# Environmental Information Exchange Network

Molly O'Neill, State Director,
Network Steering Board

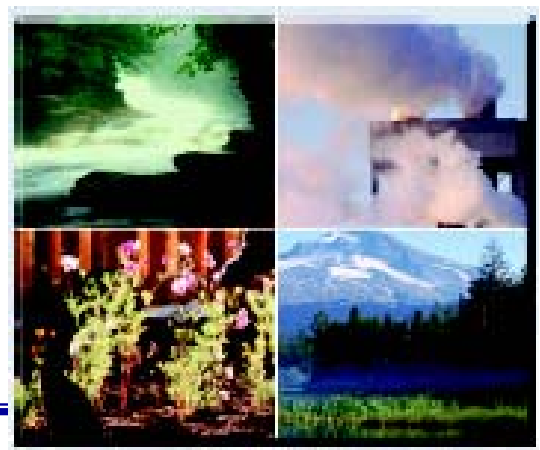
Pat Garvey, EPA Director,
Network Steering Board

# Objectives

- Environmental information trends and challenges
- Overview of State/EPA information management partnership
- Principles and concepts of the Exchange Network
- Milestones
- Getting involved

# 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



# States and EPA Partner to Address Trends and Challenges

- States and EPA were dealing with issues in a splintered and non-cohesive manner
- The State/EPA Information Management Workgroup (IMWG) formed in 1998
- IMWG priority issues:
  - Use information technology to increase the effectiveness of environmental management programs internally
  - Improve access
  - Share and use information efficiently and effectively

# State/EPA Shared Vision

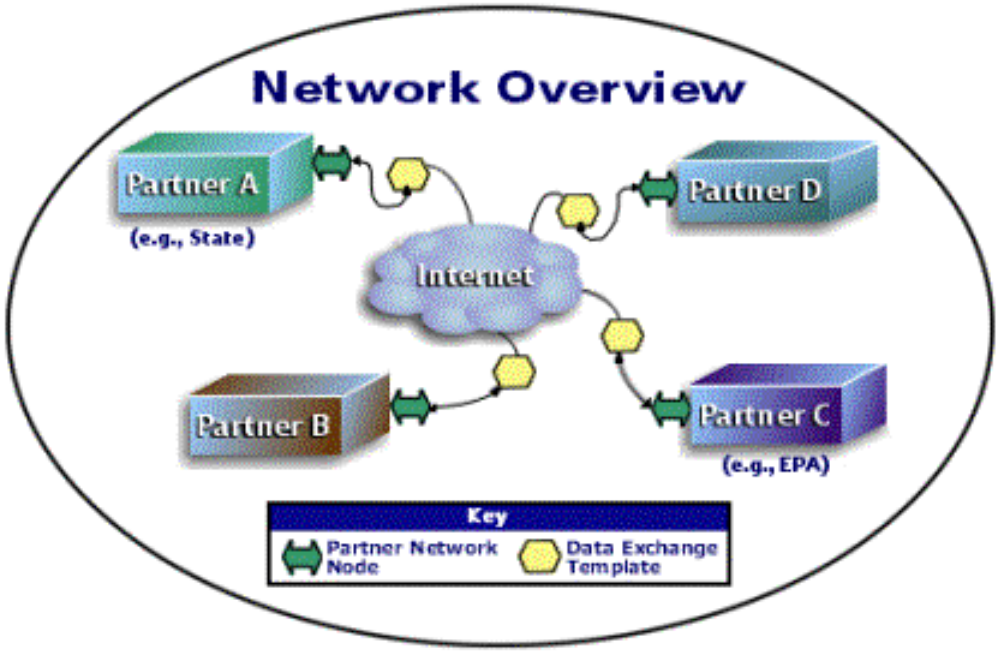
The States and EPA are committed to a partnership to build locally and nationally accessible, cohesive and coherent environmental information systems that will ensure that both the public and regulators have access to the information needed to document environmental performance, understand environmental 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

# What is the Exchange Network?

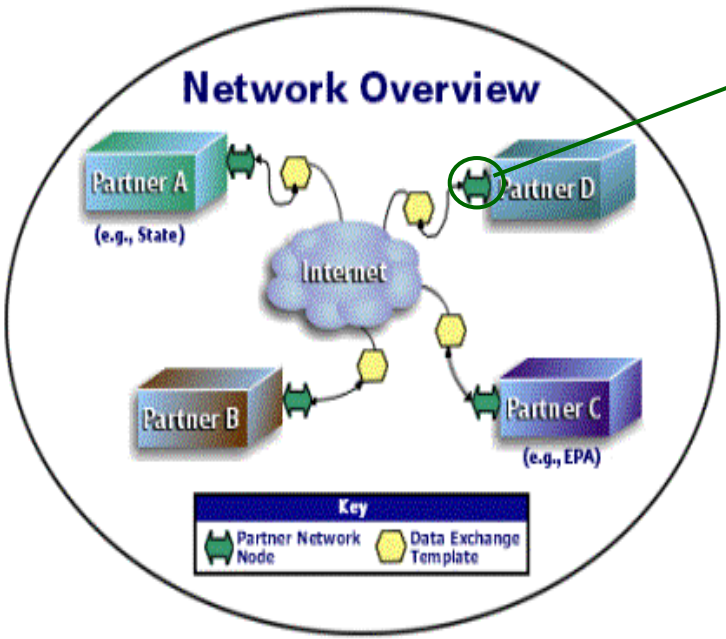



*An Internet and standards-based method for exchanging environmental information between partners.*

# Exchange Network Foundations

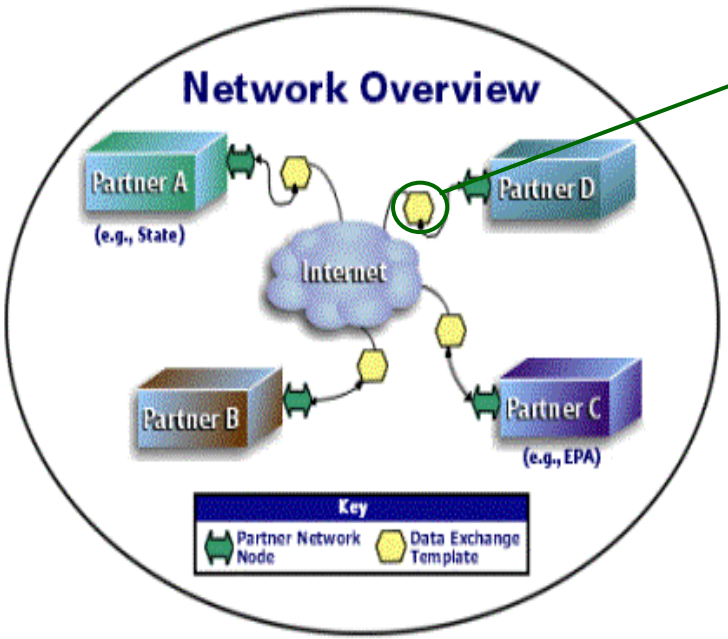
- Data standards incorporated
  - Environmental data standards as adopted by the EDSC
    - Facility Standards, Contact Standards, Permitting Standards, Compliance and Enforcement Standards
  - Utilization of “reusable” XML Schema
- Partners agree on exchange data type, frequency, and method
  - Trading 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)




- 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




- 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., National Emissions Inventory data)

# Trading Partner Agreements (TPAs)

- TPAs are made between exchange partners
- Identify data exchange frequency
- Identify exact data types/fields exchanged
- Uses XML schema

**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.**

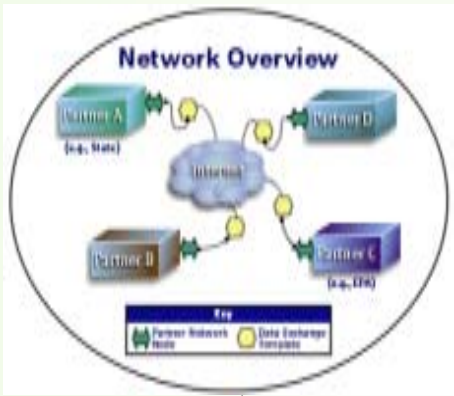
**I. PURPOSE**

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**

**Web Server**

**Single Integrated System**

**NODE**

State systems may or may not be integrated.

**EPA**

**National Emissions Inventory Database**

**RCRAInfo**

**EPA NODE (CDX)**

**Internet**

Emissions Reporting (based on TPA)

DET

TPA

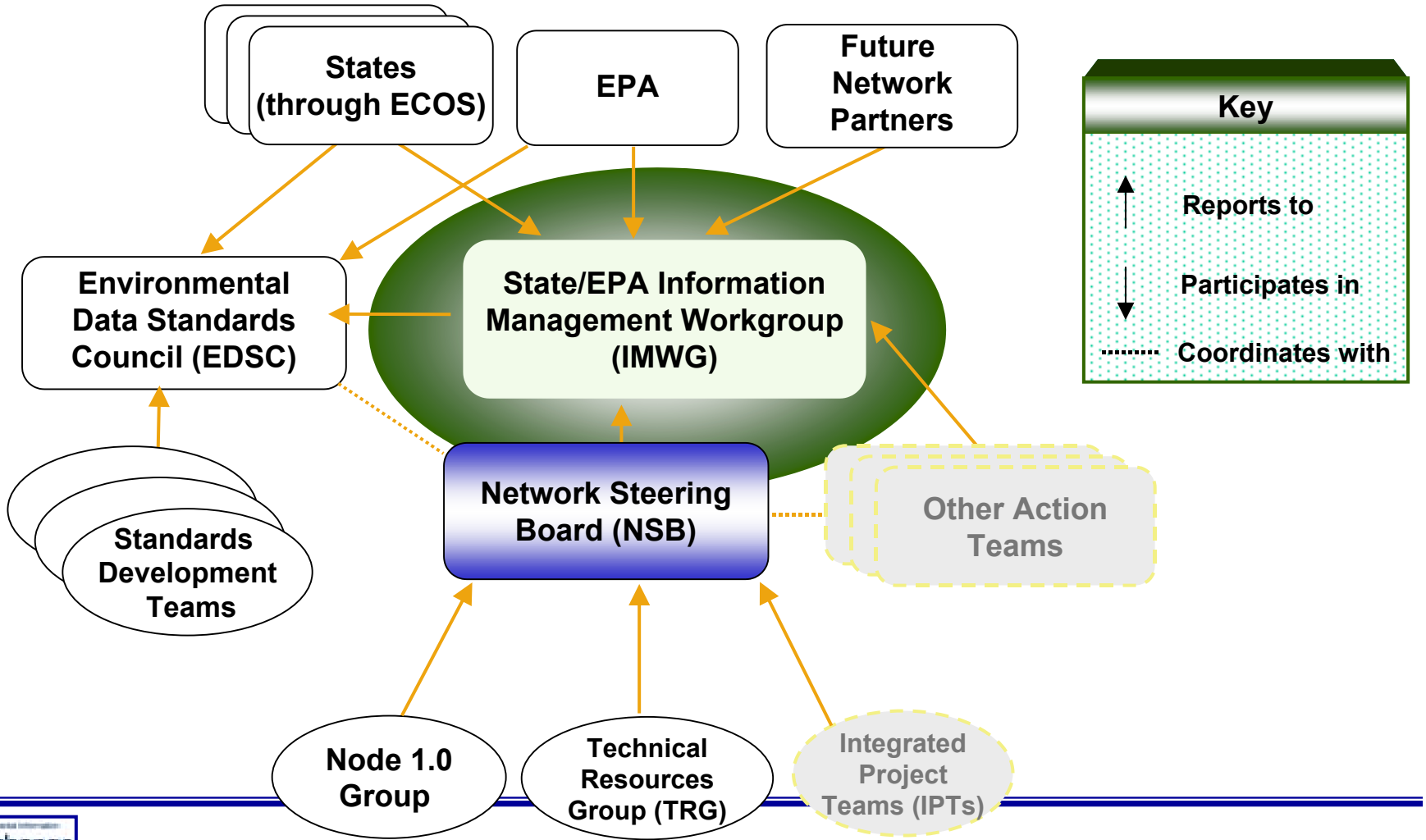
Catalog

<Emissions Inventory Report>
<Site Information>
<Facility #><location>
<Chemical Info>
<limit><.88ppm>

RCRAInfo Reporting (based on TPA)

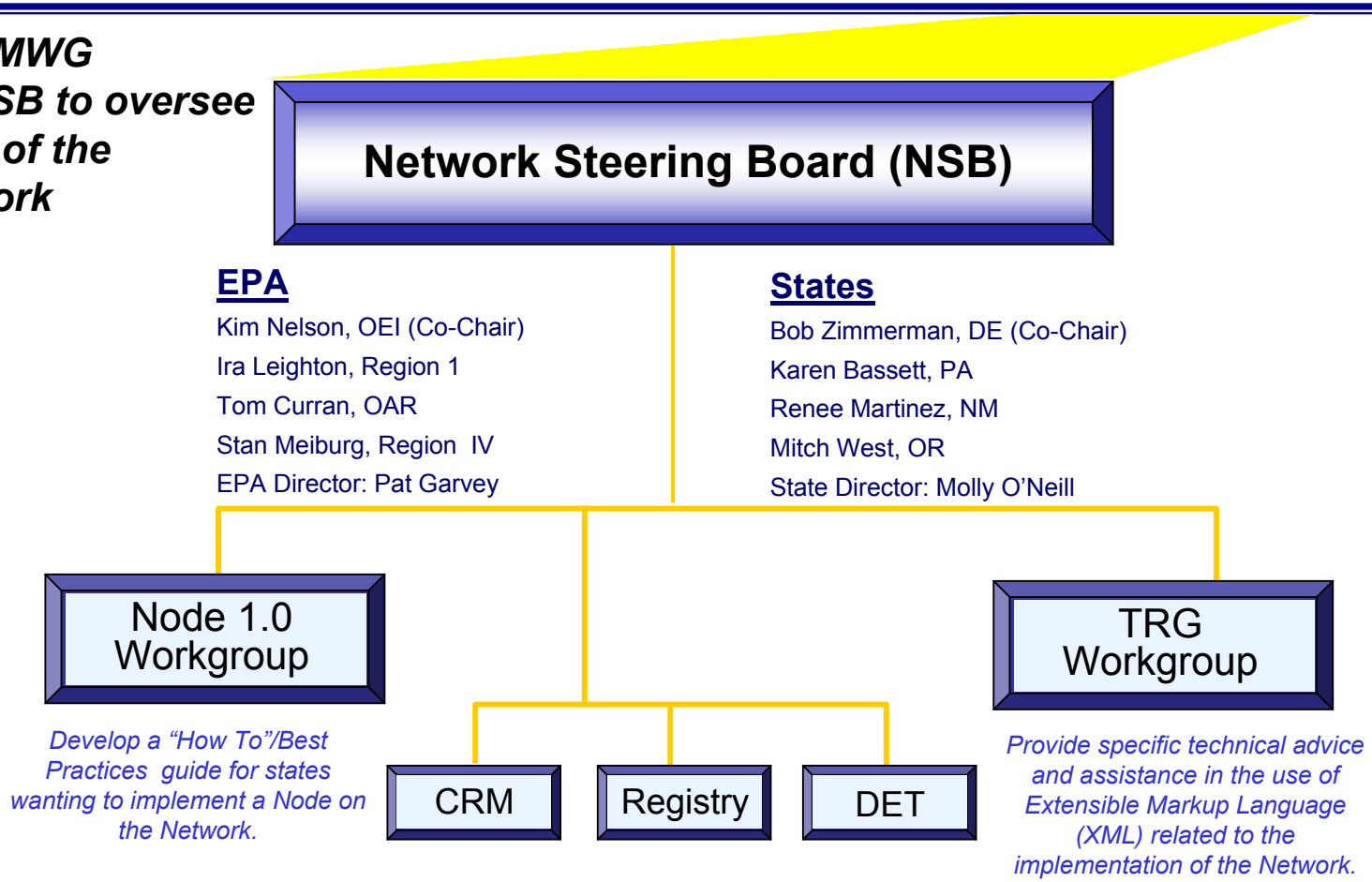
<RCRA Facility Status Report>
<Site Information>
<Facility #><location>
<Status Code>

# Organizational Relationships



# NSB Management Organization

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



# NSB Responsibilities

- Develop and maintain a registry for DETs/Schema
- Develop Network specifications, guidance, and best practices
- Provide technical assistance
- Provide communication and outreach
- Provide overall management and oversight of the Exchange Network implementation

# NSB Workgroups

- Node 1.0
  - Major Focus: Developing Specifications and Protocols for building a functioning Node on the Network
    - Other Important Products: Demonstrated Node Configuration White Papers (specific state experience), Implementation Plan (generic for all partners)

# NSB Workgroups (cont'd)

- Technical Resources Group
  - Core Reference Model Group
    - Relational diagram depicting grouping of data by function to be used in developing XML schema for reuse
  - DET/XML Schema Guidance Group
    - Developed guidance on developing XML Schema
    - XML Schema review process underway
  - Network Registry Group
    - Establish and maintain Exchange Network Registry

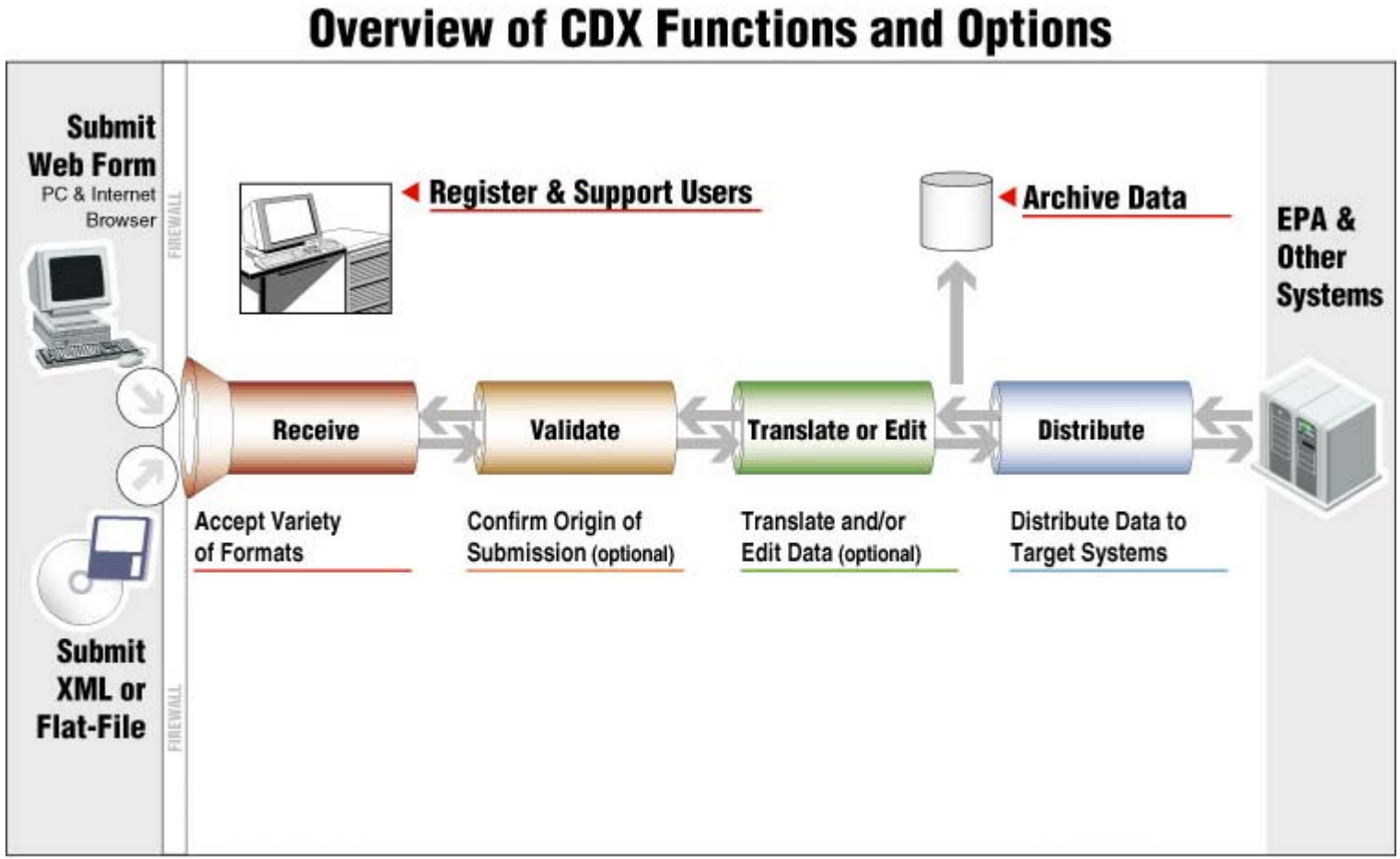
# What Kind of Data or Information Exchanged?

- Driven by partners
- EPA/State environmental partners to establish data flows for all reporting data (e.g., NEI data)

There are three types of data flows identified

- State-EPA Regulatory (e.g., PCS data flow)
- Routine bilateral
- Ad hoc or interactive flows

# Central Data Exchange (CDX)



# CDX Data Flow Priorities

- Facility Registry System (FRS)
- National Emission Inventory (NEI)
- Resource Conversation and Recovery Act Information (RCRAInfo)
- STOrage and RETrieval System (STORET)
- Permit Compliance System (PCS)
- AIR Quality Subsystem (AQS)
- Discharge Monitoring Reports (DMRs)
- Safe Drinking Water Information System (SDWIS)
- Toxics Release inventory (TRI)
- Toxic Substances Control Act (TSCA)
- Unregulated Contaminant Monitoring Regulation (UCMR)

# Benefits

- Delivers timely reliable, standardized, and consistent data between partners
- Reduces reporting burden
  - States will no longer be required to “feed” EPA national systems
- Enhances potential for data integration

# Benefits (continued)

- Sets the stage for the broader exchange of information
  - Between and amongst other States, Tribes, and/or federal agencies (e.g., environment and health departments)
- Realizes cost savings, cost avoidance, and streamlined processes

# Changing Roles!

- Partners assume increased data stewardship responsibilities
- Partners collaborate to develop data/transaction standards and Trading Partner Agreements
- EPA has responsibility for getting data into its own program systems
- Partners have responsibility to map internal system data to Data Exchange Templates or schema

# Year One Milestones

**FY2002 Q1**

- ✔ Charter NSB
- ✔ BETA Node Close
- ✔ Full-Time Staff
- ✔ Recharter TRG
- ✔ Clarify Flow Types
- ✔ Type 1 Flow Schedule

**FY2002 Q2**

- ✔ Joint EDSC/Board framework
- ✔ Re-host Registry[1]

**FY2002 Q3**

- ✔ DET Guidelines
- Registry Manual[1]
- 10 Nodes[2]
- ✔ 5 TPAs

**FY2002 Q4**

- ✔ TPA Guidelines
- ✔ Core Reference Model
- Type 1 Flow Schedule 2003/4
- ✔ Prototype EPA TPAs for 3 flows

Key

✔ Activity Complete

✔ NSB approved activity on hold until deemed necessary

Note 1: Registry Interim solutions to ensure schema available immediately

Note 2: 7 States participating in Node 1.0 – operational FY2003 Q1

# CY2003

- Begin flowing data across the Exchange Network
- Find long-term Registry solution
- Knowledge Transfer to both existing and new Network partners
  - Keys to success are implementing new data flows, and reaching new partners
  - Resources will be focused on knowledge transfer activities including training, meetings, partner to partner meeting, etc.

# How do I get involved?

www.exchangenetwork.net

# For More Information

Pat Garvey
U.S. EPA - Office of Environmental Information
(202) 566-1687
garvey.pat@epa.gov

Molly O'Neill
Environmental Council of the States
(202) 624-3507
moneill@sso.org

www.exchangenetwork.net