Environmental Information Exchange Network

TRI National Meeting
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Network Steering Board

State/EPA Information Trends

- High demand for access to environmental information among partners

- Current stove-pipe approaches to information exchanges are inefficient and burdensome

- States modernizing information systems and migrating away from use of EPA national systems

- Use of integrated information technologies and approaches is on the rise

State/EPA Shared Vision

The States and EPA are committed to a partnership to build locally and nationally accessible, cohesive and coherent environmental information systems that will ensure that both the public and regulators have access to the information needed to document environmental performance, understand environmental conditions, and make sound decisions that ensure environmental protection.
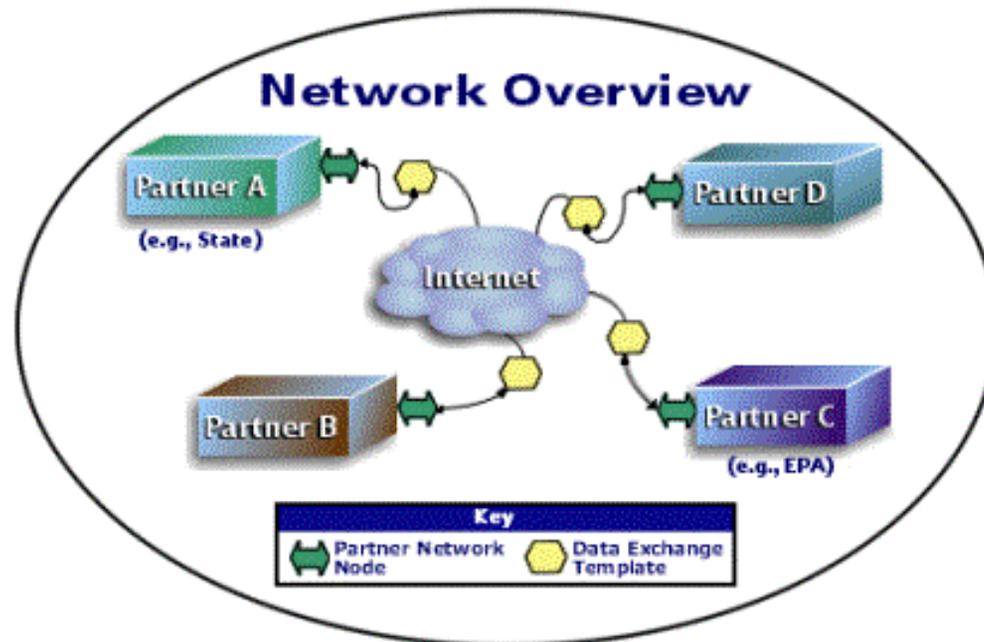
IMWG Develops Exchange Network

The IMWG focused on the issue of "how" data is exchanged between partners (states, EPA, local, industry, other agencies)

- June 2000 – IMWG prepared "*Shared Expectations of the State/EPA Information Management Workgroup for a National Environmental Information Exchange Network (the Network)*"

- July 2000 – IMWG chartered a Network Blueprint Team to prepare the conceptual design for the Network

- October 2000 – IMWG Blueprint Team Initial Report describes the Exchange Network Concepts

- February 2001 - IMWG Blueprint Team Update and commissioning of an Interim Network Steering Group to develop Implementation Plan

- 2002 Exchange Network Implementation plan finalized

- 2002 Network Steering Board (NSB) chartered to implement the Exchange Network

- Fall 2003 – First data flow from State to EPA using the Network (Beaches)
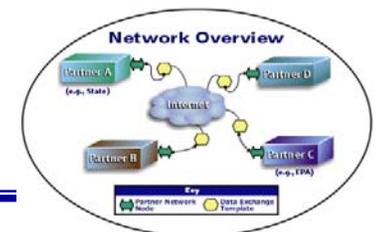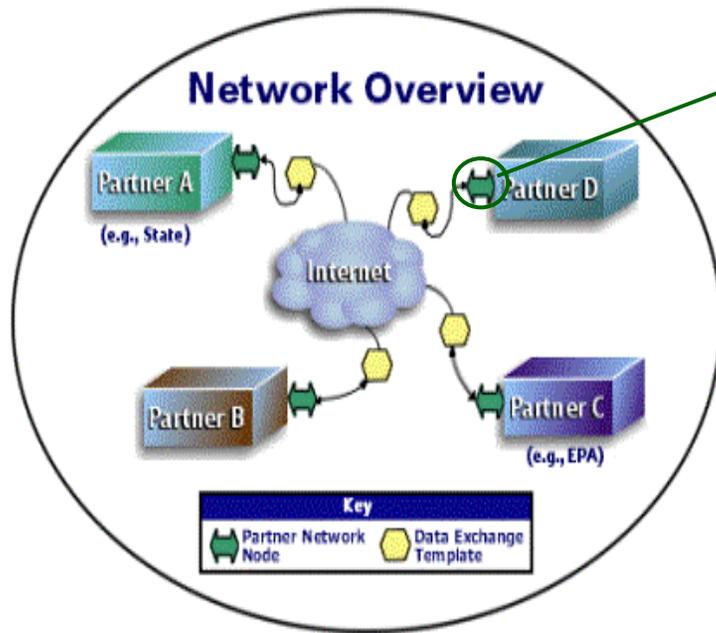
What is the Exchange Network?

An Internet and standards-based method for exchanging environmental information between partners.

Exchange Network Foundations

- Data standards are incorporated

- Partners agree on exchange data type, frequency, and method

  - Trading Partner Agreements

  - Registered XML schema

  - Partners exchange data over a secure network via each partner's data transfer point, or "Node"

Data Transfer Nodes (Web Services)

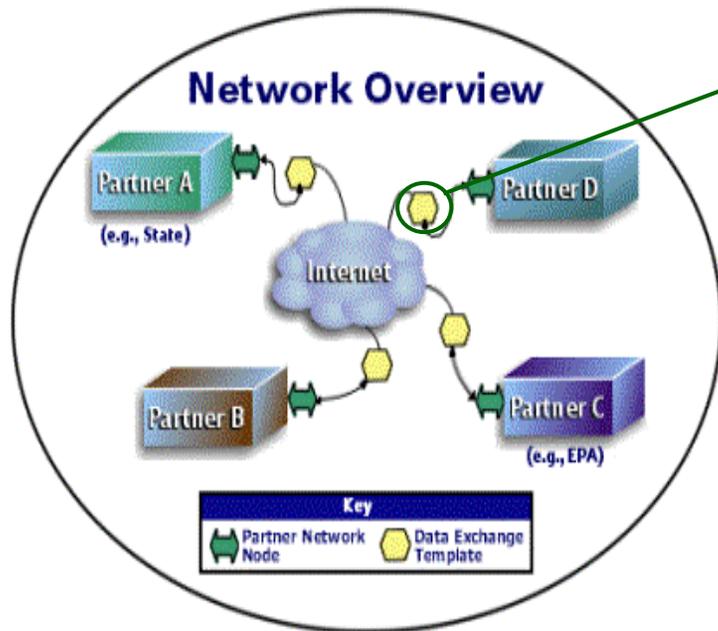Network Overview

- Nodes
  - Hardware and software used to exchange information on the Network
  - Use the Internet, a set of protocols, and appropriate security to respond to authorized requests for information
  - Send the requested information in a standard format, XML
  - Each partner has only one Node

Data Exchange Templates/ XML Schema

Network Overview

- **Data Exchange Templates**
  - Describe format of data being exchanged
  - Consist of XML schema
  - Draw upon data standards
  - Potential to reuse XML schema modules

Schema are developed for each exchange type (e.g., Discharge Monitoring Report data)

Trading Partner Agreements (TPAs)

- TPAs are made between exchange partners (e.g., State and EPA)

- Identify data exchange frequency

- Identify exact data types/fields exchanged

TRADING PARTNER AGREEMENT

Between the Nebraska Department of Environmental Quality hereinafter referred to as NDEQ and the U.S. Environmental Protection Agency Region VII acting as a representative for the U.S. Environmental Protection Agency and hereinafter referred to as EPA for their participation in sharing data as part of the Facility Identification Integration Activities. The use of the term Agency will refer to both partners.
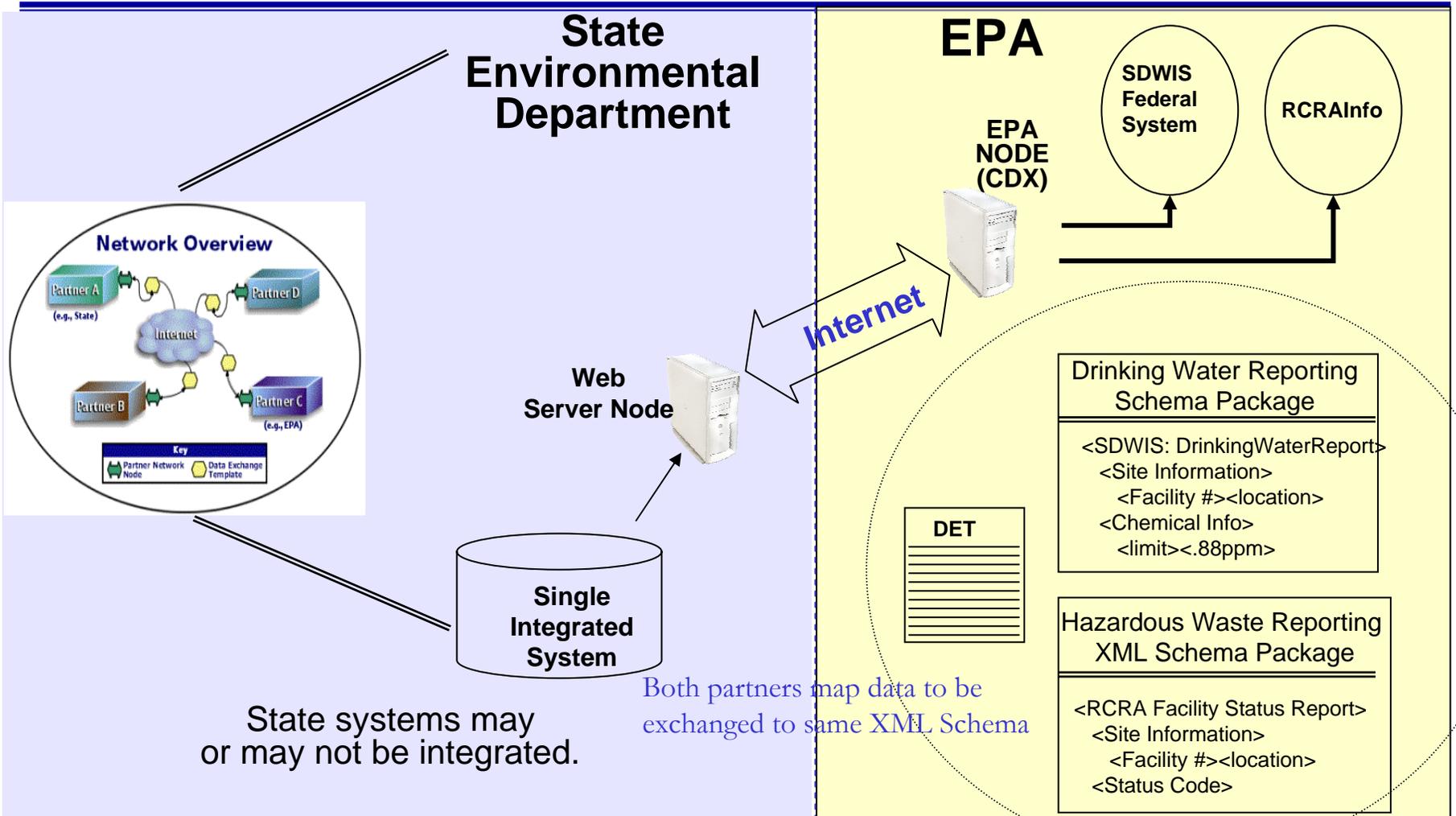
I. PURPOSE

The purpose of this Trading Partner Agreement (TPA) is to identify the activities that NDEQ and EPA will undertake as partners of the Facility Identification Integration Activities. As partners, each will work cooperatively to implement an exchange of facility identification data pertaining to Nebraska sites/facilities for incorporation into the Nebraska Integrated Information System(IIS) and the EPA Facility Registry System(FRS). Each partner will provide internet access to the data, making it available for use by each partner, businesses, interest groups, and the public in general.
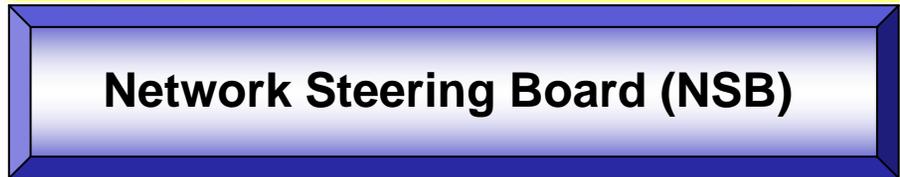
II. BACKGROUND

The partners represent Federal and State Government whose responsibilities in general are for the protection of the environment. As part of their responsibilities, the partners collect and maintain data to support their agency's environmental program interest activities. The consistent identification of facilities within each agency and between agencies is key to the proper use of other data collected by agency environmental programs. It ensures that NDEQ and EPA recognize the same universe of regulated facilities in Nebraska and how these facilities relate to environmental program interests, and their associated data.

How the pieces fit together

State Environmental Department

EPA

Network Overview

SDWIS Federal System

RCRAInfo

EPA NODE (CDX)

Internet

Web Server Node

Single Integrated System

State systems may
or may not be integrated.

Both partners map data to be exchanged to same XML Schema

DET

Drinking Water Reporting Schema Package

<SDWIS: DrinkingWaterReport>
  <Site Information>
    <Facility #><location>
  <Chemical Info>
    <limit><.88ppm>

Hazardous Waste Reporting XML Schema Package

<RCRA Facility Status Report>
  <Site Information>
    <Facility #><location>
  <Status Code>

NSB Management Organization

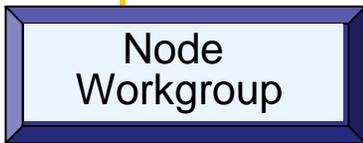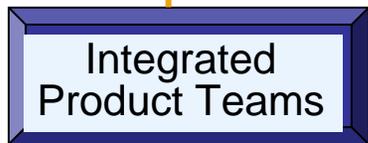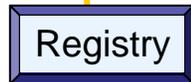*The State/EPA IMWG chartered the NSB to oversee implementation of the Exchange Network*

Network Steering Board (NSB)

EPA

Kim Nelson, OEI (Co-Chair)

Ira Leighton, EPA Region 1

Tom Curran, OAR

Stan Meiburg, Region 4

EPA Director: Pat Garvey

States

Bob Zimmerman, DE (Co-Chair)

Karen Bassett, PA

Gordy Wegwart, MN

Mitch West, OR

State Director: Molly O'Neill

Integrated Product Teams

Node Workgroup

Develop a "How To"/Best Practices guide for states wanting to implement a Node on the Network.

CRM

Registry

DET

TRG Workgroup

Provide specific technical advice and assistance in the use of Extensible Markup Language (XML) related to the implementation of the Network.

NSB Workgroups

- Node Group

  - Node 1.0 – State and EPA group who developed the guidance for establishing the Network Nodes (exchange point on the Network). This group has now sunset but was responsible for:

    – Exchange Network Node Protocol Document v1.1

    – Exchange Network Node Specification Document v1.1

    – Exchange Network Node Implementation Guide v1.0

  - Node Flow Configuration Group – State and EPA group establishing guidance for "configuring" a node with and data flow. Established the templates to be used to verify that all pertinent steps are addressed in moving data.

    - For example, will the partner be sending a "refresh" of data or a "replace and update" of only certain data types.

NSB Workgroups (continued)

- Technical Resource Group (TRG) – addresses all technical issues that are not related to building Network Nodes. Key work areas include:

  - Establishing DET/XML Guidelines

  - Developing and operating the Network Registry

  - Developing the Core Reference Model for "module and reusable" schema across multiple flows

  - Schema review process – ensure XML schema adheres to guidelines and data standards are incorporated. Works closely with the Environmental Data Standards Council

Accomplishments

- **Products**

  - Node Building Specifications and Protocol Documents

  - Node Implementation Plan Guide

  - Node Security Guidelines

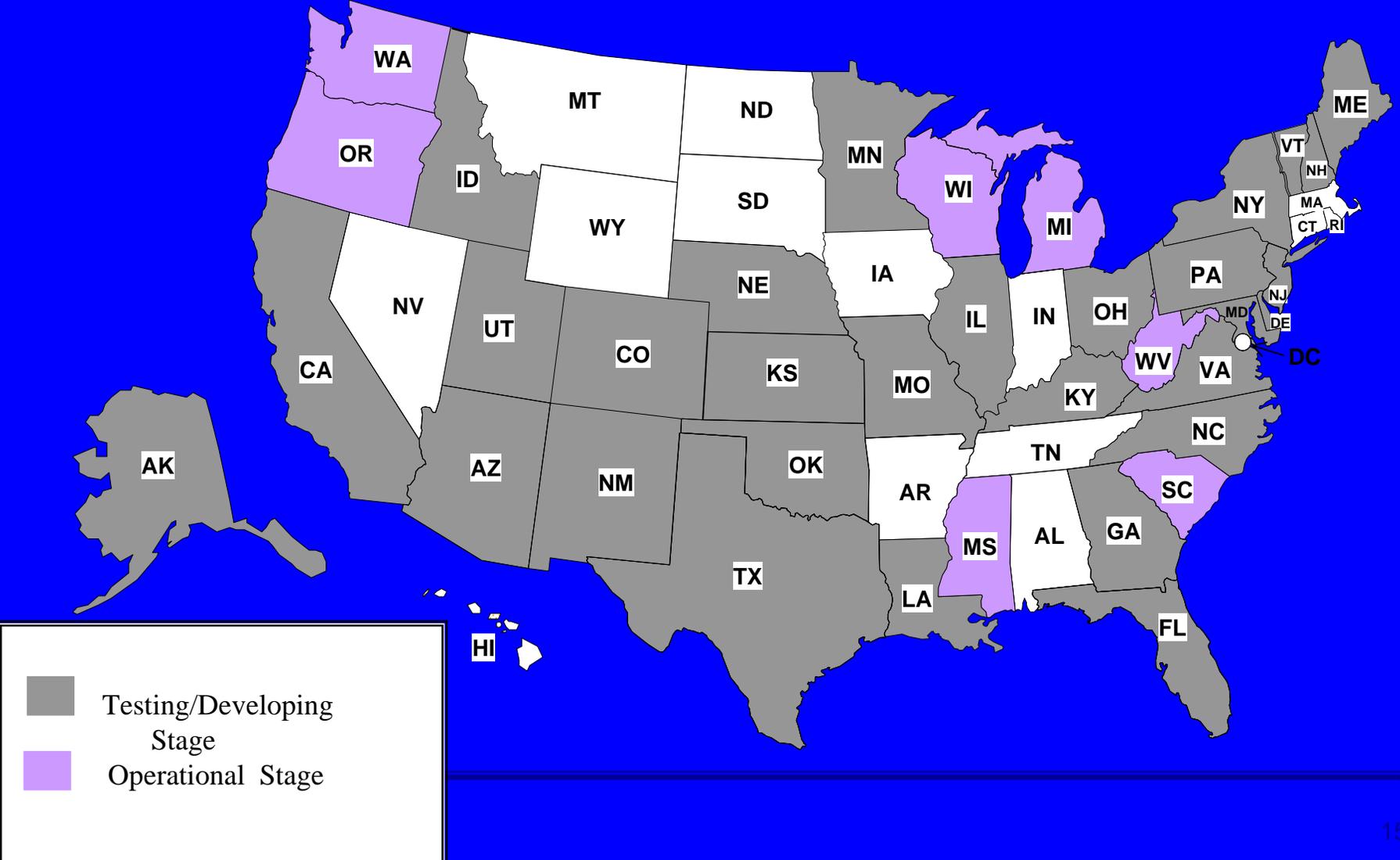 - DET/XML Schema Guidelines

- **Tools**

  - Core Reference Model

  - Exchange Network Registry

  - Demonstrated Node Configurations with Executable Files

  - XML Schema available

  - XML Schema Checker Tool

- **Services**

  - Services concentrated on training, peer to peer knowledge training and maintenance of tools and help desks.

    - XML Bootcamps

    - Network Knowledge Calls

    - Knowledge Transfer Meetings

    - Operation of Exchange Network Registry

    - Operation of Network Hotline

    - Security Certificates

    - CDX Registration

    - XML Schema Review Process

Breadth of Participation - States Are Implementing the Network Design

Legend:
- Gray: Testing/Developing Stage
- Purple: Operational Stage

States Are Implementing the Network Design (Cont.)

- Interest in implementing the Network continues…

  - 20% of States are leading the way

  - 60% of States are in various stages of implementation

  - 10% are in pre-planning stage

  - 10% tracking but not yet engaged

Breadth of Exchange Network

eDMR Challenge Grant
Using the EN to develop electronic Discharge Monitoring Reports with States and EPA

- Michigan, Wisconsin, Florida, Indiana, Pennsylvania, and Minnesota

Beaches Challenge Grant – Exchanging Beach Monitoring Data with EPA

- New Jersey, Delaware, New Hampshire, Georgia, California, North Carolina

Pacific Northwest Surface Water Quality Exchange Challenge Grant - Exchanging surface water monitoring data between states

- Oregon, Washington, Alaska and Idaho

Drinking Water Laboratory Challenge Grant –Exchanging drinking water laboratory results between Laboratories and states using the EN

- New Hampshire, Maine, Rhode Island, Vermont, New Jersey

Progress on Performance Measures

- Performance Goal 1 – exchanges to national EPA National Data Systems (Priority Flows)

Type	Schema Available	Goal	Progress
FRS	Yes	20	6
Beaches	Yes	7	2
NEI	Yes	12	Not due until Spring
PCS/IDEF	Yes	10	1 (eDMR only)
RCRAInfo	No	10	Not available yet
SDWIS	No	10	Not available yet

Progress on Performance Measures (cont'd)

- Performance Goal 2: Multiple flows for states

  - Target was 10-14 States doing multiple

  - Progress: None to date, but many close

- Performance Goal 3: Building Operational Nodes

  - Target: 35 States by end of 2004

  - Progress

    - 7 Operational and exchanging data

    - 9-11 Testing

    - 10 Building

    - 14 Planning

Other Progress/Trends

- While not a set performance measure – much early success has been extending the Exchange Network beyond the State to EPA exchange

  - Facility/Regulated Community to State exchanges occurring

  - State-to-State exchanges occurring

  - State agency to State agency exchanges starting

- Many states are asking for EPA out flows – from EPA to States. For example:

  - TRI data

  - NPDES data (when states aren't delegated)

  - RCRA info data

What's next?

- Harmonization of products

  - In the future, things will be easier

- Continue to look for opportunities to expedite XML schema development

- Look for opportunities to leverage the Network in non-traditional reporting relationships

- Keep up with technology changes

- Measure and demonstrate successes

Contact

www.exchangenetwork.net