners](#), have you noted them in your cover letter?
- If you are working with a [mentor](#), have you noted them in your cover letter?

### Project Narrative:

- Is your project narrative a maximum of 10 pages?
- Does your project narrative include all eight of the sections noted [here](#), marked with bold section headers?
- Within [section two](#) of the project narrative, have you stated your project's support of [EPA Strategic Goal 3, Objective 3.4 'Streamline and Modernize'](#) and described how project output(s) link to language found under this objective? '
- Within [section two](#) of the project narrative, does the sum of the outputs in your budget table equal to the total amount budgeted for that goal?

- Within [section five](#) of the project narrative, have you included a commitment to register statement?
- Within [section eight](#) of the project narrative, have you noted any prior EN grants OR stated you have never received a prior EN grant?

**Budget Narrative Attachment Form:**

- If applicable to your application, are [subaward](#) costs captured within the ‘other’ budget category (and **not** included under personnel or contractual costs?)
- Did you include travel costs to the National EE/EN Conference? Please note this is only allowable for tribal applicants (as this is covered by ECOS for states and territories).
- Do your budget narrative categories exactly match the budget categories (section b) on the 424A form?
- If applicable to your application, are training costs captured within the ‘other’ budget category (with the exception of travel costs to/from the training, which should be captured under ‘travel’)?

**Other Mandatory Attachments:**

- Does your 424 form show a project start date of October 1, 2020 and an end date of September 30, 2023?
- Have you included your county/parish on your 424 form (line 17 a & b)?
- Is the congressional district noted on your 424 form depicted as a 2-digit code (line 16 a)?
- Does the DUNS number listed on the 424 form belong to the organization also listed on the 424 form?

**Additional Attachments (as applicable):**

- If you are charging [indirect costs](#), have you attached an [Indirect Cost Rate Agreement](#), following the guidance on [page E-6](#)?

## Appendix G: Optional Cover Letter Template (1 Page)

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*\*Note: Blue text enclosed in brackets signifies sections of text that should be edited/expanded upon*

*\*Note: The cover letter may be looked at by reviewers for scoring*

*\*\*Remember: Submit the cover letter using the Other Attachments Form*

---

[Insert Organizational Letterhead]

[Date]

Erika Beasley  
EN Grants Program Manager - OIM/IESD/IEPB  
U.S. Environmental Protection Agency Office of Management Services  
1200 Pennsylvania Ave., NW, Mail Code 2824-T Washington, DC 20460

Dear Ms. Beasley:

I am pleased to submit the [State, Tribe or Territory Name] [Name of Department or Agency] application for a [type of assistance: grant, cooperative agreement, PPG], entitled [project name], under the FY 2020 Exchange Network Grant Program. This application is seeking [dollar amount of funds] 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]. [Our mentor is: name mentor].

[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,

[Signature of Authorized Organizational Representative]  
[Name/Title of Authorized Organizational Representative]

## Appendix H: Optional Project Narrative Template (Maximum of 10 Pages)

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- \*Note: Blue text enclosed in brackets signifies sections of text that should be edited/expanded upon*  
*\*Note: Do NOT include any of the italicized text marked with 'note' in your final project narrative*  
*\*Note: Applicants using this template should feel free to expand and edit the suggested text as desired*  
*\*\*Remember: Submit the project narrative using the Project Narrative Attachment Form*
- 

[Project Title]  
[State, Tribe or Territory Name] [Name of Department or Agency]

FY 2020 Exchange Network Grant Program  
Project Narrative  
[Month][Day], 2020

### 1) Project Description

The [State, Tribe or Territory Name] [Name of Department or Agency]'s [program] submits this application under the opportunity [Name of Opportunity in EN Solicitation Notice]. If successful, this application will allow the [Department/Agency name or abbreviation] to [brief description of work to be accomplished].

[Include brief history on Department/Agency and scope of work].

[Include a brief overview of department/agency need and/or the reason for requesting the grant].

Funding from this exchange network grant will enable [department/agency name or abbreviation] to achieve the following major outputs or outcomes:

- [List major output/outcome]  
Provide short description of output/outcome and benefits to agency/department and/or public
- [List major output/outcome]  
Provide short description of output/outcome and benefits to agency/department and/or public

*-Note: Expand the number of major outputs/outcomes as needed-*

### 2) Project Goals, Outputs, and Outcomes

This project's goals, outputs, schedule, and outcomes are provided below in **Table 1. Goals, Outputs, and Outcomes**. More detailed descriptions of the outputs and outcomes for each goal, and how these outputs align with EPA priorities and [State, Tribe, or Territory Name] [Name of Department or Agency]'s business and administrative needs, are described below. The goals and outputs of this project support EPA's FY 2018-22 Strategic Plan **Goal 3: Greater Certainty, Compliance, and Effectiveness, Objective 3.4: Streamline and Modernize**, as well as [list any additional supported EPA Strategic Plan goals, as applicable]. [Describe the nature of this project's support of EPA Strategic Goal 3.4 and its support of any additional EPA strategic goals, as applicable]. Furthermore, the following environmental results are also supported by this project: [list and describe any expected environmental results].

**Goal One: [Enter Goal Name]**

This Goal, along with its associated outputs and outcomes, is consistent with **EPA EN Grant Priority [Number] [Name of EN Grant Priority]**.

Goal 1 Outputs and Outcomes

- 1.1 [Enter Output Name] - [Enter Scheduled Completion Date]
  - [Include bulleted description of outputs and supported business/administrative needs]
  - [Include brief rationale of why scheduled completion date was selected/deemed appropriate]
- 1.2 [Enter Output Name] - [Enter Scheduled Completion Date]
  - [Include bulleted description of outputs and supported business/administrative needs]
  - [Include brief rationale of why scheduled completion date was selected/deemed appropriate]
- 1.3 [Enter Output Name] - [Enter Scheduled Completion Date]
  - [Include bulleted description of outputs and supported business/administrative needs]
  - [Include brief rationale of why scheduled completion date was selected/deemed appropriate]

**Goal Two: [Enter Goal Name] [Enter Total Goal Budget]**

This Goal, along with its associated outputs and outcomes, is consistent with **EPA EN Grant Priority [Number] [Name of EN Grant Priority]**.

Goal 2 Outputs and Outcomes

- 2.1 [Enter Output Name] - [Enter Scheduled Completion Date]
  - [Include bulleted description of outputs and supported business/administrative needs]
  - [Include brief rationale of why scheduled completion date was selected/deemed appropriate]
- 2.2 [Enter Output Name] - [Enter Scheduled Completion Date]
  - [Include bulleted description of outputs and supported business/administrative needs]
  - [Include brief rationale of why scheduled completion date was selected/deemed appropriate]

*-Note: Expand the number of goals and outputs as needed-*

Table 1. Goals, Outputs, and Outcomes				
Goal	Output	Output Budget	Scheduled Completion Date	Outcome(s)
Goal 1: [Name the Goal]	1.1 [Enter Output]	\$ [Enter Budget for Specific Output]	[Enter Date]	[Enter outcome(s) from this goal/the outputs listed]
Total Goal Budget: \$[XX,XXX]	1.2	\$		
	1.3	\$		
Goal 1: [Name the Goal]	2.1 [Enter Output]	\$ [Enter Budget for Specific Output]	[Enter Date]	[Enter outcome(s) from this goal/the outputs listed]
Total Goal Budget: \$[XX,XXX]	2.2	\$		

*-Note: Please ensure that the sum of the output budgets is equal to the total budget for that goal-*



### 3) Roles, Responsibilities, and Qualifications of Key Personnel & Any Project Partner(s)

**Project Manager:** [Name] [Current Job Title] [Affiliated Organization/Department/Agency]

[Name] will serve as the project manager for the duration of this grant project. [He/She] was selected for the role based on [include a detailed summary of relevant experience and qualifications].

[His/Her] project responsibilities include:

- [Enter bulleted list of job responsibilities]

**[Enter Project Role]:** [Name] [Current Job Title] [Affiliated Organization/Department/Agency]

[Name] will serve as the [project role] for the duration of this grant project. [He/She] was selected for the role based on [include a detailed summary of relevant experience and qualifications].

[His/Her] project responsibilities include:

- [Enter bulleted list of job responsibilities]

*-Note: Expand section as needed to include all relevant key personnel/ partner personnel/ contractors/ technology vendors, as applicable-*

### 4) Programmatic Involvement and Mentor Support

*-Note: Include the proposed text under either (A) or (B), as applies to your proposal*

*-Note: All proposals should include the text which addresses mentors (top of page H-4)*

*--(A) Include the following text if programmatic involvement applies to your grant proposal--*

This project will include substantive programmatic involvement from [name of involved programmatic program(s)]. [Briefly describe the program office/department mentioned and their relation to the primary applicant]. The contribution will include [describe programmatic involvement and management of the project] to address [applicable business need or knowledge gap helped by programmatic participation].

Key Programmatic Participants:

**[Name] [Current Job Title] [Affiliated Organization/Department/Agency]**

[Name] will be providing programmatic guidance in the role of [project role]. [He/She] was selected for this role based on [brief summary of relevant experience and qualifications].

[His/Her] [‘project’ and/or ‘oversight’] responsibilities include:

- [Enter bulleted list of responsibilities]

*-Note: Expand section as needed to include all relevant programmatic participants-*

*--(B) Include the following text if programmatic involvement does not apply to your grant proposal--*

The project will not include substantive programmatic involvement. This is not necessary because [provide a detailed rationale why this was not deemed applicable and/or necessary for this grant project].

*-Note: Include the following text in all proposals-*

This project [will/will not] utilize a mentor. The mentoring organization identified for this project is [State, Tribe, or Territory Name] [organization/department/agency], who was awarded a successfully completed EN grant in [award year]. This mentor is anticipated to provide valuable project guidance on [insert oversight responsibilities] based on their experience in [brief summary of relevant experience of mentor].

Primary Contact from Mentoring Organization:

[Name] [Current Job Title] [Affiliated Organization/Department/Agency]

## 5) Commitment to Reuse

The [State, Tribe or Territory Name] [Name of Department or Agency] is committed to reusing existing tools developed and available for Exchange Network partner use.

Specifically, the program will reuse the following products currently registered in the SSRC/EECIP:

- [Include bulleted list of products registered in SSRC that will be reused during this project]

*-Note: If no products have been identified for reuse in this project, applicants should explain in detail why this is the case. Additionally, applicants should note the reuse of any project-appropriate tools and shared services not registered in SSRC/EECIP and explain where this schema/code/product was located-*

This project [also includes/does not include] the [use/development] of a shared service: [list foundational shared service(s) and/or the name(s) of the service(s) to be developed]. [If developing a new service and/or utilizing a shared service not found in Appendix B, explain in detail how each is nationally scalable to meet the needs of Exchange Network Partners (see Evaluation Criterion G under Section V-A)].

*-Note: Foundational shared services are those listed in Appendix B-*

The [State, Tribe or Territory Name] [Name of Department or Agency] also commits to register any reuse of existing EN tools, as well as register any new tools as developed during the execution of this grant project.

## 6) Technical Understanding

In order to accomplish the goals and outputs as outlined in this project, [State, Tribe or Territory Name] [Name of Department or Agency] will be utilizing the following [data [and/or] IT management [and/or] technological solutions]:

- [Provide a bulleted list of data/IT management solutions and/or technology to be implemented/expanded upon through this grant project]
  - [Provide a short description of the purpose for each]

The solutions as identified above are appropriate for the project because [identify what the technology will accomplish and how this meets business/administrative needs as identified in Section 1: Project Description]. [Department/Agency name or abbreviation] is confident in its ability to implement and maintain this technology because [explain in detail, referencing key personnel and/or partner and/or contractor qualifications and experience, as applicable].

*-Note: If specific solutions and/or technological aspects of the project are not yet known (e.g. if using a contractor), please describe in detail why this is the case and how future technical choices will be made-*

*-Additionally, please expand the paragraph above (as needed) to fully address which business/ administrative needs the technology will need to meet to ensure successful completion of the project-*

## 7) Overview of Project Budget

The total budget for this project is [dollar amount], with [dollar amount] in direct grants funding and [dollar amount] in in-kind support. This project [is/is not] a partnership project. [Dollar amount] of the [total budget] are funds for project partners, [of which [dollar amount] are funds for subawardees].

The proposed project budget also includes [dollar amount] for in-house costs and [dollar amount] budgeted for contractual costs. [Contractor services have been/will be procured through: [explain contractor acquisition method/system and name the contracting vehicle if known]]

This project [is/is not] charging indirect costs [at a rate of [%]]. [This ICR is active until [insert date]]. This project is requesting a total of [dollar amount] in equipment and a total of [dollar amount] in supplies.

This project is requesting a total of [dollar amount] in travel costs. [These costs were determined by: [include explanation of how travel costs were determined] and include the following:

- [Bulleted list with **each** travel destination/conference, traveler name, and their total cost]]

### Goal One:

The budget provided for **Goal 1: [Enter Goal Name]** is appropriate for the project because [it aligns with the cost estimates provided by EPA in Appendices A & B' and/or include a **detailed** cost rationale explaining how costs were estimated].

Goal 1: Output 1.1: [Dollar Amount]  
Output 1.2: [Dollar Amount]  
Output 1.3: [Dollar Amount]  
**Total: [Dollar Amount]**

### Goal Two:

The budget provided for **Goal 2: [Enter Goal Name]** is appropriate for the project because [it aligns with the cost estimates provided by EPA in Appendices A & B' and/or include a **detailed** cost rationale explaining how costs were estimated].

Goal 2: Output 2.1: [Dollar Amount]  
Output 2.2: [Dollar Amount]  
**Total: [Dollar Amount]**

*-Note: Expand the number of goals and outputs as needed-*

## 8) Past Performance

The [State, Tribe or Territory Name] [Name of Department or Agency] has been awarded [‘no’ or number] Exchange Network assistance agreements since 2002, resulting in [‘no’ or number] products registered in RCS/ENDS/SSRC since 2011.

[[State, Tribe or Territory Name] [Name of Department or Agency] prior EN grants include:

- [Include brief overview of prior grant(s), including name, date, grant ID, project description, and relation to current grant proposal, if any]]

[The products registered in RCS/ENDS/SSRC since 2011 include:

- [Include list of products registered in RCS/ENDS/SSRC, including the affiliated grant ID]]

[[State, Tribe or Territory Name] [Name of Department or Agency] has been awarded [‘no’ or number] non-EN EPA assistance agreements since 2017.

- [Include brief overview of these assistance agreements, including the EPA grant program, project name, date, grant ID, and project description]

# Appendix I: Optional Budget Narrative Attachment Form Template

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## Budget Narrative Attachment Form Template (No Page Limit)

*\*Note: Blue text signifies sections of text that should be addressed/edited/expanded upon*

*\*Do NOT include any of the italicized text marked with 'note' in your budget narrative attachment form*

*\*\*Remember: Submit the budget narrative using the Budget Narrative Attachment Form*

---

### Budget Narrative Attachment Form

[State, Tribe or Territory Name] [Name of Department or Agency] [Project Title]

FY 20 Environmental Exchange Network Grant Program  
[Month][Day], 2020

#### Personnel:

- Include (if applicable) a bulleted list of staff positions by title with the following sub-bullets:
  - Annual salary. 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

#### Fringe:

- Identify (if applicable) the fringe benefit rate
- Identify (if applicable) the total amount charged under this category

#### Travel:

- Include (if applicable) a bulleted list with planned in-state and out-of-state trip, with the following sub bullets:
  - Number of Travelers per event
  - Calculated cost per traveler
  - Mileage
  - Per diem
  - Purpose of Travel

#### Supplies:

- Include (if applicable) a bulleted list of supplies to be purchased, the quantity, and unit cost
- Identify the category of supplies (e.g. laboratory supplies, office supplies, etc.)

#### Equipment:

- Include (if applicable) a bulleted list of equipment to be purchased, having 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.

#### Contractual

- Identify (if applicable) each proposed contract and specify its purpose and estimated cost.
  - Applicants who request in-kind services should list them here

**Other** (Note- this includes any items not covered elsewhere, such as subawards and training)

- List each item (if applicable) in sufficient detail for U.S. EPA to determine whether the costs are reasonable or allowable.

**Indirect Costs**

- List the total of requested indirect costs
- Identify (if applicable) the approved indirect cost rate and its expiration date
- Describe the base used to calculate indirect costs and list the total base amount (from which indirect costs are calculated)

**Light Food/Refreshments:**

- Include an itemized breakout of any light food and/or refreshments (if applicable) that will be purchased with federal funds and/or matching funds
  - EPA will use this to determine whether the cost is considered reasonable and necessary

<b>Total Project Budget</b>	
<b>Category</b>	<b>Budget Amount</b>
<b>Personnel</b>	<b>\$ [Total Personnel Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Personnel Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Personnel Amount]
<b>Fringe Benefits</b>	<b>\$ [Total Fringe Benefits Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Fringe Benefits Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Fringe Benefits Amount]
<b>Travel</b>	<b>\$ [Total Travel Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Travel Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Travel Amount]
<b>Equipment</b>	<b>\$ [Total Equipment Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Equipment Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Equipment Amount]
<b>Supplies</b>	<b>\$ [Total Supplies Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Supplies Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Supplies Amount]
<b>Contractual</b>	<b>\$ [Total Contractual Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Contractual Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Contractual Amount]
<b>Other</b>	<b>\$ [Total Other Amount]</b>
Goal 1: [Goal Name]	\$ [Goal 1 Other Amount]
Goal 2: [Goal Name]	\$ [Goal 2 Other Amount]
<b>Total Direct</b>	<b>\$ [Total Direct Amount]</b>
<b>Indirect – (Rate: [%])</b>	<b>\$ [Total Indirect Amount]</b>
<b>TOTAL</b>	<b>\$ [Total Project Amount]</b>

*-Note: For any category that does not have costs, remove the additional rows which breakdown the cost per goal below it. Expand this table as needed to include all project goals-*

<b>Goal 1: [Goal Name]</b>	
<b>Category</b>	<b>Budget Amount</b>
<b>Personnel</b>	<b>\$ [Total Goal 1 Personnel Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Personnel Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Personnel Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Personnel Costs]
<b>Fringe Benefits</b>	<b>\$ [Total Goal 1 Fringe Benefits Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Fringe Benefits Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Fringe Benefits Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Fringe Benefits Costs]
<b>Travel</b>	<b>\$ [Total Goal 1 Travel Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Travel Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Travel Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Travel Costs]
<b>Equipment</b>	<b>\$ [Total Goal 1 Equipment Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Equipment Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Equipment Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Equipment Costs]
<b>Supplies</b>	<b>\$ [Total Goal 1 Supplies Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Supplies Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Supplies Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Supplies Costs]
<b>Contractual</b>	<b>\$ [Total Goal 1 Contractual Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Contractual Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Contractual Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Contractual Costs]
<b>Other</b>	<b>\$ [Total Goal 1 Other Costs]</b>
Output 1.1: [Output Name]	\$ [Output 1.1 Other Costs]
Output 1.2: [Output Name]	\$ [Output 1.2 Other Costs]
Output 1.3: [Output Name]	\$ [Output 1.3 Other Costs]
<b>Total Direct</b>	<b>\$ [Total Goal 1 Direct Amount]</b>
<b>Indirect – (Rate: [%])</b>	<b>\$ [Total Goal 1 Indirect Amount]</b>
<b>TOTAL</b>	<b>\$ [Total Goal 1 Amount]</b>

*-Note: For any category that does not have costs, remove the additional rows which breakdown the cost per output below it.  
Expand this table as needed to include all project goals-*

## Appendix J: Glossary of Terms/ Phrases

### **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.

### **Assistance Agreement**

Assistance Agreement is an agreement with the primary purpose of which is to provide appropriated funds to stimulate an activity, including but not limited to, grants and cooperative agreements.

### **Authorized Organizational Representative (AOR)**

An Authorized Organizational Representative (AOR) is the individual who is authorized to sign on behalf of the proposing organization.

### **Batch Upload**

Upload that submits one “batch” file instead of multiple files.

### **CAA Stationary Source**

Generally, any source of an air pollutant except those emissions resulting directly from an internal combustion engine for transportation purposes or from a nonroad engine or nonroad vehicle as defined in section 7550 of the Clean Air Act. Stationary sources of air pollution include, for example, factories, refineries, boilers, power plants, gas stations, and dry cleaners.

### **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.\

### **Conference(s)**

Conference is defined as a meeting, retreat, seminar, symposium, workshop or event whose primary purpose is the dissemination of technical information beyond the non-Federal entity and is necessary and reasonable for successful performance under the Federal award.

### **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.

### **Contract**

Contract is a legal instrument by which a non-Federal entity purchases property or services needed to carry out the project or program under a federal award.



### **Cooperative Agreement**

Cooperative Agreement is a legal instrument of financial assistance between a Federal awarding agency or pass-through entity and a non-Federal entity that provides substantial involvement in carrying out the Federal award activities. See [Section II-B](#) for more information.

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

The Cross-Media Electronic Reporting Rule (CROMERR) provides the legal framework for electronic reporting under EPA's regulatory programs. The Rule sets performance-based, technology-neutral system standards and provides a streamlined, uniform process for Agency review and approval of electronic reporting. The CROMERR program ensures the enforceability of regulatory information collected electronically by EPA and EPA's state, tribal and local government partners. 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/>

### **De Minimis**

The 10% *de minimis* indirect cost rate is a Federally-recognized rate that non-Federal entities may use to recover allowable indirect costs on grants or cooperative agreements.

### **Direct Funding**

Direct funding is funding that is provided to an organization directly by a governmental entity.

### **Direct Costs/Charges**

Direct costs are those costs that can be identified specifically with a particular final cost objective. Typical costs charged directly to a Federal award are the compensation of employees who work on that award, their related fringe benefit costs, the costs of materials and other items of expense incurred for the Federal award.

**Discharge Monitoring Report** – The EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees.

## **DUNS**

A Data Universal Numbering System or DUNS number is a unique, nine-digit series of numerals that identifies a business.

## **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.

## **E-Enterprise Community Inventory Platform (EECIP)**

The E-Enterprise Community Inventory Platform is a living project inventory with content spanning topics such as IT, process improvement, advanced monitoring, and data management. Users can view partner agencies' projects and systems, participate in discussion threads, and connect with peers. Further information about the EECIP can be found in [Appendix D](#).

## **Equipment**

Equipment is tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds \$5,000.

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

The Exchange Network Discovery Services (ENDS) is a set of directory services for all nodes in EN. 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/exchangenetwork-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 EN 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>.

### **Foundational Shared Services**

Foundational shared services are those listed in [Appendix B](#). These services support many of the current E-Enterprise solutions and are presently shared among the greatest number of E-Enterprise partners.

### **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.

### **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 application must list one or more goals.

### **Grant(s)**

Grant is a legal instrument of financial assistance between a Federal awarding agency or pass-through entity and a non-Federal entity. See [Section II-B](#) for more information.

### **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.

### **Indirect Costs/Charges**

Indirect cost are those costs incurred for a common or joint purpose benefitting more than one cost objective, and not readily assignable to the cost objectives specifically benefitted.

**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.

**Inter-Tribal Consortia**

Inter-tribal consortium is a coalition of two or more separate Indian tribes that join together for the purpose of applying for a grant. An intertribal consortium is eligible to receive a Cooperative Agreement from EPA only if the intertribal consortium demonstrates that all members of the consortium meet the eligibility requirements for the Cooperative Agreement, and all members authorize the consortium to apply for and receive assistance.

**Instrumentality of the State**

An instrumentality is an organization created by or pursuant to state statute and operated for public purposes. Generally, an instrumentality performs governmental functions, but does not have the full powers of a government, such as police authority, taxation and eminent domain.

**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.**

**Management Fees**

Management fees or similar charges" refer to expenses added to direct costs in order to accumulate and reserve funds for ongoing business expenses, unforeseen liabilities or for other similar costs are not allowable under EPA assistance agreements.

**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.

**Mileage**

Mileage is an allowance for traveling expenses at a certain rate per mile.

**Negotiated Indirect Cost Rate Agreement**

Negotiated Indirect Cost Rate Agreement is the documentation that issues the reimbursement rate(s) negotiated between the Federal government and a grantee organization to substantiate its request for the establishment of an indirect cost rate.

**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 EN 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 EN 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 EN 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.

## **Per Diem**

Per diem is the allowance for lodging (excluding taxes), meals and incidental expenses for each day.

## **Pre-Award Costs**

Pre-award costs are those incurred prior to the effective date of the Federal award directly pursuant to the negotiation and in anticipation of the Federal award where such costs are necessary for efficient and timely performance of the scope of work.

### **RENC Regional Exchange Network Coordinator**

A Regional Exchange Network Coordinator, or RENC, acts as the coordinator and facilitator of the EN and the EN grant program for the region in which they work. In this role, the RENC's primary responsibility is to serve as the regional project officer for awarded EN grants, which includes providing necessary support and guidance for grantees, performing grant monitoring functions, and reviewing/approving grant reporting forms and extensions.

### **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).

### **REST APIs**

Representational state transfer (REST) application programming interface (API) is a software architecture that creates rules for data interoperability.

### **Reusable Component Service (RCS)**

This repository provided a central point of access to a broad range of IT resources, components, and services used in various EPA and partners systems. Scheduled to be retired in 2020, EN grantees previously used this repository to register any newly developed resources and the reuse of existing EN resources in accordance with the Exchange Network Interoperability Policy. These records have since been migrated to the SSRC. Current guidance on meeting the EN grant registration requirement can be found [here](#).

### **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.

### **Shared Services Resource Catalog (SSRC)**

The SSRC is a catalog of EPA, state, tribal and territory services, which includes a registry related XML schema, widgets, plug-ins, web services and many other resources. SSRC has a searchable interface with which users can search for existing data and IT assets, which is available at <https://sscatalog.epa.gov/sharedservicecatalog/search>. Any Exchange Network resources that have been registered in prior years in RCS have been transferred and made available in SSRC. Further information about the SSRC can be found in [Appendix D](#).

### **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.

### **Subawards/Subgrants**

A subaward or subgrant is an award provided by a pass-through entity to a subrecipient for the subrecipient to carry out part of a Federal award received by the pass-through entity. It does not include payments to a contractor or payments to an individual that is a beneficiary of a Federal program.

### **Subawardee/Subrecipient**

Subrecipient is a non-Federal entity that receives a subaward from a pass-through entity to carry out part of a Federal program, but does not include an individual that is a beneficiary of such program.

### **Subject Matter Experts (SMEs)**

A subject matter expert is an individual who exhibits the highest level of expertise in a specified topic or field of work.

### **Supplies**

Supplies are all tangible personal property. A computing device is a supply if the acquisition cost is less \$5,000, regardless of the length of its useful life.

### **Unliquidated Obligations (ULOs)**

Unliquidated obligations are obligations incurred by the non-Federal entity that have not been paid (liquidated).

### **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.

### **Workshops**

Workshop is defined as a meeting, retreat, seminar, symposium, conference or event whose primary purpose is the dissemination of technical information beyond the non-Federal entity and is necessary and reasonable for successful performance under the Federal award.