

USEPA Exchange Network

Brief overview

Purpose of Exchange Network

- Exchange environmental data among EPA and its state, tribal, and territorial **partners**.
- Electronically collect and store **accurate** info, integrate info from across many **disparate sources**, and provide **secure access** to info in a **timely** manner.
- Eliminates: keeping **various** EPA reporting databases at the state level, **multiple** data entry, and **multiple** copies of datasets.

How does it work?

- Uses the Internet, standardized data formats, and XML.
- Exchanges info between **nodes** maintained individually by **participating partners**.
- A node (dedicated server) is an exchange point for all data requests and submissions.
 - Listens for and submits requests for data from other trading partners and then delivers or publishes the data based upon **pre-described methods**.
 - Are secure and **authenticate** all requests for data to ensure they are coming from an authorized trading partner.
- Or upload file via the Central Data Exchange (CDX)

How does it work? (cont.)

■ Uses:

■ Data standards

- Developed by Environmental Data Standards Council (<http://www.envdatastandards.net/>)
- “Reusable” standards – Examples:
 - Latitude/Longitude
 - Contact Information
 - Environmental Sampling, Analysis, and Results (ESAR) Data Standard

■ Schemas

- The formal definition of the structure and format of the data.

■ Data Exchange Templates (DETs)

- Spreadsheet outlining each data element within the Schema along with definitions, validation rules, and example content. Defines minimal data content.
- A more human readable version of the XML Schema.

■ Data Trading Partner Agreements (TPAs)

- Formal agreements that detail the what, how, and when of data exchanges between trading partners

Example Data Standard

Excerpt from Contact Information Standard:

Name	Definition	Notes	Format	XML Tag
1.1.4 Individual Full Name	The complete name of a person, potentially including first name, middle name or initial, and or surname.	When recording the name of an individual, use either Individual Full Name (1.1.4) or its individual components (1.1.5 – 1.1.7).	A(70)	IndividualFullName
1.1.5 First Name	The given name of an individual.	When recording the name of an individual, use either Individual Full Name (1.1.4) or its individual components (1.1.5 – 1.1.7).	A(30)	FirstName
1.1.6 Middle Name	The middle name or initial of an individual.	When recording the name of an individual, use either Individual Full Name (1.1.4) or its individual components (1.1.5 – 1.1.7).	A(10)	MiddleName
1.1.7 Last Name	The surname of an individual.	When recording the name of an individual, use either Individual Full Name (1.1.4) or its individual components (1.1.5 – 1.1.7).	A(30)	LastName
1.1.8 Name Suffix Text	Additional title that indicates lineage or professional title.	Example List of Values: Jr.	Alpha-numeric	NameSuffixText

Example Schema

Excerpt from Beach Notification Schema:

```
- <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified" >
- <xs:element name="BeachDataSubmission">
- <xs:complexType>
- <xs:sequence>
- <xs:element name="OrganizationDetail" minOccurs="0" maxOccurs="unbounded">
- <xs:complexType>
- <xs:sequence>
- <xs:element name="OrganizationIdentifier" type="Char12">
- <xs:key name="OrganizationKey">
  <xs:selector xpath="OrganizationDetail" />
  <xs:field xpath="OrganizationIdentifier" />
</xs:key>
</xs:element>
- <xs:element name="OrganizationNameDetail" minOccurs="0">
- <xs:complexType>
- <xs:complexContent>
  <xs:extension base="OrganizationType" />
</xs:complexContent>
</xs:complexType>
</xs:element>
<xs:element name="OrganizationMailingAddressDetail" type="MailingAddressType" minOccurs="0"
  maxOccurs="unbounded" />
<xs:element name="OrganizationElectronicAddressDetail" type="ElectronicAddressType" minOccurs="0"
  maxOccurs="unbounded" />
<xs:element name="OrganizationTelephoneDetail" type="TelephoneType" minOccurs="0"
  maxOccurs="unbounded" />
- <xs:element name="OrganizationPersonDetail" minOccurs="0" maxOccurs="unbounded">
```

Example Data Exchange Template (DET)

Excerpt from Beach Notification Template:

Data Element	XML Tag Name	XML Data Type	Req'd (Y/N)	Length	Comment
Activity Type Code <i>Example:</i> <i>CLOSURE</i>	ActivityTypeCode	STRING	Y	12	This value must be set to one of the following: CONTAM_ADV (Contamination Advisory) CLOSURE (Closure) MEETING (Meeting) MONITOR (Monitoring) PROG_EST (Program Establishment) SURVEY (Survey) PERM_CLOSURE (Permanent Closure) RAIN_ADV (Rain Advisory) GRANT_ACT (Grant Activity) This value is required if any beach activity information is included in the XML data file.
Activity Name <i>Example: Closure</i> 34	ActivityName	STRING	Y	60	This value is required if any beach activity information is included in the XML data file.
Activity Actual Start Date <i>Example: 2002-04-12T02:00:00</i>	ActivityActualStartDate	DATE	Y		This value is required if any beach activity information is included in the XML data file. The date should be entered in the XML file in the following format: <i>YYYY-MM-DDTHH:MI:SS</i>

Example Crosswalk from a DET to a Database

Excerpt from Beach Attribute Information Crosswalk:

Data Element	XML Tag Name	My Database (WQD) Name	Special Considerations
Beach Identifier	BeachIdentifier	WQD_Beach.EPA_ID	
Attribute Effective Year	AttributeEffectiveYear	Not used - optional	
Beach Extent Length Measure	BeachExtentDetail/ExtentLengthMeasure	WQD_Beach.Length	
Beach Extent Length Unit of Measure	BeachExtentDetail/ExtentUnitofMeasureCode		Set to FT.
Beach Season Length	BeachSwimSeasonLengthDetail/SwimSeasonLengthMeasure		Set to 3.

EPA gives grant money to participate...

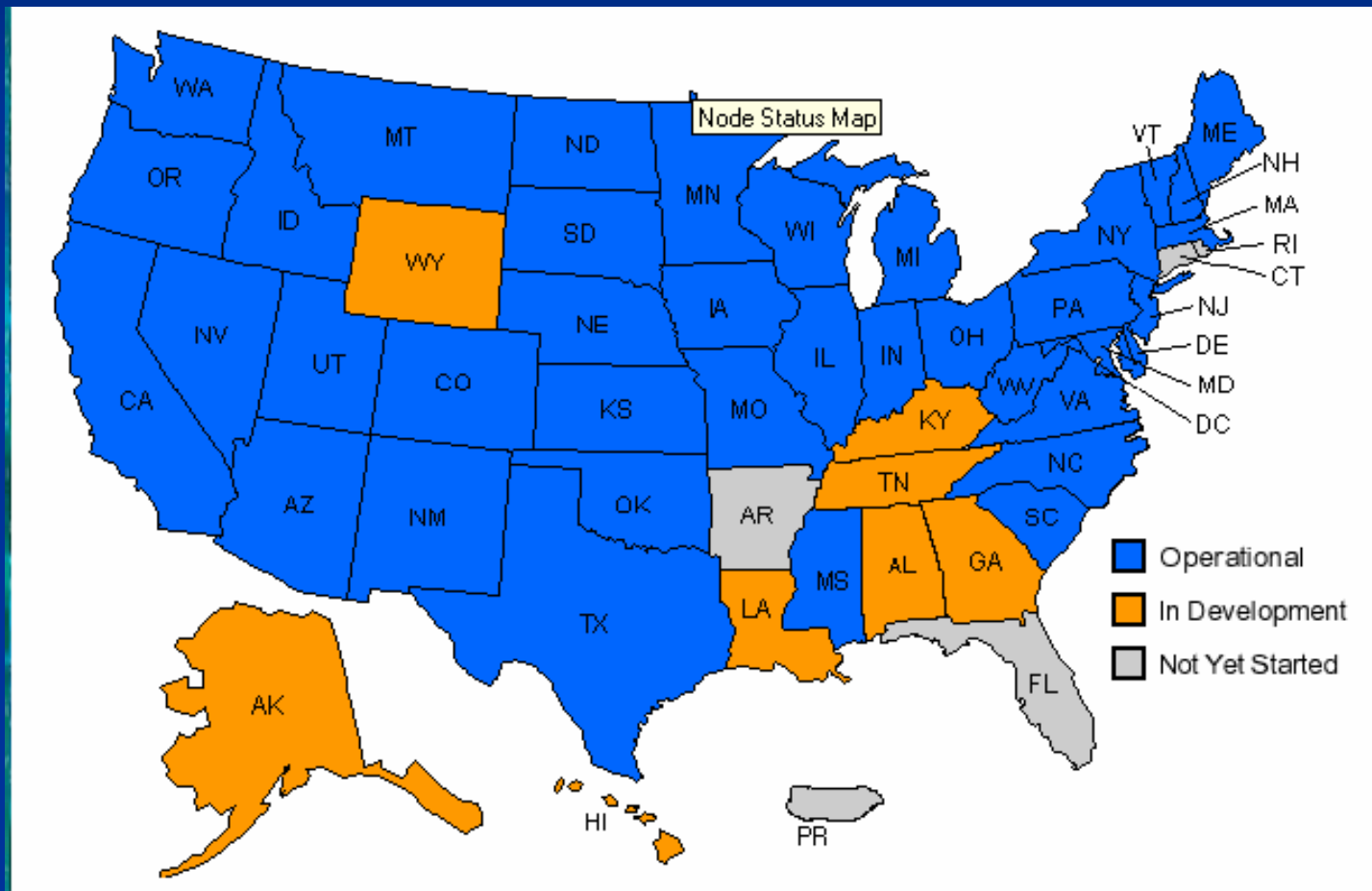
FY 2005 EXCHANGE NETWORK GRANT PROGRAM - TOTALS

Type of Recipient	Total Number of Awards	Total Amount of Awards
Tribes	6 Readiness, 6 Implementation, 1 Challenge = 13	\$1,648,264
States	3 Readiness, 31 Implementation, 10 Challenge = 44	\$16,664,154
Territories	0 Readiness, 2 Implementation, 0 Challenge = 2	\$300,000
All Recipients	59	\$18,612,418

What progress has been made?

38 Operational Nodes

18 registered schemas



More Info

- Environmental Information Exchange Network:
<http://www.exchangenetwork.net/index.htm>

The screenshot shows a Microsoft Internet Explorer browser window displaying the Exchange Network website. The browser's address bar shows the URL <http://www.exchangenetwork.net/index.htm>. The website features a navigation menu on the left with buttons for home, network basics, management, partner benefits, build a node, data exchanges, develop schema, network registry, progress, grants, press room, message board, and workgroups. The main content area includes a search bar, a navigation bar with tabs for archives, contacts, faqs, and calendar, and a welcome message. A sidebar on the right contains sections for 'new to the network?', 'building a node?', 'ready to exchange?', and 'progress and profiles', each with a brief description and a link to more details. At the bottom, there is a 'recent message board threads' section with columns for Thread Title, Author, and Start Date. A map of the United States is also visible, showing the status of various nodes (In Development, Operational, Not Yet Started).

More Info (cont.)

- Environmental Data Standards Council:
<http://www.envdatastandards.net/>

