

Safe Drinking Water (SDWIS) Flow Implementation Guide

The Safe Drinking Water Information System (SDWIS) flow allows users to submit data to the EPA's Safe Drinking Water Information System. SDWIS is an EPA national data system that contains information about public water systems and violations of EPA's drinking water regulations

BENEFITS

The Exchange Network offers a fully automated approach for submitting data, avoiding the manual steps needed to flow data via the non-EN CDX web application

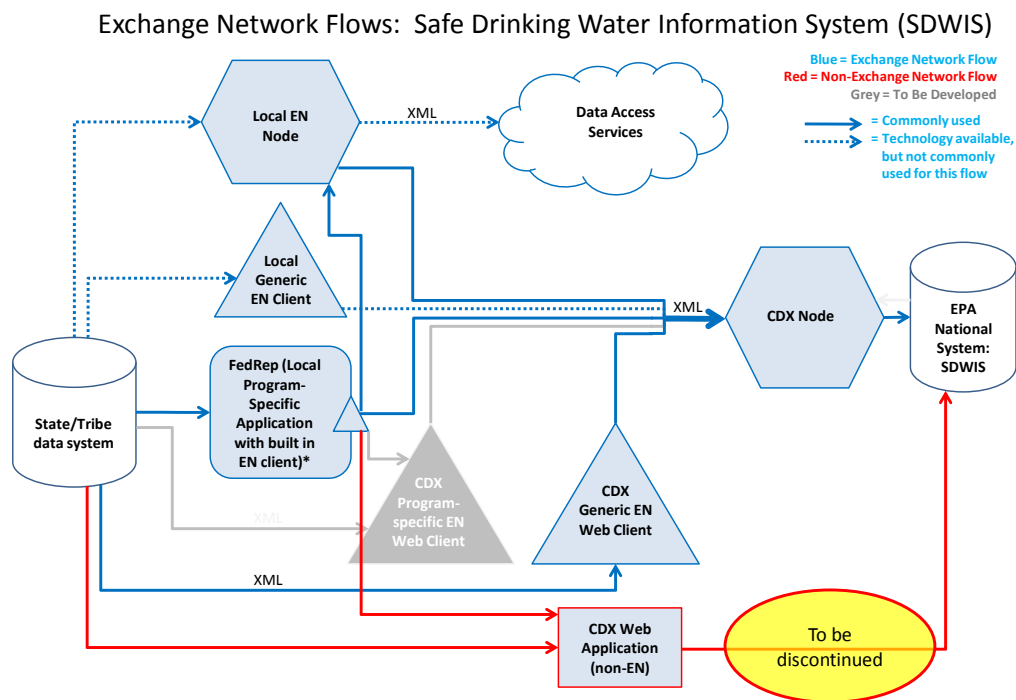
When partners use their EN Node, they can publish SDWIS data for integration with other partners

Practical Implementation Advice

- States and tribes that are currently using the Exchange Network to flow SDWIS data should keep doing what they are doing.
- States and tribes that are using SDWIS/STATE and FEDREP but are flowing data through the non-EN CDX web application should wait until the planned CDX program-specific EN web client is ready and then use FEDREP for EN drinking water data submittals.
- States and tribes that are interested in automating drinking water reporting now should reconfigure FEDREP to flow data through their nodes.
- Institutions (e.g., some health departments) that don't already have a node, shouldn't implement a node just to flow SDWIS data. They are advised to wait until OW has developed the planned CDX program-specific EN web client or to partner with agencies that have nodes.
- States and tribes with their own drinking water data system (i.e., not SDWIS/STATE) may want to get involved (e.g., through a potential future Integrated Project Team) in OW's new approach to flowing data so that new flows will work with other data management systems.

SDWIS Data Flow Options

The graphic below shows the current options for flowing SDWIS data. Exchange Network (EN) flow options are shown in blue and non-EN options are shown in red. (Terms are explained in Attachment I).



* FedRep can transmit data to the CDX Node, CDX Web, or a partner's local node

EXCHANGE NETWORK (EN) OPTIONS:

- Submit an XML file via FedRep (local application with built in EN client) directly to CDX or to CDX via a local EN Node—this is the most common Exchange Network submission path.

NON-EXCHANGE NETWORK OPTIONS:

- Submit an XML file via the non-EN CDX Web Application—either directly from a partner data system or via FedRep. This is presently the most common submission path. This pathway will be discontinued once the planned CDX program-specific EN web client is available.

Summary of Current Practice

Most partners use SDWIS/STATE as their local information management system. SDWIS/STATE contains FedRep which validates the data submission and converts data to XML format.

Currently, partners that use SDWIS/STATE and FedRep have two options for submitting data. The user can use the Exchange Network by configuring FedRep to make its output file available to the State node or to CDX directly. Alternatively, the user can submit data without the Exchange Network by manually uploading the file using the legacy non-EN CDX web application. These two options are also available to States that use their own drinking water information management systems.

SDWIS Flow Status and Milestones

EPA is working to develop a CDX program-specific EN web client that will allow users to automatically submit data to CDX using FedRep (for SDWIS/STATE users) or directly from local systems. This will allow a transition away from the non-EN CDX web application that EPA anticipates turning off in late 2011.

In the short-run, EN staff will work with OW to help transition States away from the legacy CDX web application to the newly refined CDX EN client. EN staff will also make SDWIS implementation a special EN grant priority in FY 2011 to help states automate this data flow. In the long-run, EN staff, the governance and OW should collaborate on plans to modernize SDWIS and ensure that the new system accepts data only through the Network.

The table below shows institutional responsibilities and target completion dates for EPA activities.

Criteria	Status	Actions	Primary Responsibility	Completion Period
Automation Ready	Done			
Solutions for all partners	Attention Required	1. Design, develop, and deploy refined CDX EN web client	EN staff	Q4 2010
	Attention Required	2. Provide training and outreach to transition users away from legacy CDX web application to CDX EN web client	OW with EN staff support	Q2 2011
Access to transaction status	Attention Required	3. Develop transaction messaging	EN staff	Q4 2011
Accessible and stable flow documentation	Attention Required	4. Update documentation to reflect current specifications of data flow	OW	TBD
Specifications for Data Access Services	Attention Required	5. Develop, document, and demonstrate standard specifications for data access services for drinking water occurrence data that meets the needs of the public health community	NOB with OW input	Q4 2012
Clear path to eliminate alternatives	Attention Required	6. Eliminate CDX web application	EN staff with OW input	Q4 2011

Attachment 1: Terms

Node: A partner's point of presence on the EN consisting of a server (hardware and software) enabled with web services that allow partners to automatically provide and receive information via the Network and to publish data for use by other EN partners.

EN Client: A stand-alone application (i.e., software code) that lets partners submit data, request data, and receive results from an EN request. Clients differ from nodes in that they cannot respond to queries from other nodes and so cannot publish data. Clients also need more manual (vs. automated) steps, for example, to extract data and generate and review reports before submission.

CDX: EPA's Central Data Exchange. It serves as EPA's centralized electronic report receiving system. It receives data from partners and directs the data to EPA's program-specific National Systems (e.g., AQS, WQX, etc.).

CDX Node: CDX Node is EPA's node on the EN, allowing EPA to receive, send, and provide information via the Network. CDX Node can also publish EPA data for use by other EN partners.

CDX EN Web Clients:

- **Generic:** A client at CDX which receives XML-based data via standard web browsers for many different flows using Exchange Network protocols.
- **Program-Specific:** A client customized for a single National System with an intuitive user interface specific to the business process. Implemented at CDX, the client receives program-specific data in XML format via standard web browsers using Exchange Network protocols (e.g., for authorization and authentication, etc.)

CDX Web (non-EN) Application: A legacy CDX application that receives data (flat file or XML format) via standard web browsers. CDX Web applications are not consistent with EN protocols (e.g., they have a separate authentication and authorization service from the EN) and typically involve more manual steps than a node-to-node exchange of data.

Data Access Services: Using web services to make data available to Network users by querying nodes and returning environmental data in the form of XML documents. Published data can be accessed using a node or clients. Published data 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.

Direct User: A partner entering data directly into a National Data System through a system-specific interface (manual entry).

EPA National Data System: Program-specific data systems at EPA that can receive and publish data via CDX.

Local Data System: A partner's database or series of databases in which environmental data is stored, managed, and manipulated.

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. The electronic language that expresses and transports data standards and transaction sets. XML uses an extensible set of tags to describe the meaning of data.

Attachment 2: National System Flow “Ready to Use” Criteria

A focus of Exchange Network (EN) governance has been developing the National System Flows to help partners take advantage of the Network’s business value. Governance has identified six criteria for each flow to meet to make these flows “ready to use” by partners:

- Automation-ready flows. Support fully automated node-to-node flows.
- Access to transaction status. Support a fully automated process for reporting transaction status, processing results, and QA results from receipt by CDX through final processing in the National System.
- Accessible and stable flow documentation. Develop and make accessible stable documentation that describes all flow requirements. This includes a complete Flow Configuration Document (FCD) that is in compliance with EN procedures for version management.
- Solutions for all partners. Provide appropriately scaled EN solutions for partners of all sizes, needs, and capabilities. Some partners such as tribes and local clean air authorities may not need a fully functional node. A customized EN client or EN web client should be available to these users.
- Publishing interface. Provide a national standard set of query/solicit services defined in the FCD whether or not data are currently published. Implement a publishing interface where published data are critical to partner business processes (such as NPDES permit information for NetDMR).
- Clear path to eliminate alternatives. Have a clear path to eliminate legacy system alternatives to EN exchanges, including transition support for partners.