

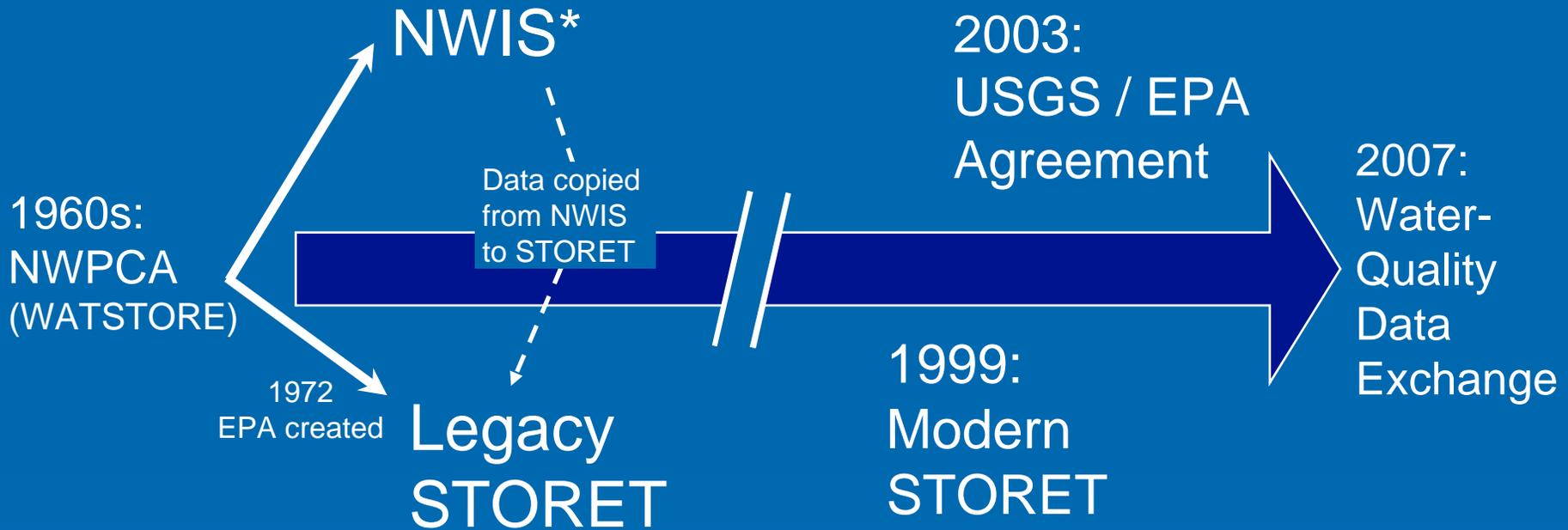
Web Services USGS/EPA Collaboration

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Dwane Young, U.S. EPA; Jon Scott, USGS; Dorinda Gellenbeck, USGS;
Nate Booth, USGS



USGS NWIS* & STORET Over Time



* USGS National Water Information System

Overview

- Working together to develop a common suite of web services
- Focus: sharing of water monitoring data via a common format and common terminology
- USEPA initial web services are now available
- USGS web services are in final testing for initial services

Relevance

- Efficiency - more with less
- New capabilities
 - Data mining
 - Reporting to other systems
- Support monitoring networks
- Shared applications
- OMB mandate

- Now... momentum towards a community of water-quality information

Why Now?

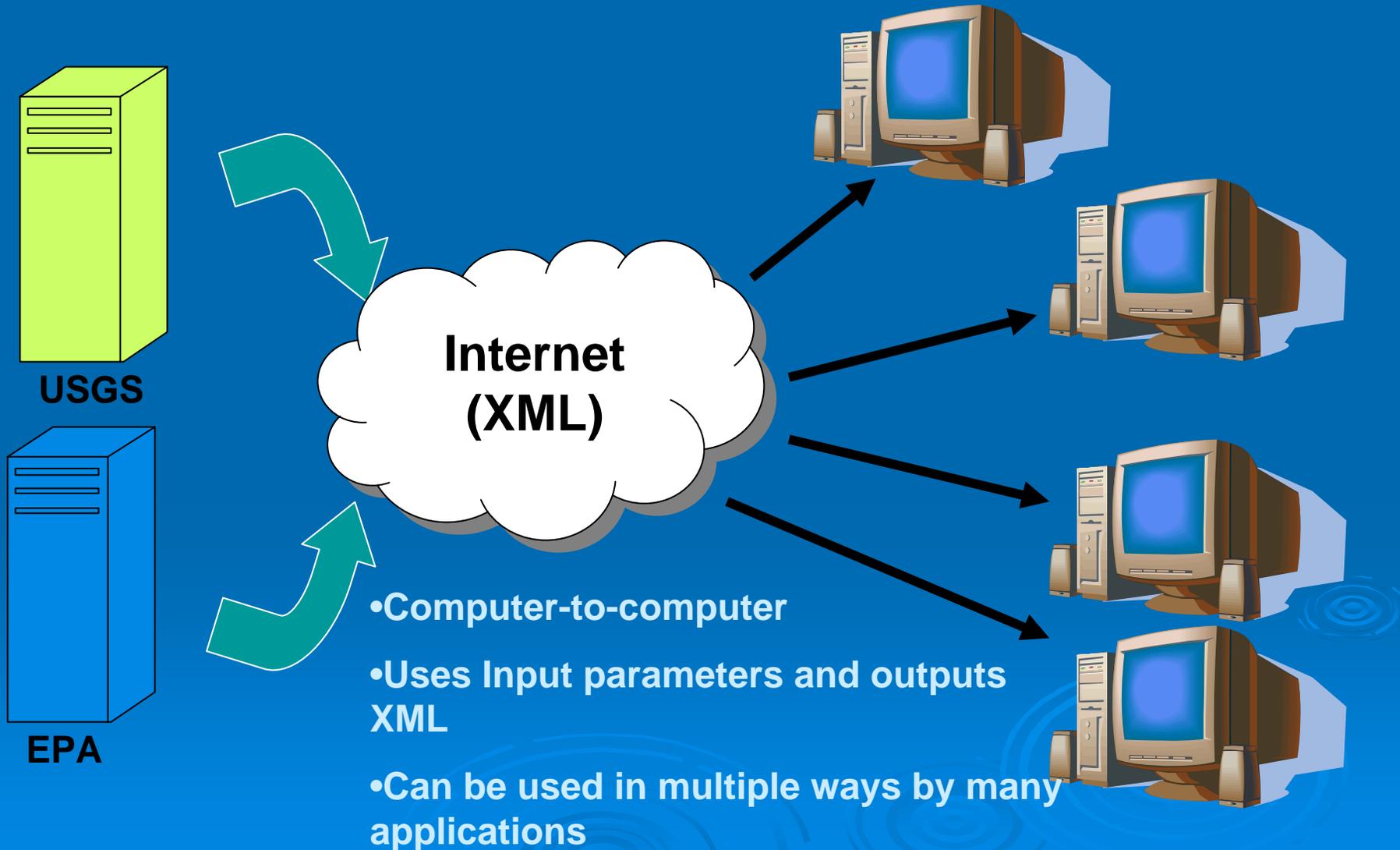
➤ Business:

- Water-quality data standards (NWQMC)
- Move towards monitoring network partnerships

➤ Technical:

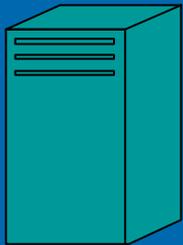
- Industry move towards data and process sharing
- Technology standards

What is a Web Service?



A common web service example

Weather Network



Weatherbug is an example that many are familiar with
This is all done via a Web Service

Returns XML

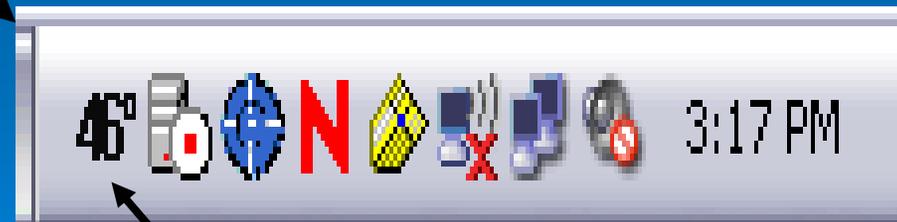
Location Manager

Change ZIP Code/City
Change your location by entering a ZIP Code or City name and pressing "Go".

ZIP Code: CR City:

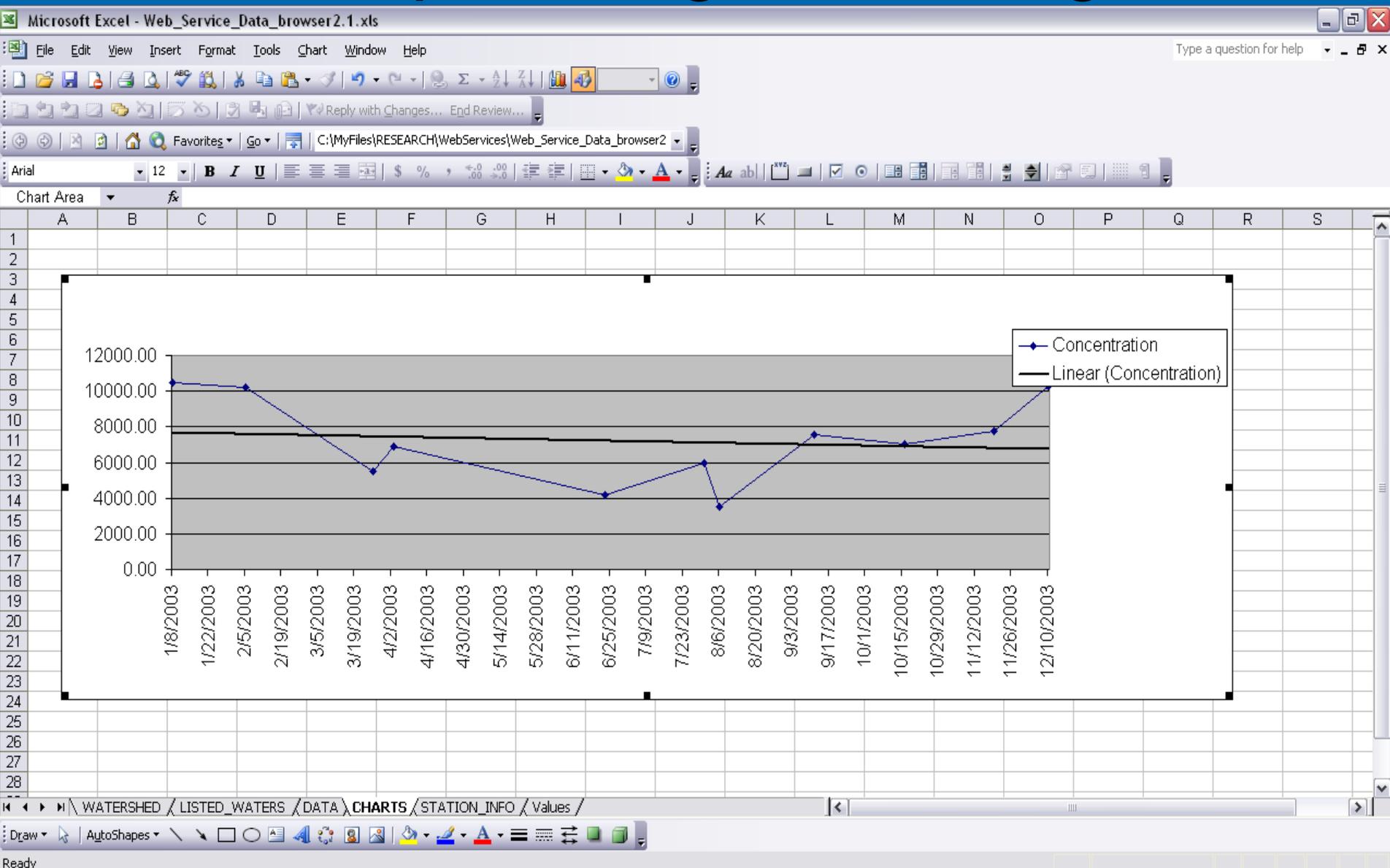
WeatherBug Tracking Stations from the 22554 ZIP C

Input Parameter: Zip Code

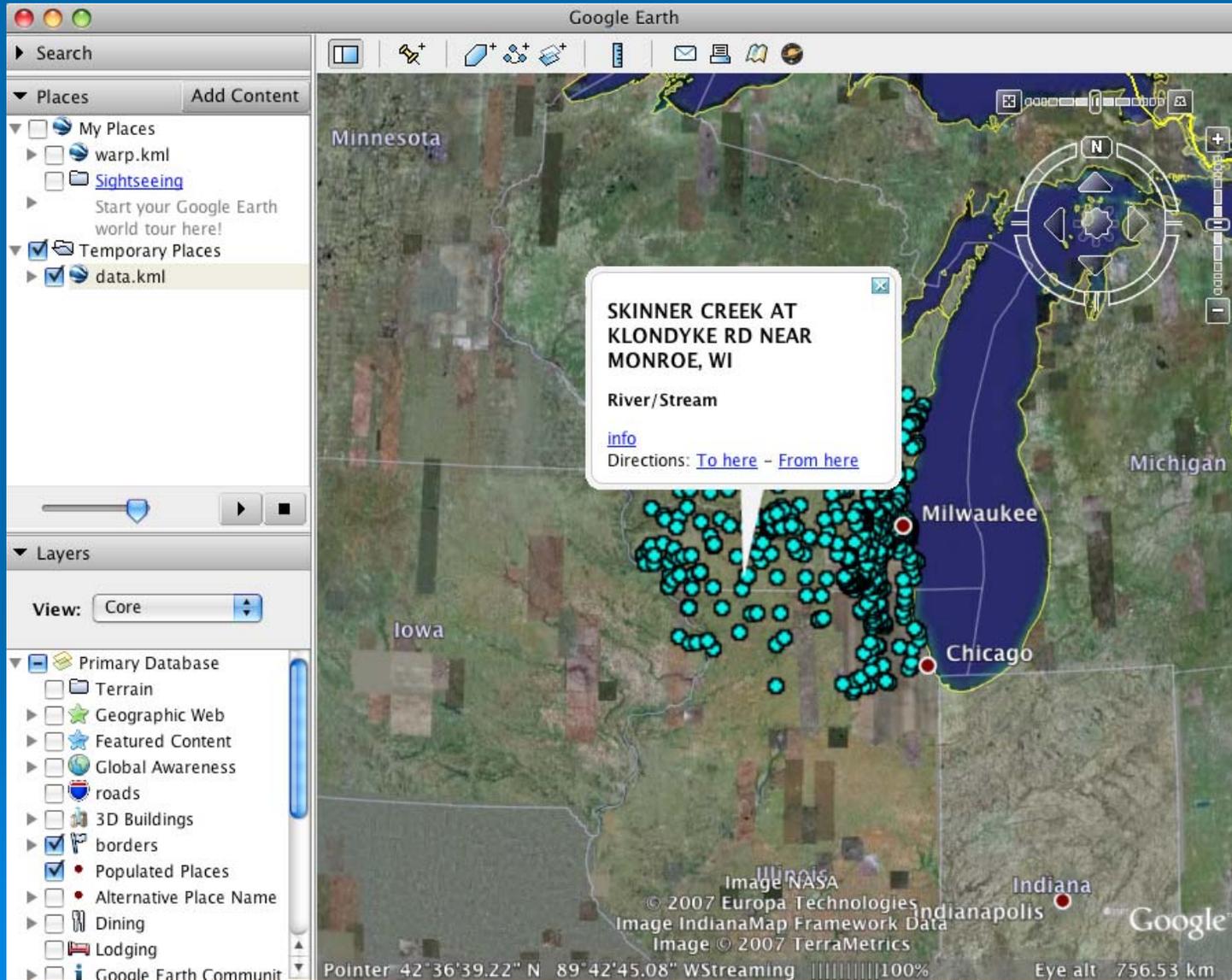


Weatherbug translates XML into information for the task bar

An example using Monitoring Data



XML → Google Earth (KML)



So What?

- Web Services allow for more accessibility to the data.
- No longer limited to EPA or USGS interfaces for interacting with the data.
- Web Services makes a STORET/NWIS collaboration possible.

So What? (cont'd)

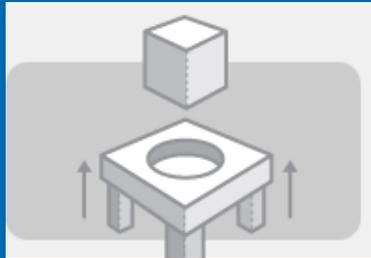
- Web services can:
 - potentially serve as feeds for other state reporting or analysis databases
 - provide a commonly formatted dataset for data analysis and modeling
 - serve as the backbone for project data applications (mashups)

Water-Quality Web Services Initial Tasks

- Design a common data format based on USEPA WQX
- Map Parameter Codes to EPA's Substance Registry System
- Translate other data elements:
 - Site Type, Media and Chemical Groups
- Develop common services for serving Sites, Samples and Results

Data Translation

PCODE



SRS Name

Units

Fraction

Temperature

Basis

Statistical Basis

Time Basis

Weight Basis

Particle Size

Substance Registry System

What Web Services are planned?

- Four core services are being developed:
 - **Stations service** – provides specific station information
 - **Results service** – provides results for modeling, analysis, and decision making
 - **Watershed/Station Catalog service** – provides summary information on what data are available
 - **Project Catalog service** – provides summary information by projects based on an input of min/max latitude/longitude

What's Next

- Testing of services with both USEPA and USGS active
 - Expect to release this year
- A common portal for interacting with these services
- Additional design for sediment and groundwater
- Inventory (Data Discovery) and summary services by:
 - Site, Geographic Area, Watershed, Project

Future

- Dealing with duplicated data
- Common spatial framework: NHDPlus
- Web services support: software libraries and format translators
- Portal and analytical applications

Other Opportunities

➤ Expanding the net:

- These methodologies could grow beyond the current collaboration, and potentially include:
 - Sharing data with other countries (Canada, Mexico)
 - National Science Foundation
 - Other EPA offices running monitoring operations (Great Lakes, Chesapeake Bay)
 - Other Federal Agencies

For more information

- Come by the EPA or USGS booths
- Contact:
 - Dwane Young, USEPA (202) 566-0616
Young.dwane@epa.gov
 - Jon Scott, USGS (405) 810-4415
jon@usgs.gov
- EPA Web Services are available at:
http://www.epa.gov/storet/web_services.html
- USGS Web Services are available at: