



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 24 2011

DEPUTY ADMINISTRATOR

MEMORANDUM

SUBJECT: Requesting Continuing Support for the National Environmental Information Exchange Network and Incorporation into the FY 2012 State-Grant Work Plans

TO: Mathy Stanislaus, Assistant Administrator
Office of Solid Waste and Emergency Response

Gina McCarthy, Assistant Administrator
Office of Air and Radiation

Cynthia Giles, Assistant Administrator
Office of Enforcement and Compliance Assurance

Nancy Stoner, Acting Assistant Administrator
Office of Water

Regional Administrators

I am requesting your assistance for continued communication about the use of the National Environmental Information Exchange Network and incorporating specific commitments for the exchange network into the state-grant work plans.

The U.S. Environmental Protection Agency, states, tribes and territories will be able to exchange environmental data securely over the Internet using the exchange network. The exchange network facilitates a cohesive and efficient approach to electronic information sharing and the integration and analysis of environmental data, which will make it easier to obtain timely and accurate information that affects our environmental and human-health decision making. Administrator Lisa P. Jackson supports the goal of fully implementing data reporting for the agency's priority national systems by the end of 2012. In her July 7, 2009, memorandum, titled *Achieving the Promise of the National Environmental Information Exchange Network*, Administrator Jackson expressed her commitment to having the exchange network become the preferred mechanism for the EPA, states, tribes and other partners to share and exchange data.

Your commitment and support to date has played an integral role in fulfilling our goal. Last year, the Office of Environmental Information collaborated with the national program managers to

develop language about the use of the exchange network in the *FY 2011 National Program Manager Guidance*. OEI is continuing this collaborative effort through the development of the *FY 2012 National Program Manager Guidance*, which will include specific commitments for using the exchange network for reporting data to the 10 agency priority data systems, a date for phasing out legacy methods for reporting data, and a statement that reporting data using the exchange network for operations and maintenance, for example, is an eligible activity for funding under categorical program grants. I am asking for your continued support for this effort. Assistant administrators should communicate these exchange-network requirements for the *FY 2012 National Program Manager Guidance* to their senior managers, including program office directors and deputies. The regional administrators should coordinate with their deputy and assistant regional administrators and the regional program offices to ensure that state-grant work plans reflect the commitment to use the exchange network.

We have already made significant progress toward achieving the goal of the exchange network. Its ultimate success will greatly depend on the continued effort and commitment of OEI, the program offices at headquarters, the regions and the EPA's partners. I want to thank you in advance for your support and assistance.



Bob Perciasepe

cc: Administrator
Deputy Regional Administrators
Assistant Regional Administrators
Headquarters Senior Information Officials

Guide to Regional Air Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

Guidance Purpose

This document is a tool to help Regional Program Offices work with states to incorporate specific commitments in grant work plans for using the National Environmental Information Exchange Network (Exchange Network). This effort is in support of expressed EPA and state goals to achieve a transition to the Exchange Network as the means of sharing and reporting environmental information across each of the National System Data Flows by the end of CY2012.

The Exchange Network is a collaborative effort among U.S. EPA, states, tribes and territories to exchange environmental data securely and efficiently over the Internet. The Network facilitates electronic sharing, integration, and analysis of environmental data from many sources, making it easier to obtain timely and accurate information to support better decisions about the environment and human health.

In 2009, the Environmental Council of the States (ECOS) unanimously passed a resolution calling for states and EPA to commit to setting an aggressive timetable for achieving a complete transition to the Exchange Network for regulatory data flows based on the readiness of state and U.S. EPA program offices. EPA Administrator Jackson echoed that commitment in her July 7, 2009 memorandum, entitled "Achieving the Promise of the National Environmental Information Exchange Network."

For the past 10 years, EPA, states, and tribes, have worked to build the infrastructure and capacity to participate in the Exchange Network. The U.S. Congress has appropriated \$154 million in grant funds from FY2002–FY2010 in support of this effort. In addition to the monies earmarked to build capacity and infrastructure, Regional Program Offices disburse resources to States and Tribes to implement programs, with an explicit requirement to report regulatory information. The EPA and States through ECOS intend to transition all the regulatory reporting to the Exchange Network. *An exception is for those states, tribes, and territories that are direct users of EPA National Systems.* Some of these organizations will continue to manually input and manage their data directly in EPA program databases such as RCRAInfo and ICIS-NPDES. This guidance is applicable to entities that are providing data to EPA through other electronic means.

To support and hasten this transition, the National Program Manager Guidance for all media areas explicitly calls for the use of the Exchange Network for reporting regulatory information. This document contains specific information, by media area, about what it means to use the Exchange Network. The intent is that Regional Program Offices use this document as a tool to identify specific Exchange Network participation requirements and work with states to codify use of the Exchange Network in their program-specific grant work plans.

Actions for Regional Air Program Managers

- Adhere to the respective National Program Manager Guidance for the Region.

Guide to Regional Air Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- Ensure that their staff members are aware of the goal and responsibility to transition to the Exchange Network by CY2012, for regulatory reporting (National System Data Flows).
- Identify Regional Program barriers prohibiting the delegated states, tribes and territories from achieving the Administrator's CY2012 goal.
- Work with the state, tribe or territory to remove any identified barriers.
- Work with states, tribes, and territories to negotiate grant work plans that:
 - Reflect a commitment to use the Exchange Network for all National System Data Flows;
 - Acknowledge the intent to turn off legacy data reporting mechanisms;
 - Identify dates for terminating legacy methods for reporting data;
 - State that costs to establish an Exchange Network data flow may be funded by Exchange Network grants or by categorical program grants, provided that the same work is not funded more than once; and
 - Establish that reporting data via the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Air Program-Specific Guidance by Priority Data Flows

Office of Air and Radiation (OAR)

Air Quality System (AQS)

Emissions Inventory System (EIS)

Air Quality System (AQS)

An Exchange Network data flow for AQS is currently available for states, tribes, and territories. All partners will need to report data in XML format through the Exchange Network. Partners currently reporting data using the legacy flat-file format through the EPA Central Data Exchange Web application must make plans to convert to the Exchange Network data flow by the end of CY2012.

More information on this data flow including known barriers and practical implementation advice is available at http://www.exchangenetwork.net/exchanges/AQS_flow%20implementation.pdf.

Relevant language in FY2012 OAR NPM guidance

Using the resources developed in FY 2011, Regions should work with states to:

- Obtain commitments in the grant workplans from all or all but one state in each Region to submit XML-formatted AQS data by the end of 2012;
- Obtain commitments in the grant workplans from the remaining state in each Region to submit XML formatted AQS data by the end of 2013; and
- Increase the use of the exchange network by non-state submitters of air quality information by making the EN client, XML tools and the necessary training available to them with the goal of 100 percent reporting using the Exchange Network by the end of 2015.

Guide to Regional Air Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

Regions must work with states to negotiate work plans for categorical grants that:

- Reflect a commitment to begin submitting information to the Air Quality System in XML format using either an Exchange Network Node or a Node Client consistent with the goals in the NPM guidance;
- Acknowledge the intent to eliminate the legacy flat-file format and data reporting mechanism through the CDX Web application;
- Identify a date for terminating use of the legacy flat-file method for reporting data to AQS, and;
- Establish that reporting AQS data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Emissions Inventory System (EIS)

The transition to the Exchange Network is already complete for the EIS data flow. The Exchange Network is the only way for partners to flow EIS data. Partners may use their Exchange Network Nodes or a web-based tool called the Exchange Network Web Client to submit their data to EPA.

More information on this data flow including known barriers and practical implementation advice is available at http://www.exchangenetwork.net/exchanges/EIS_flow%20implementation.pdf.

Regions must work with states to negotiate work plans for categorical grants that:

- Establish that reporting EIS data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Air Quality System (AQS) Flow Implementation Guide

The Air Quality System (AQS) flow allows state, local, and tribal partners to submit air quality monitoring data to EPA's Air Quality System national database. This data volume is large, with thousands of files submitted by partners intermittently (at least quarterly).

BENEFITS

Automated data flows save time and money

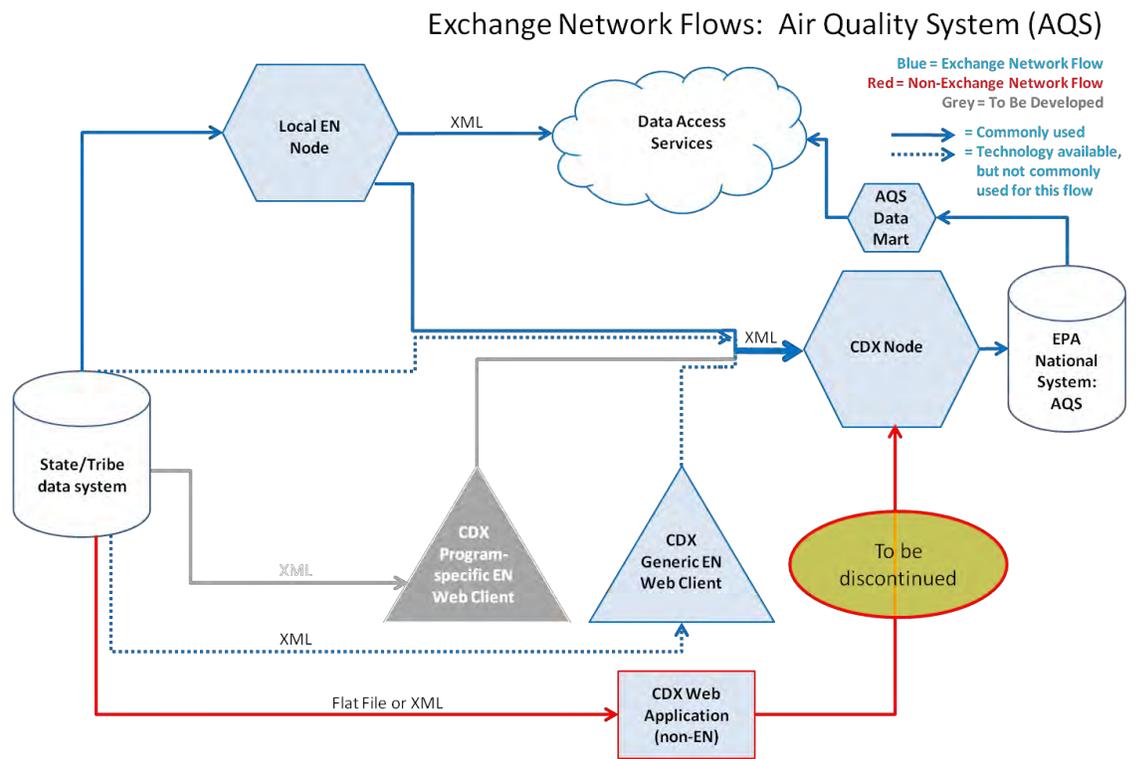
Electronic data in a common format allows integration of air quality data with other media and other jurisdictions—especially when planned data access services are developed

Practical Implementation Advice

- All partners will eventually need to flow data in XML format. Partners currently flowing data via flat files through the CDX Web application would benefit from converting to XML submission in the near term.
- Partners with sufficiently robust systems can automate AQS submissions through their nodes, although they may want to wait until EPA makes the flow fully automated through a planned upgrade to eliminate a manual step for loading data into the National System.
- Partners not planning to use their nodes to submit AQS data would benefit from using a planned program-specific EN Web Client when it is available.

AQS Data Flow Options

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



EXCHANGE NETWORK (EN) OPTIONS:

- Submit an XML file using a local EN Node
- Submit an XML file through a local Generic EN Client or the CDX Generic EN Client (technically feasible but not commonly used)

NON-EXCHANGE NETWORK OPTIONS:

- Submit a flat file (or XML) to the National System using the non-EN CDX Web Application.

Summary of Current Practice

Currently, most partners submit AQS data via the non-EN CDX Web Application in flat file or XML format. Currently, the node flow is not fully automated: once partners have uploaded data into AQS via their node, they must then log in to manually approve the submission to the National System. This manual step reduces the automation benefits of using a node. Also, many reporters prefer “manual” submissions because quality assurance of air monitoring data is not automated on the supplier end.

AQS data is published by EPA through the AQS [Data Mart](#). These services use Exchange Network protocols. Air monitoring data is also published via the Data Mart to the AIRNow air quality index (not displayed in the AQS graphic). States can also submit raw monitoring data to AIRNow in XML.

AQS Flow Status and Milestones

EPA recognizes a number of actions are needed to make the EN more automated, accessible, and value-added for flowing AQS data, including:

- Automating the step for loading data into the National System,
- Improving automated messaging,
- Developing a program-specific EN Web Client for partners that don't need a fully functional node, such as some tribes and local air agencies, and
- Establishing a national standard for data publishing.

EPA must take these actions before EPA stops supporting non-EN submissions through the commonly used non-EN CDX Web Application.

The table below shows institutional responsibilities and target completion dates for each activity. (EPA general criteria for assessing the “readiness” of National System Flows is included as Attachment 2).

Criteria	Status	Actions	Primary Responsibility	Completion Period
Automation Ready	Attention Required	1. Develop software to support automation	AQS staff with CDX support	Q2 2011
Solutions for all partners	Attention Required	2. Design, develop, and deploy refined CDX EN web client	CDX staff	Q4 2010
	Attention Required	3. Provide training and outreach to transition users away from legacy CDX web application to CDX EN web client	AQS with EN staff support	Q2 2011
Access to transaction status	Attention Required	4. Develop transaction messaging	Joint CDX and AQS	Q4 2011
Accessible and stable flow documentation	Done			
Specifications for Data Access Services	Attention Required	5. Create flow documentation for AQS publishing	AQS staff with EN support	Q1 2011
Clear path to eliminate alternatives	Attention Required	6. Eliminate CDX web application	EN/CDX staff	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.

Emissions Inventory System (EIS) Flow Implementation Guide

The Emissions Inventory System (EIS) flow quality assures data and supports annual and tri-annual submissions of emissions inventory data by State, local, and tribal air pollution control agencies.

BENEFITS

The Network is the only way to flow EIS data

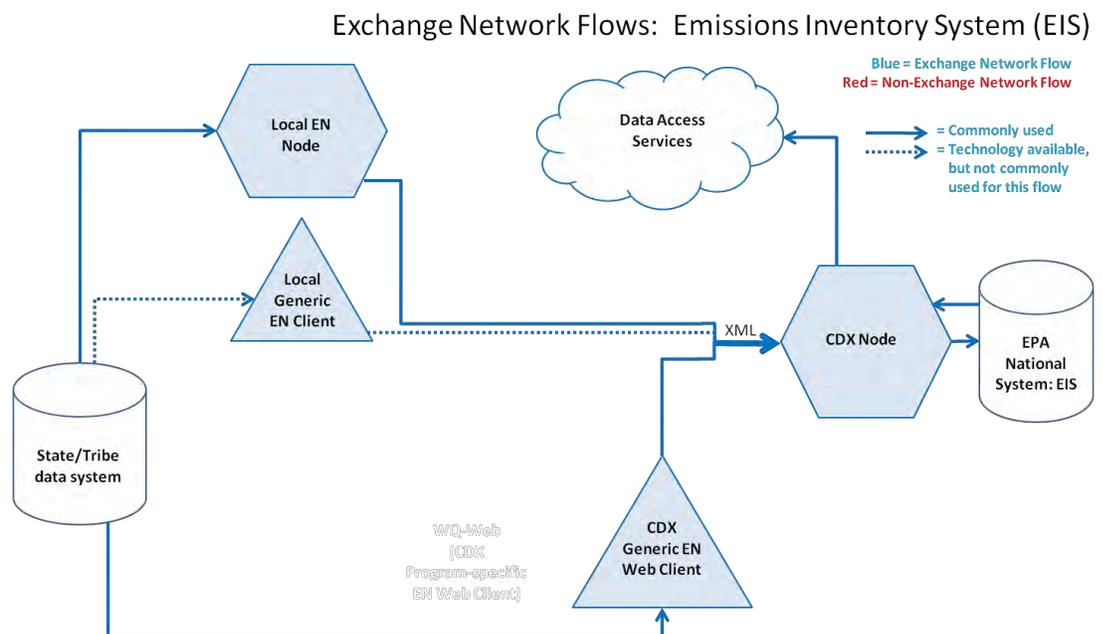
EIS provides a quality assurance service that allows users to check and correct errors prior to making an official submission

Practical Implementation Advice

- The EIS flow is fully developed and ready to use. States that have not already done so are encouraged to automate submission of EIS data via the Exchange Network.

EIS Data Flow Options

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



EXCHANGE NETWORK (EN) OPTIONS:

- Submit an XML file using an agency's local EN node. A few states use their agency nodes to flow EIS data. However, a number of submitters are state agencies who have not implemented the EIS data flow to date, or local/tribal agencies who do not have nodes, and would use the EN Web Client for submissions.

NON-EXCHANGE NETWORK OPTIONS:

- There are no non-Exchange Network pathways for flowing EIS data.

Summary of Current Practice

The EN is the only way for partners to flow EIS data. EIS flows are fully automated and documented. Many partners, such as local air agencies flowing EIS data, that do not have nodes or that are not familiar with the Network are using the CDX EN web client to submit their data.

Partners can use the “EIS Gateway” (not shown in the graphic) to access and analyze data from the EPA National System. It provides access to the submitted data as well as other resources to assist users in developing their emissions inventories. It provides enhanced support for emissions estimates, including the capability to support, store, and assess multiple emissions values for the same pollutant.

EIS Flow Status and Milestones

Exchange Network implementation of the EIS flow is largely complete. Thus far, the development of EIS has focused primarily on support of the EPA regulatory mission. EPA is now turning its attention to broader considerations of secondary users and integration with other internal EPA systems that have received less attention.

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	Done			
Access to transaction status	Done			
Accessible and stable flow documentation	Done			
Specifications for Data Access Services	Done			
Clear path to eliminate alternatives	N/A			

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.

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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.

Guide to Regional Water Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

Guidance Purpose

This document is a tool to help Regional Program Offices work with states to incorporate specific commitments in grant work plans for using the National Environmental Information Exchange Network (Exchange Network). This effort is in support of expressed EPA and state goals to achieve a transition to the Exchange Network as the means of sharing and reporting environmental information across each of the National System Data Flows by the end of CY2012.

The Exchange Network is a collaborative effort among U.S. EPA, states, tribes and territories to exchange environmental data securely and efficiently over the Internet. The Network facilitates electronic sharing, integration, and analysis of environmental data from many sources, making it easier to obtain timely and accurate information to support better decisions about the environment and human health.

In 2009, the Environmental Council of the States (ECOS) unanimously passed a resolution calling for states and EPA to commit to setting an aggressive timetable for achieving a complete transition to the Exchange Network for regulatory data flows based on the readiness of state and U.S. EPA program offices. EPA Administrator Jackson echoed that commitment in her July 7, 2009 memorandum, entitled "Achieving the Promise of the National Environmental Information Exchange Network."

For the past 10 years, EPA, states, and tribes, have worked to build the infrastructure and capacity to participate in the Exchange Network. The U.S. Congress has appropriated \$154 million in grant funds from FY2002–FY2010 in support of this effort. In addition to the monies earmarked to build capacity and infrastructure, Regional Program Offices disburse resources to States and Tribes to implement programs, with an explicit requirement to report regulatory information. The EPA and States through ECOS intend to transition all the regulatory reporting to the Exchange Network. *An exception is for those states, tribes, and territories that are direct users of EPA National Systems.* Some of these organizations will continue to manually input and manage their data directly in EPA program databases such as RCRAInfo and ICIS-NPDES. This guidance is applicable to entities that are providing data to EPA through other electronic means.

To support and hasten this transition, the National Program Manager Guidance for all media areas explicitly calls for the use of the Exchange Network for reporting regulatory information. This document contains specific information, by media area, about what it means to use the Exchange Network. The intent is that Regional Program Offices use this document as a tool to identify specific Exchange Network participation requirements and work with states to codify use of the Exchange Network in their program-specific grant work plans.

Actions for Regional Water Program Managers

- Adhere to the respective National Program Manager Guidance for the Region.
- Ensure that their staff members are aware of the goal and responsibility to transition to the Exchange Network by CY2012, for regulatory reporting (National System Data Flows).

Guide to Regional Water Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- Identify Regional Program barriers prohibiting the delegated states, tribes and territories from achieving the Administrator's CY2012 goal.
- Work with the state, tribe or territory to remove any identified barriers.
- Work with states, tribes, and territories to negotiate grant work plans that:
 - Reflect a commitment to use the Exchange Network for all National System Data Flows;
 - Acknowledge the intent to turn off legacy data reporting mechanisms;
 - Identify dates for terminating legacy methods for reporting data;
 - State that costs to establish an Exchange Network data flow may be funded by Exchange Network grants or by categorical program grants, provided that the same work is not funded more than once; and
 - Establish that reporting data via the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Water Program-Specific Guidance by Priority Data Flows

Office of Water (OW)

Beach Notification

Safe Drinking Water Information System (SDWIS)

Underground Injection Controls (UIC)

Water Quality Exchange (WQX)

Beach Notification

All beach notification data is currently reported in XML format either using the Exchange Network or the Central Data Exchange (CDX) website. EPA is developing a web-based Exchange Network Client that will enable all partners to transition seamlessly away from the legacy application and enable all closure data to be reported through the Exchange Network. EPA's Beaches Program anticipates that all users will have been transitioned to the Exchange Network during the 2011 reporting of 2010 beach closure data.

More information on this data flow including known barriers and practical implementation advice is available at

http://www.exchangenetwork.net/exchanges/Beach_notification_flow%20implementation.pdf.

Relevant language in FY2012 OW NPM guidance

- Regions should work with states to increase the use of the eBeaches flow to 15 states by 2011 and 30 states by 2012.

Regions must work with states to negotiate work plans for categorical grants that:

Guide to Regional Water Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- Establish that reporting Beach Notification data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Safe Drinking Water Information System (SDWIS)

An Exchange Network data flow for SDWIS is currently available. All partners will need to report data in XML format through the Exchange Network. Partners currently reporting data to EPA using the legacy Central Data Exchange (CDX) Web application must make plans to convert to the Exchange Network data flow by the end of CY2012.

More information on this data flow including known barriers and practical implementation advice is available at http://www.exchangenetwork.net/exchanges/SDWIS_flow%20implementation.pdf.

Relevant language in FY2012 OW NPM guidance

- Regions should work with states to increase SDWIS submissions using the Exchange Network to 39 states by 2012.

Regions must work with states to negotiate work plans for categorical grants that:

- Reflect a commitment to begin submitting information to the Safe Drinking Water Information System in XML format using either an Exchange Network Node or a Node Client by the end of CY2012;
- Acknowledge the intent to eliminate the legacy data reporting mechanism through the CDX Web application;
- Identify a date for terminating use of the legacy method for reporting data to SDWIS; and
- Establish that reporting SDWIS data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Underground Injection Controls (UIC)

An Exchange Network data flow for UIC is currently available and the Exchange Network is the only way for partners to electronically share UIC data with EPA. Partners may use their Exchange Network Nodes or an Exchange Network Client to submit their data.

More information on this data flow including known barriers and practical implementation advice is available at http://www.exchangenetwork.net/exchanges/UIC_flow%20implementation.pdf.

Relevant language in FY2012 OW NPM guidance

- Regions should work with states to encourage the use of the Exchange Network for submitting UIC data by 15 states during 2011.

Regions must work with states to negotiate work plans for categorical grants that:

Guide to Regional Water Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- Establish that reporting UIC data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Water Quality Exchange (WQX)

The transition to the Exchange Network is already complete for the WQX data flow. The Exchange Network is the only way for partners to flow WQX data to EPA's STORET database. Partners may use their Exchange Network Nodes or an Exchange Network Client to submit their data to EPA.

More information on this data flow including known barriers and practical implementation advice is available at http://www.exchangenetwork.net/exchanges/WQX_flow%20implementation.pdf.

Relevant language in FY2011 OW NPM guidance

- Regions should work with states to increase WQX submissions to at least 46 state submissions during 2011.

Regions must work with states to negotiate work plans for categorical grants that:

- Establish that reporting WQX data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Water Quality Exchange (WQX) Flow Implementation Guide

The Water Quality Exchange (WQX) is an Exchange Network data flow that enables States, Tribes, and territories to report water quality data to EPA

BENEFITS

Fully automated flows save time and money

Data publishing services from EPA systems allows data reuse and data integration by partners

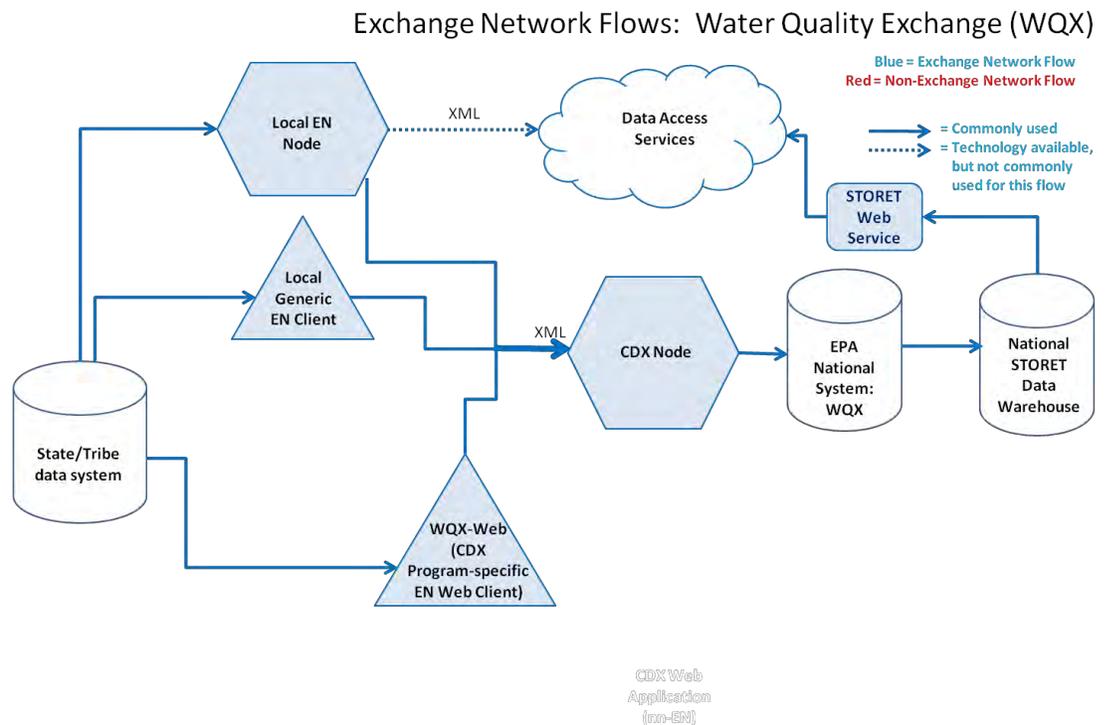
Consistent data format and protocols encourage sharing and reuse of water data analysis and access tools

Practical Implementation Advice

- WQX is a valuable data flow for programs, and it is stable and ready to implement. Partners not already flowing WQX data via the Exchange Network are encouraged to implement the flow through an EN Node or EN client.
- Institutions that do not already have a data management system for water quality data may want to focus on developing such a system before focusing on flowing data via the Exchange Network. There are various approaches that partners can implement.
- Plugins are available for both open node 2.0 and the EN node for the WQX flow. Dataflow plugins can help with the mapping process and make data flow implementation much more efficient.

WQX Data Flow Options

The graphic below shows the current options for flowing WQX data. Exchange Network (EN) flow options are shown in blue and non-EN options are shown in red. (Terms are explained in Attachment 1).



EXCHANGE NETWORK (EN) OPTIONS:

- Submit an XML file using a local EN Node—this method is typically used by larger states with large WQX data volumes
- Submit an XML file via WQX-Web (a program-specific EN Web Client)—this is the most common method of submitting data, especially for smaller partners
- Submit an XML file via a local Generic EN Client—this method is less common than either submission via WQX-Web or EN node, but it is used by some partners

NON-EXCHANGE NETWORK OPTIONS:

- There are no non-EN flow options

Summary of Current Practice

Starting in 2009, WQX replaced the use of the distributed database STORET for reporting water quality data. STORET was cumbersome for States and Tribes to use and costly for EPA to maintain. As a result many partners did not report water quality data prior to the deployment of WQX.

WQX is now the only method for reporting water quality data. Submission of water quality data can be a completely automated node-to-node flow. For partners who do not have a node or are not ready for a completely automated flow, the Office of Water has deployed WQX web, which is an EN web client. A few partners use their own EN local clients to submit XML data as well

WQX Flow Status and Milestones

WQX is stable and ready to implement. The main focus of the Office of Water over the near term will be developing specifications for data access services to encourage sharing of water quality data among the user community.

The WQX data flow has been developed to be fully automated, and is conducive to institutions ranging from small entities like Tribes to larger States like California.

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	Done			
Access to transaction status	Done			
Accessible and stable flow documentation	Done			
Specifications for Data Access Services	Attention Required	1. Document and make available via the EN a standard specifications for data access services based on existing EN and/or public facing services that meet the needs of the user community	OW, with stakeholder input and NOB support	Q4 2012
Clear path to eliminate alternatives	Done			

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.

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

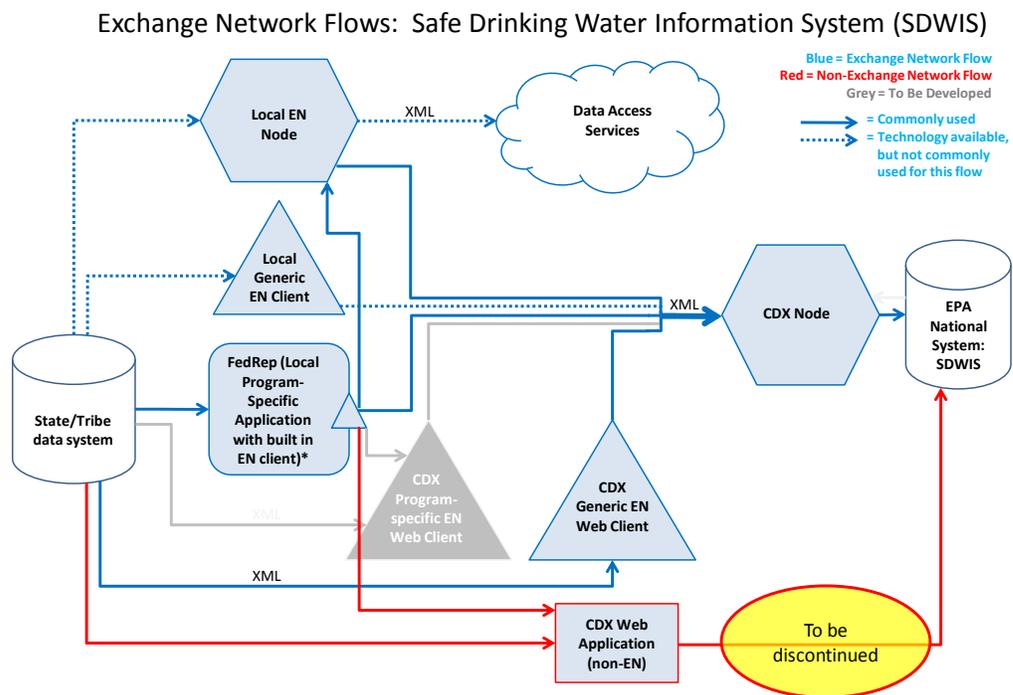
When partners use their EN Node, they can publish SDWIS data for integration with other partners

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

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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.

Underground Injection Control (UIC) Flow Implementation Guide

The UIC data flow facilitates the collection, storage and retrieval of data related to underground injection of materials that may impact sources of drinking water. The UIC program regulates over 800,000 wells, including waste by-products from oil and gas exploration, waste classified as hazardous under RCRA, and any injection to wells that are deeper than they are wide. In the future it may be used to report on carbon sequestration.

BENEFITS

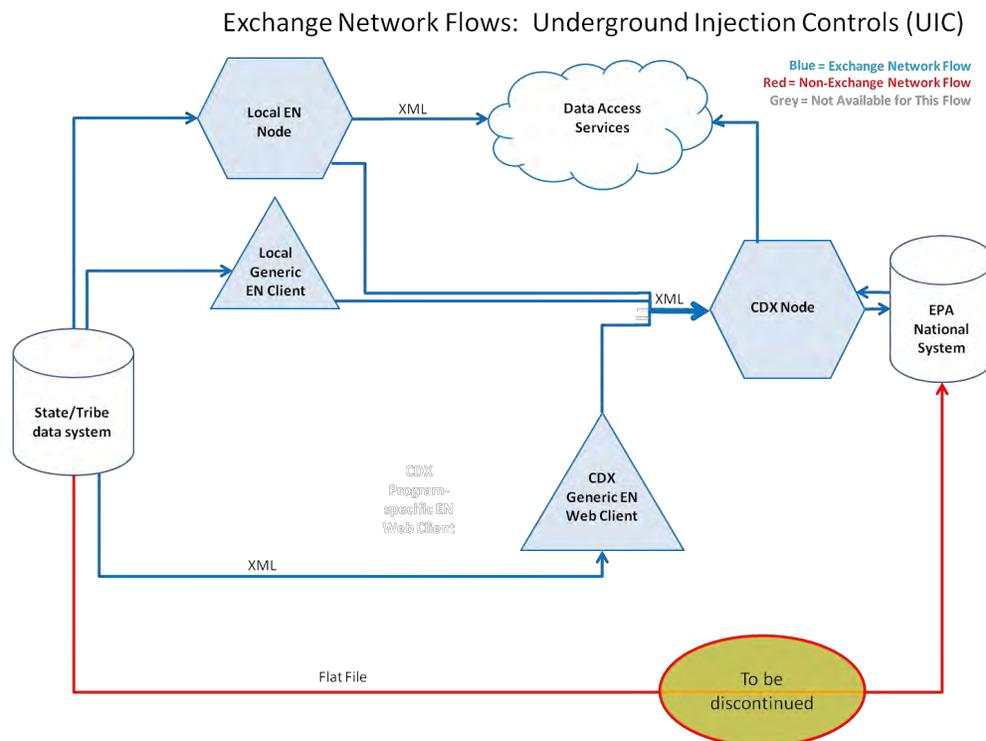
Automated data submission of UIC data will save partners time and money.

Practical Implementation Advice

- Flowing data to EPA from the current State UIC programs through the exchange network is a priority objective and has already been implemented in 25 of the 69 UIC programs." Partners with EN nodes that are not already flowing UIC data via the Exchange Network are encouraged to implement the flow.
- Agencies with responsibility for submitting UIC data that do not have an EN node should consider partnering with agencies or other organizations that do have a node—or they can implement currently available free node technology themselves.

UIC Data Flow Options

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



EXCHANGE NETWORK (EN) OPTIONS:

- Submit XML data via a local EN Node, local EN Client, or via the CDX Generic EN Web Client

NON-EXCHANGE NETWORK OPTIONS:

- Some States and tribes send data to EPA via flat files, paper, spreadsheets, or other formats. This approach will be discontinued.

Summary of Current Practice

The UIC version 2.0 schema has been stabilized, and robust submission tools have been implemented. The UIC program published version 2.0 of the UIC XML schema and announced it in the Exchange Network web site (<http://exchangenetwork.net/>) on July 6, 2010, with many key supporting documents.

Many of the entities reporting data are not EN partners—rather, they are State oil and gas commissions, etc. It is common practice for these non-EN partners to submit data to EPA Regions (via a variety of means), and then the Regions submit data to CDX.

Programs not flowing via the EN submit their data in paper, spreadsheet or other non-electronic form (i.e. no other legacy electronic submission systems exist). UIC has stated its intention to eventually receive all submissions via the established EN UIC data flow.

UIC Flow Status and Milestones

To transition users from manual submissions to the Exchange Network, OW is focusing on outreach and recruitment of remaining non-EN submitters with a Q4, 2013 target for full implementation. EN staff will make UIC implementation a special EN grant priority in FY 2011 to help the program meet this target.

Criteria:	Status	Actions	Primary Responsibility	Completion Period
Automation-ready flows	Done			
Solutions for all partners	Done			
Access to transaction status	Done			
Accessible and stable flow documentation	Done			
Specifications for Data Access Services	Attention Required	I. Develop, document, and demonstrate standard specifications for data access services	NOB with OGWDW input	Q4 2012
Clear path to eliminate alternatives	N/A			

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- Clear path to eliminate alternatives. Have a clear path to eliminate legacy system alternatives to EN exchanges, including transition support for partners.

Guide to Regional Waste Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

Guidance Purpose

This document is a tool to help Regional Program Offices work with states to incorporate specific commitments in grant work plans for using the National Environmental Information Exchange Network (Exchange Network). This effort is in support of expressed EPA and state goals to achieve a transition to the Exchange Network as the means of sharing and reporting environmental information across each of the National System Data Flows by the end of CY2012.

The Exchange Network is a collaborative effort among U.S. EPA, states, tribes and territories to exchange environmental data securely and efficiently over the Internet. The Network facilitates electronic sharing, integration, and analysis of environmental data from many sources, making it easier to obtain timely and accurate information to support better decisions about the environment and human health.

In 2009, the Environmental Council of the States (ECOS) unanimously passed a resolution calling for states and EPA to commit to setting an aggressive timetable for achieving a complete transition to the Exchange Network for regulatory data flows based on the readiness of state and U.S. EPA program offices. EPA Administrator Jackson echoed that commitment in her July 7, 2009 memorandum, entitled "Achieving the Promise of the National Environmental Information Exchange Network."

For the past 10 years, EPA, states, and tribes, have worked to build the infrastructure and capacity to participate in the Exchange Network. The U.S. Congress has appropriated \$154 million in grant funds from FY2002–FY2010 in support of this effort. In addition to the monies earmarked to build capacity and infrastructure, Regional Program Offices disburse resources to States and Tribes to implement programs, with an explicit requirement to report regulatory information. The EPA and States through ECOS intend to transition all the regulatory reporting to the Exchange Network. *An exception is for those states, tribes, and territories that are direct users of EPA National Systems.* Some of these organizations will continue to manually input and manage their data directly in EPA program databases such as RCRAInfo and ICIS-NPDES. This guidance is applicable to entities that are providing data to EPA through other electronic means.

To support and hasten this transition, the National Program Manager Guidance for all media areas explicitly calls for the use of the Exchange Network for reporting regulatory information. This document contains specific information, by media area, about what it means to use the Exchange Network. The intent is that Regional Program Offices use this document as a tool to identify specific Exchange Network participation requirements and work with states to codify use of the Exchange Network in their program-specific grant work plans.

Actions for Regional Waste Program Managers

- Adhere to the respective National Program Manager Guidance for the Region.

Guide to Regional Waste Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- Ensure that their staff members are aware of the goal and responsibility to transition to the Exchange Network by CY2012, for regulatory reporting (National System Data Flows).
- Identify Regional Program barriers prohibiting the delegated states, tribes and territories from achieving the Administrator's CY2012 goal.
- Work with the state, tribe or territory to remove any identified barriers.
- Work with states, tribes, and territories to negotiate grant work plans that:
 - Reflect a commitment to use the Exchange Network for all National System Data Flows;
 - Acknowledge the intent to turn off legacy data reporting mechanisms;
 - Identify dates for terminating legacy methods for reporting data;
 - State that costs to establish an Exchange Network data flow may be funded by Exchange Network grants or by categorical program grants, provided that the same work is not funded more than once; and
 - Establish that reporting data via the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Waste Program-Specific Guidance by Priority Data Flows

Office of Solid Waste and Emergency Response (OSWER)

Resource Conservation and Recovery Act Information System (RCRAInfo)

RCRAInfo

An Exchange Network data flow for RCRAInfo is currently available. All partners will eventually need to report data in XML format through the Exchange Network. Partners currently reporting data using the legacy flat-file format should make plans to convert to the Exchange Network data flow as soon as possible.

More information on this data flow including known barriers and practical implementation advice is available at http://www.exchangenetwork.net/exchanges/RCRA_flow%20implementation.pdf.

Relevant language in FY2012 OSWER NPM guidance

- Regions should work with states to:
 - Establish reasonable timelines for transitioning to the Exchange Network; and
 - By FY2012 have established strategies in place for accomplishing this transition.

Regions must work with states to negotiate work plans for categorical grants that:

- Reflect a commitment to begin submitting information to RCRAInfo in XML format using either an Exchange Network Node or a Node Client as soon as possible;
- Acknowledge the intent to eliminate the legacy flat-file translator data reporting mechanism;

**Guide to Regional Waste Program Office for Achieving a Successful
Transition of the National System Data Flows to the Exchange Network**

- Identify a date for terminating use of the legacy flat-file translation method for reporting data to RCRAInfo; and
- Establish that reporting RCRAInfo data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

RCRAInfo Flow Implementation Guide

RCRAInfo is EPA's information system for the hazardous waste program. It contains data on hazardous waste treatment, storage, and disposal. RCRAInfo consists of five modules: Handler; Permitting; Corrective Action; Compliance, Monitoring and Enforcement (CME); Geographic Information Systems (GIS) Module; Financial Assurance Module; and Biennial Waste Activity Reporting

BENEFITS

The EN allows states to stop dual entry into their databases and RCRA Handler

The EN flow pathways are more automated than RCRA Translator

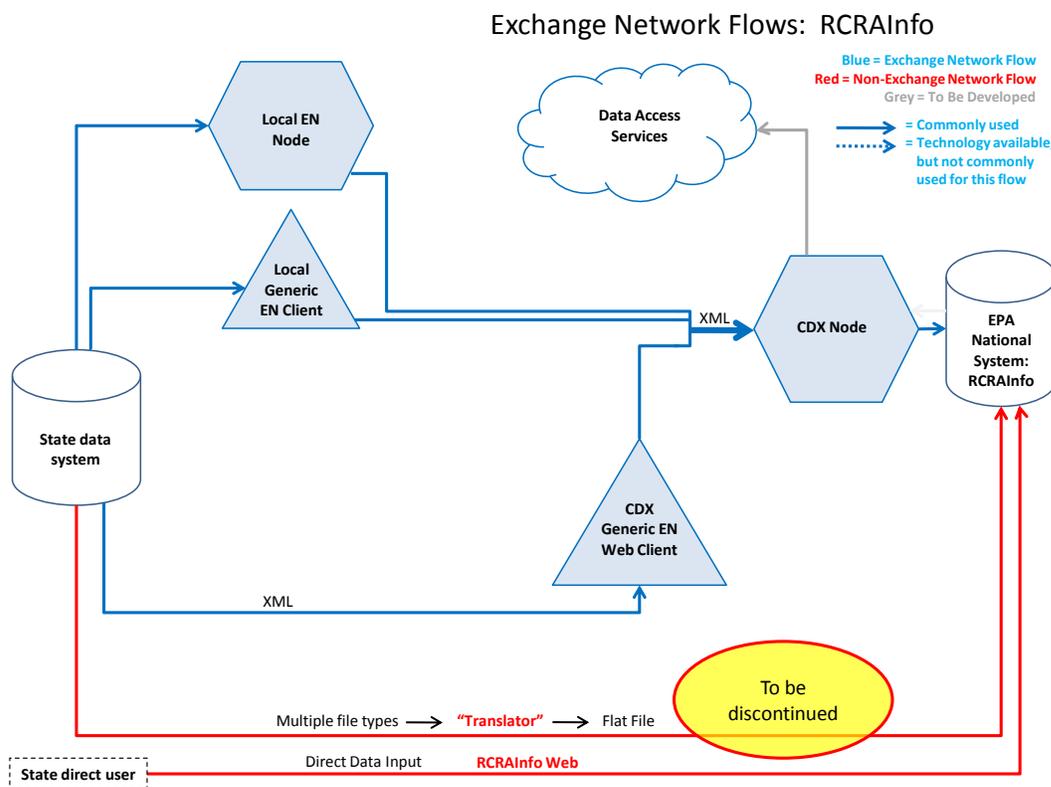
The EN allows partners to retrieve data from RCRAInfo in a more seamless manner

Practical Implementation Advice

- All modules are ready to use, except biennial reporting. Unless a partner is a direct user (i.e., doesn't have its own data system) and intends to stay that way, partners should begin implementing the RCRA modules. Partners may want to start with Handler, which is the oldest and most stable module and which typically accounts for the largest volume of data.
- States already flowing data for one module (e.g. Handler) shouldn't consider themselves "done." They should look to implement other modules that make business sense.
- States doing flat file translation should seek an EN option in anticipation of EPA's elimination of support of the flat file data entry option.

RCRAInfo Data Flow Options

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



EXCHANGE NETWORK (EN) OPTIONS:

- Submit an XML file via a local EN Node, a local Generic EN Client, or a via the CDX generic EN web client.

NON-EXCHANGE NETWORK OPTIONS:

- Direct data input via RCRAInfo Web—this is the most common submission method.
- File submission via RCRA "Translator"—this method is used by partners with their own RCRA data systems; it converts a range of file formats into flat files that are then submitted to RCRAInfo. It is regarded as error prone and subject to frequent changes and will be discontinued.

Summary of Current Practice

Currently, there are a variety of options for submitting data to RCRAInfo. Some States with their own hazardous waste program information systems are currently using the Network. Other States with their own systems use the legacy “translator” service or double enter data into their own system and RCRAInfo. States that do not have their own systems enter data directly into RCRAInfo. The Network’s bidirectional capabilities will enable these States to access their programmatic data via outbound services from EPA much more easily than using RCRAInfo’s reporting features.

RCRAInfo Flow Status and Milestones

With the release of RCRAInfo Version 5.0, the RCRAInfo flow supports all RCRAInfo modules and allows this flow to be fully automated and support error reporting. All flow documentation is available.

The Office of Resource Conservation and Recovery’s (ORCR) development of RCRAInfo’s outbound (published) flows will be a key to the flow’s success. ORCR is planning to define and implement these services for all modules.

ORCR will develop a timetable for turning off the RCRAInfo flat file Translator. This schedule will be dependent upon the States’ ability to transition to an Exchange Network Flow. ORCR has begun discussion with the States on making this transition. ORCR and CDX will need to provide some partners with technical assistance as they move to the EN. Some partners will always continue to use the non-EN direct reporting pathway via the RCRAInfo Web.

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

Criteria:	Status	Actions	Primary Responsibility	Completion Period
Automation Ready	On Track	1. Establish synching outbound data flows to allow for automation	ORCR – primary; EN staff providing technical support as needed	Q4 2011
Solutions for all partners	On Track	2. Provide partners with technical assistance to use existing tools (e.g., transitioning States away from using flat file translation)	ORCR with EN staff support	TBD per strategy document being developed by ORCR with States
Access to transaction status	Done			
Accessible and stable flow documentation	Done			
Specifications for Data Access Services	On Track	3. Implement Handler data access service to improve flow efficiency 4. Implement all RCRAInfo modules via a data access services	ORCR with EN staff support as needed ORCR with EN staff support as needed	Q4 2010 Q4 2011
Clear path to eliminate alternatives	Attention Required	5. Set a timetable for turning off flat-file Translator and accept only XML submissions via EN	ORCR and NTG	TBD per strategy developed by ORCR in collaboration with State programs.

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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.

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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.
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- Clear path to eliminate alternatives. Have a clear path to eliminate legacy system alternatives to EN exchanges, including transition support for partners.

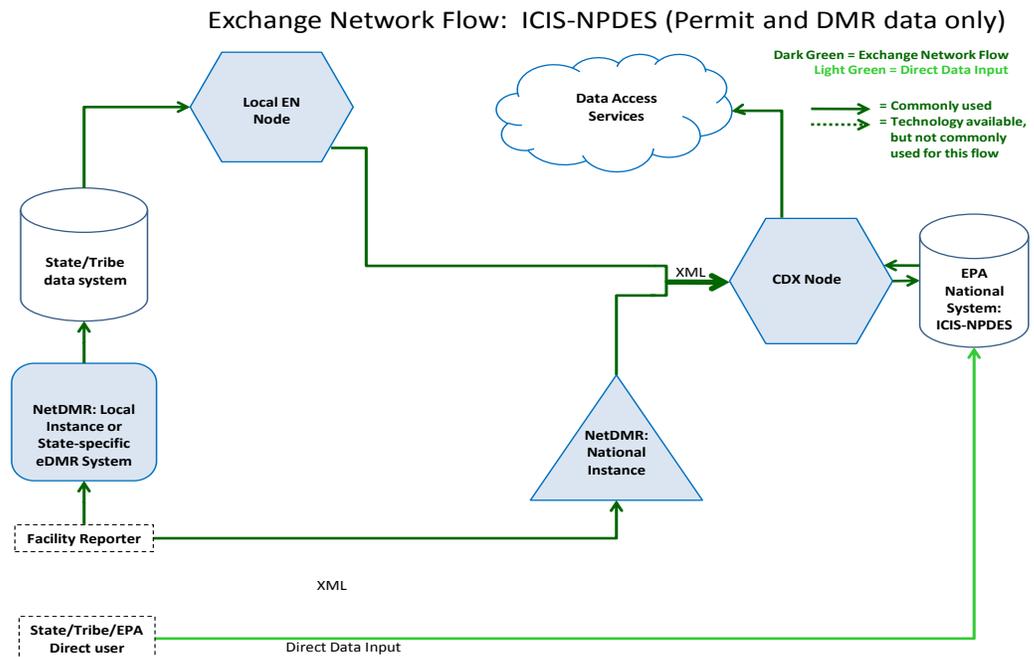
ICIS-NPDES Flow Implementation Guide

Practical Implementation Advice

- ICIS-NPDES Exchange Network data flows are now available for both the Permit and effluent data families, including Discharge Monitoring Reports (DMRs). Partners that are ready to begin transferring batch Permit or DMR data to ICIS-NPDES should implement these data flows.
- Exchange Network ICIS-NPDES flows for all other data families (Inspections, Compliance, and Enforcement) are under development. Partners should participate in the ICIS-NPDES Integrated Project Team (IPT) to stay informed about development plans and timelines.
- Direct users that manually enter data into ICIS-NPDES because they don't have their own data system do not need to change their approach.
- Partners that don't already have electronic systems for collecting Discharge Monitoring Reports (DMRs) should consider implementing a demonstrated electronic DMR (e-DMR) solution, such as NetDMR.

ICIS-NPDES Data Flow Options

The graphic below shows the current options for flowing Permit and DMR data to ICIS NPDES. Exchange Network (EN) flow options are shown in dark green and the direct data input option is shown in light green. No other data exchange options are available for ICIS-NPDES. (Terms are explained in Attachment 1).



The Integrated Compliance Information System (ICIS) is replacing the legacy Permit Compliance System (PCS) for submission of wastewater permits, enforcement, compliance, and Discharge Monitoring Report (DMR) data. The data flows for permit and effluent data families (including DMR) are now available.

BENEFITS

Partners can use the Exchange Network to flow their Permit and DMR data to EPA's ICIS-NPDES system. Data flows for inspections, enforcement, and compliance data are in development.

A return on investment study for the EN showed a high return on investment from automating the DMR data flow.

EXCHANGE NETWORK (EN) OPTIONS:

- Submit an XML file using a local EN Node—This is the preferred option for most partners that manage their NPDES data in a local data system.
- Demonstrated solutions for electronically collecting DMRs (e.g. NetDMR) are available to EN Partners at no charge. Facilities can report electronically using a national instance of NetDMR and information is made available to states via Data Access Services.

NON-EXCHANGE NETWORK OPTIONS:

- Partners may manually enter DMR data into ICIS-NPDES. This is a common choice for partners that do not maintain their own local NPDES data systems

Summary of Current Practice

The ICIS-NPDES data flows for Permit and DMR data are available now. Partners with their own local NPDES system can use their Exchange Network Node to submit Permit and DMR data to U.S. EPA.

Exchange Network options for electronically flowing inspections, enforcement, and compliance data to ICIS-NPDES are under development. States and EPA are meeting regularly as an EN Integrated Project Team (IPT) to jointly discuss the design of the remaining components of the ICIS-NPDES data flow and the ongoing transition from the Permit Compliance System (PCS) to ICIS-NPDES. Partners are encouraged to participate in the IPT to keep abreast of development timelines and progress. Once the ICIS-NPDES data flows are complete and all data have been migrated from PCS to ICIS-NPDES, the PCS system will be retired by EPA.

EPA currently provides an outbound service that allows states to access permit requirements data so that it can be used to support local instances of electronic DMR reporting systems such as NetDMR. As the ICIS-NPDES data flow matures, EPA plans to offer additional outbound services to improve partner access to information stored in ICIS-NPDES. EPA, in consultation with states and tribes, is also exploring how NPDES electronic reporting can be expanded.

ICIS-NPDES Flow Status and Milestones

EPA and the Exchange Network governance are currently working to develop schema and supporting documentation for implementing Exchange Network flows for other data families beyond Permits and DMRs. The ICIS-NPDES Batch Integrated Project Team (IPT) will be developing and testing new schemas for this data. Once all schemas are in production and ICIS is ready to receive the data, any State that wants to transmit data via the Exchange Network may do so. At this point, all States must have either already migrated to ICIS or be scheduled to migrate. OECA will shut down PCS once migration to ICIS-NPDES is complete (currently planned for 2014).

Criteria:	Status	Actions	Primary Responsibility	Completion Period
Automation ready	On Track	<i>The IPT has released final schemas for permit and DMR data families as of February 2011. The group will be addressing other needed schema in the future.</i>	Current IPT	Q1 2013
Solutions for all partners	On Track	<i>No additional action is needed. The processing flow and schema that make up this solution will work for all partners interested in electronically reporting NPDES data to ICIS.</i>	Current IPT	Q1 2013
Access to transaction status	On Track	<i>Will be done as each data family's flow is put into production.</i>	Current IPT	Q1 2013
Accessible and stable flow documentation	On Track	<i>All documentation will be finalized by production in Q1 2013</i>	Current IPT	Q1 2013
Specifications for Data Access Services	On Track	<i>IPT will be discussing data access needed by States</i>	Current IPT	TBD
Clear path to eliminate alternatives	On Track	<i>Support data migration for remaining States and retire Permit Compliance System (PCS).</i>	OECA	Q4 2014

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.

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Guide to Regional Enforcement Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

Guidance Purpose

This document is a tool to help Regional Program Offices work with states to incorporate specific commitments in grant work plans for using the National Environmental Information Exchange Network (Exchange Network). This effort is in support of expressed EPA and state goals to achieve a transition to the Exchange Network as the means of sharing and reporting environmental information across each of the National System Data Flows by the end of CY2012.

The Exchange Network is a collaborative effort among U.S. EPA, states, tribes and territories to exchange environmental data securely and efficiently over the Internet. The Network facilitates electronic sharing, integration, and analysis of environmental data from many sources, making it easier to obtain timely and accurate information to support better decisions about the environment and human health.

In 2009, the Environmental Council of the States (ECOS) unanimously passed a resolution calling for states and EPA to commit to setting an aggressive timetable for achieving a complete transition to the Exchange Network for regulatory data flows based on the readiness of state and U.S. EPA program offices. EPA Administrator Jackson echoed that commitment in her July 7, 2009 memorandum, entitled "Achieving the Promise of the National Environmental Information Exchange Network."

For the past 10 years, EPA, states, and tribes, have worked to build the infrastructure and capacity to participate in the Exchange Network. The U.S. Congress has appropriated \$154 million in grant funds from FY2002–FY2010 in support of this effort. In addition to the monies earmarked to build capacity and infrastructure, Regional Program Offices disburse resources to States and Tribes to implement programs, with an explicit requirement to report regulatory information. The EPA and States through ECOS intend to transition all the regulatory reporting to the Exchange Network. *An exception is for those states, tribes, and territories that are direct users of EPA National Systems.* Some of these organizations will continue to manually input and manage their data directly in EPA program databases such as RCRAInfo and ICIS-NPDES. This guidance is applicable to entities that are providing data to EPA through other electronic means.

To support and hasten this transition, the National Program Manager Guidance for all media areas explicitly calls for the use of the Exchange Network for reporting regulatory information. This document contains specific information, by media area, about what it means to use the Exchange Network. The intent is that Regional Program Offices use this document as a tool to identify specific Exchange Network participation requirements and work with states to codify use of the Exchange Network in their program-specific grant work plans.

Actions for Regional Enforcement Program Managers

- Adhere to the respective National Program Manager Guidance for the Region.

Guide to Regional Enforcement Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- Ensure that their staff members are aware of the goal and responsibility to transition to the Exchange Network by CY2012, for regulatory reporting (National System Data Flows).
- Identify Regional Program barriers prohibiting the delegated states, tribes and territories from achieving the Administrator's CY2012 goal.
- Work with the state, tribe or territory to remove any identified barriers.
- Work with states, tribes, and territories to negotiate grant work plans that:
 - Reflect a commitment to use the Exchange Network for all National System Data Flows;
 - Acknowledge the intent to turn off legacy data reporting mechanisms;
 - Identify dates for terminating legacy methods for reporting data;
 - State that costs to establish an Exchange Network data flow may be funded by Exchange Network grants or by categorical program grants, provided that the same work is not funded more than once; and
 - Establish that reporting data via the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.

Enforcement Program-Specific Guidance by Priority Data Flows

Office of Enforcement and Compliance Assurance (OECA)

Integrated Compliance Information System - National Pollutant Discharge Elimination System (ICIS-NPDES)

ICIS-NPDES

An Exchange Network data flow for ICIS-NPDES is partially available. Partners can use the Exchange Network to submit Discharge Monitoring Reports and permit data. Data flows are currently being developed to handle inspections, enforcement actions, and all other NPDES data families. Those data flows are expected to be ready in 2013 at which point all states will need to migrate away from the legacy Permit Compliance System (PCS). At that point, the Exchange Network will be the only means of submitting NPDES information to EPA other than manual data entry.

More information on this data flow including known barriers and practical implementation advice is available at

<http://www.exchangenetwork.net/exchanges/ICIS%20NPDES%20flow%20implementation.pdf>.

Relevant language in FY2012 OECA NPM guidance

- Regions should encourage States that are currently using the NPDES Permit Compliance System (PCS) to prepare to migrate to the modernized data system, ICIS-NPDES. The batch data flow capability from States to ICIS-NPDES through EPA's National Environmental Information Exchange Network is currently under development and is scheduled to be implemented in three distinct releases.

Guide to Regional Enforcement Program Office for Achieving a Successful Transition of the National System Data Flows to the Exchange Network

- The first release, scheduled for February 2011, will provide functionality for the transmittal of Permit and Facility information.
- The second release, scheduled for January 2012, will provide functionality for the transmittal of Inspection information.
- The final release, scheduled for March of 2013, will provide functionality for the transmittal of remaining NPDES data families to include Enforcement Actions, Single Event Violations, and Program Reports. Regions should support their States as they move to ICIS-NPDES.
- Actively market and implement the use of NetDMR or other e-DMR tools by permittees for the electronic transfer of Discharge Monitoring Reports (DMR) to ICIS-NPDES, supported by use of the National Environmental Information Exchange Network (Exchange Network), by all of their NPDES permitted facilities.

Regions must work with states to negotiate work plans for categorical grants that:

- Establish that reporting NPDES data using the Exchange Network (i.e., operations and maintenance) is an eligible activity for funding under categorical program grants.