

Western States Water Council

Water Data Exchange (WaDE)



EN2014

Philadelphia, PA – Jan. 25 – 27, 2014

Why it's important!

Background...

How it works...

What it will provide...



Western States Water Council



- Affiliated with the Western Governors' Association
- Advises Governors on water policy issues
- Provides a collective state voice
- Fosters collaboration between states and with federal agencies



Data Sharing in the West

**Water Needs and Strategies
for a Sustainable Future:
Next Steps**



Western State Water Agencies

Western water supply is highly variable...



Streamgauge Data

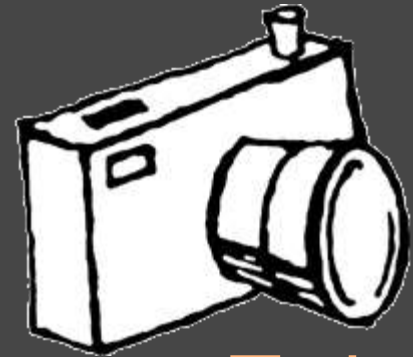
Basin Budgets/Water Supply Estimates

Water Availability Estimates

Diversions, Uses, and Return Flows

Allocations (Water Rights/Permits)

Water Data Exchange (WaDE)



What are the Big Picture Goals?

To improve state water management and planning, as well as policy development

To better enable the states to share important water data with each other, the public and federal agencies.

To improve the sharing of federal data with the states, to assist their planning efforts

On a Smaller Scale...

- 1) Identify the variability between states' data management systems
- 2) Develop a common data schema (common format for planning data)
- 3) Demonstrate how the data exchange will work and its benefits
- 4) Encourage other partners to share data by adopting standardized formats



Hydroinformatics and “Big Data”

How does WADE fit in with
CUASHI, NGWMN, NWIS,
WaterML, Etc.?

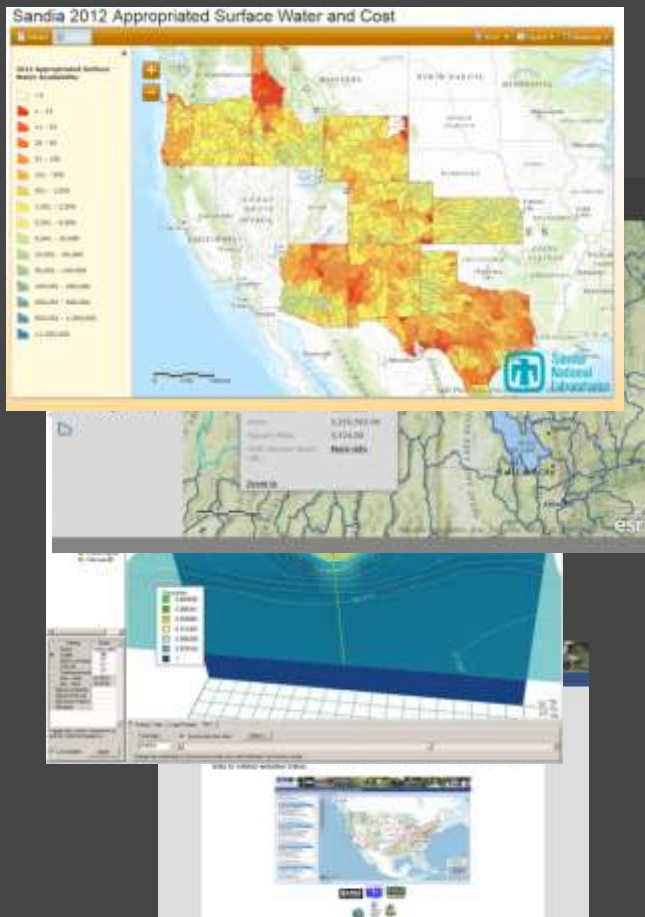
Policy (WGA)

Decision Applications
(Sandia)

Data Sharing & Access
(WaDE)

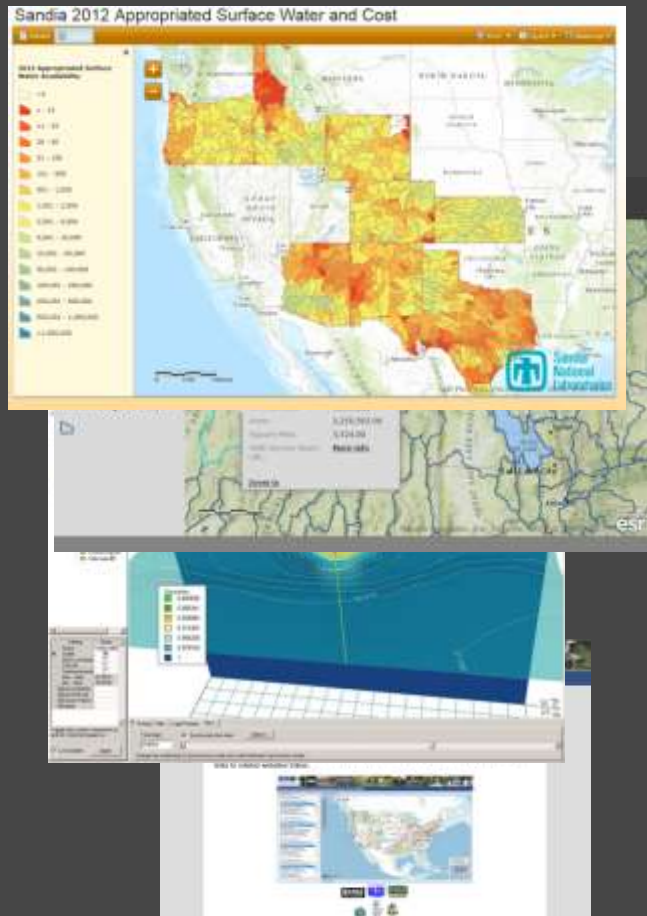
Review & Interpretation
(State)

Sensor/Measurement Data
“BIG DATA” (Hydroinformatics)



Hydroinformatics and “Big Data”

How does WADE fit in with
CUASHI, WaterML, Etc.?



WHY IS IT SO IMPORTANT?



States and Federal agencies, utilities, farmers, journalists, urban planners, politicians, academics... anyone who wants to know more about water...



... questions about water availability will only increase!

With population growth, greater competition, energy security, food security, drought, climate change...



HOW DOES WaDE W

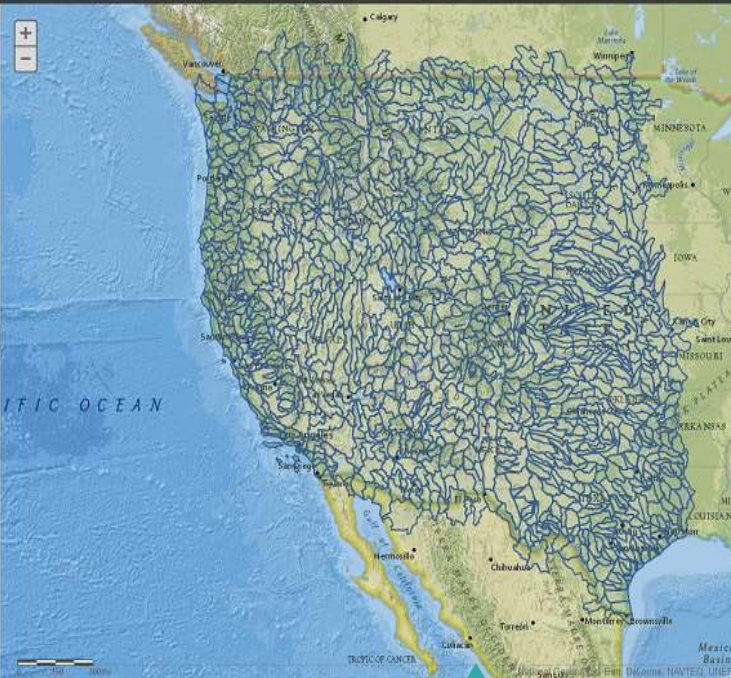
Western Water Data Exchange (WaDE) Central Portal

A mapping application for discovering water data web services hosted by the states, federal agencies and Sandia National Lab

An state agency sponsored initiative to better share water data was begun in 2008 and has taken on a greater importance in more recent years. Faced with the need to collaborate on regional watershed management issues and the growing requests for access to water data, state agencies have initiated the Water Data Exchange (WaDE) project.

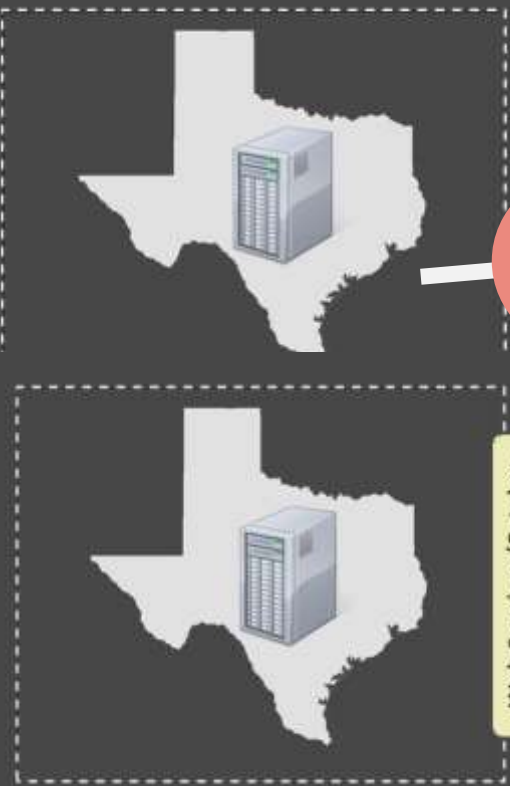
This Central Portal for WaDE provides access to state water data (pictured on the left), such as water planning, availability, use and allocation data, as well as summary water availability results from Sandia National Laboratory's Water/Energy Nexus Study (pictured on the right).

To use the portal, zoom and pan to find your area of interest (both maps will adjust to the same location). Click on either of the maps to see summary information about the hydrologic unit (HUC) and for a link that queries active web services running at each of the state nodes and for Sandia National Laboratory. The hyperlink sends parameter information to the various databases and brings back the information requested in a new browser window.

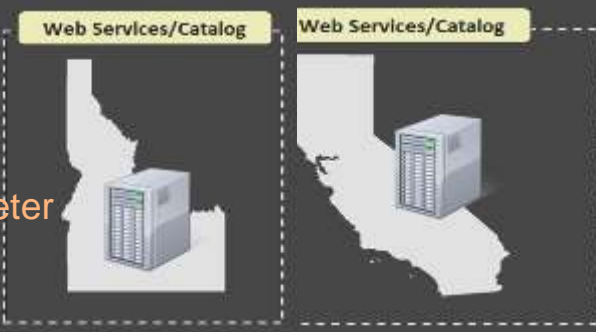


LEGEND

Western 8-Digit HUC Layer



Web Services/Catalog



Web Services/Catalog

Representational State Transfer (REST) Endpoint

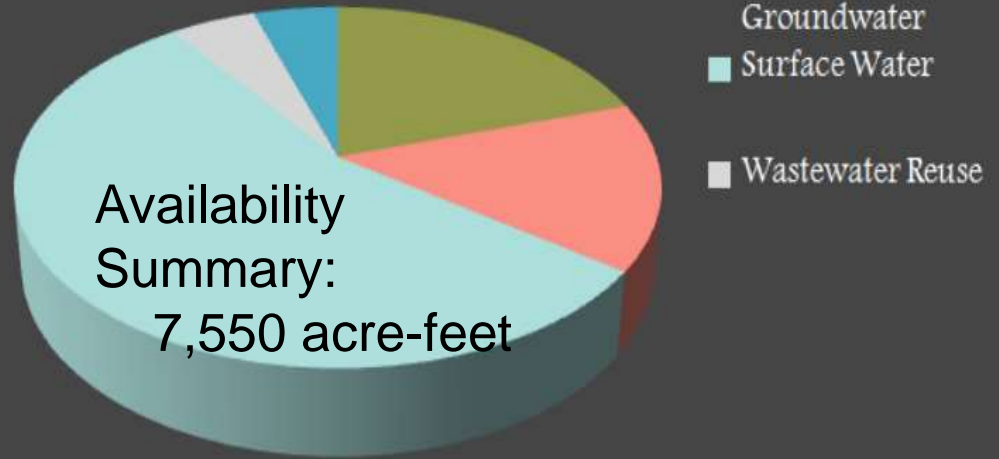
Phase 1 (SOAP): node/service name / parameter
 Phase 2 REST : baseURL/service name /parameter

<http://www.state.us/webservices/GetSummary>

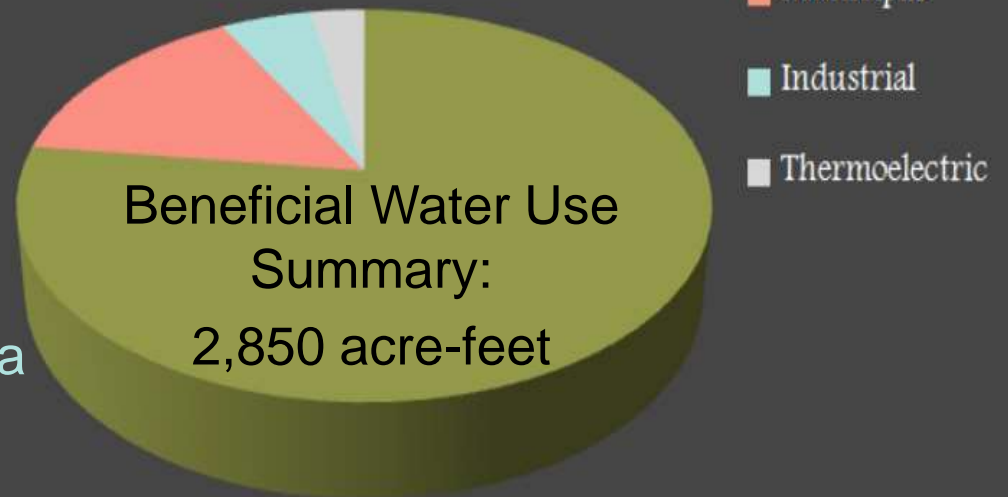
WHAT WILL WaDE PROVIDE?



Water Availability



Water Use



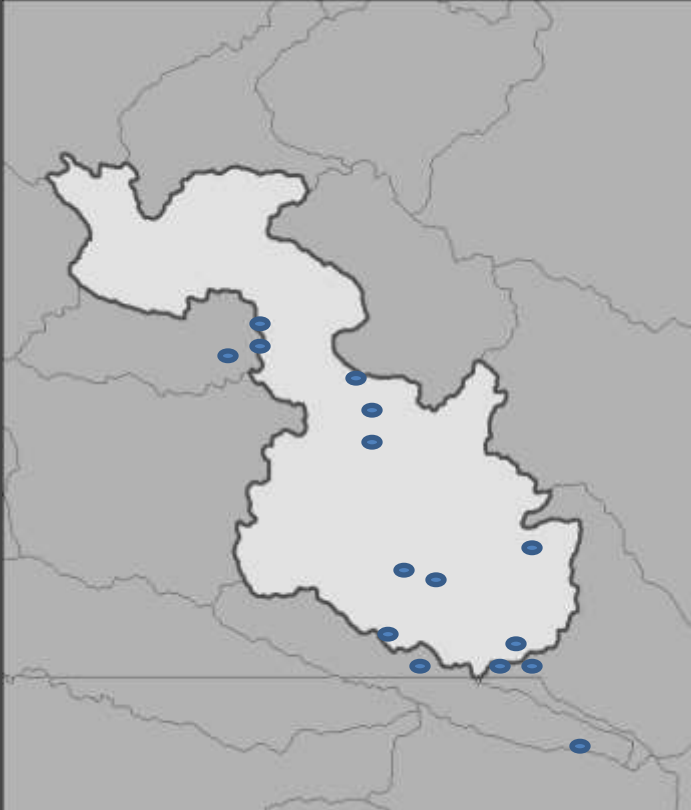
Water Supply Summary:

24,000 acre-feet

Regulatory Summary:

- Groundwater Management Area
- Minimum Instream Flow requirements (aka eFlows)

REPORT – 2013 – Details



Allocation Data

- Water Right Owner
- Status (proposed, finalized)
- Priority Date
- Beneficial Use

Diversion Location

- Beneficial Uses
(e.g. withdrawal/
consumptive)

Return Flow Location

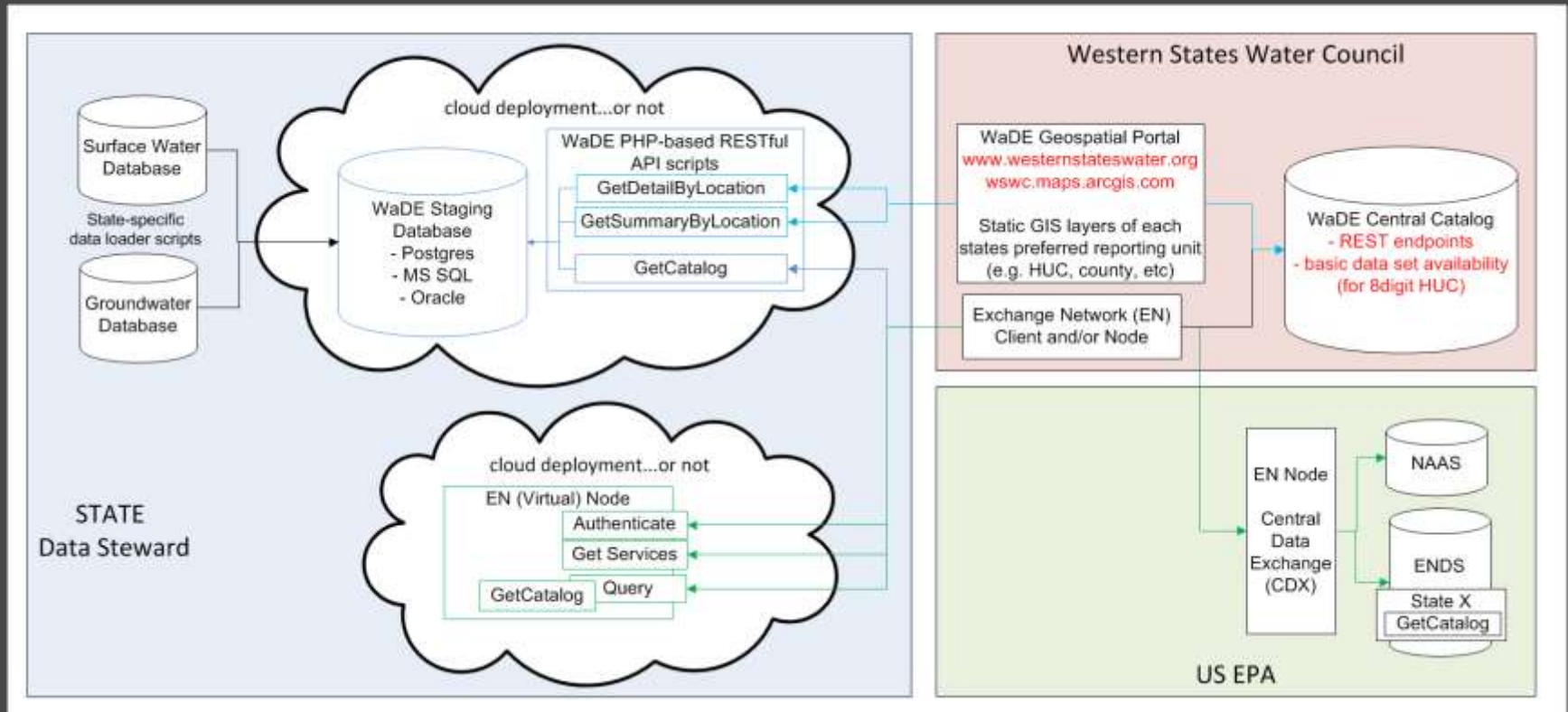
- Consumptive Use



```
<?xml version="1.0"?>
<catalog>
  <book id="bk101">
    <author>Gambardella, Matthew</author>
    <title>XML Developer's Guide</title>
    <genre>Computer</genre>
    <price>44.95</price>
    <publish_date>2000-10-01</publish_date>
    <description>An in-depth look at creating apps
with XML.</description>
  </book>
  <book id="bk102">
    <author>Ralls, Kim</author>
    <title>Midnight Rain</title>
    <genre>Fantasy</genre>
    <price>5.95</price>
    <publish_date>2000-12-16</publish_date>
    <description>A former architect battles corpora
an evil sorceress, and her own childhood to bec
```

HOW DO YOU IMPLEMENT WaDE ?

WaDE is an open source EN-based COT



FY2013 EN Grant multi-state WaDE deployment



- Following the NetDMR grant management and governance structure
 - Texas CEQ providing EN grant management
 - State partners = OK, WA, OR, ID.....UT was recent addition
 - WSWC will provide project coordination, technical assistance and product enhancements



Steering Committee Charter

- Pass-through contracts between TCEQ and grant partners
- Open Source license
- WaDE deployment in partner states
 - IT infrastructure
 - Staff resources / IT contractors
 - EN Node deployment ?
 - WaDE COT deployment (PHP and preferred database schema)

WaDE Project/Product Plans for 2013

+



Finalization of WaDE v0.2 XML schema



Finalization of WaDE MS SQL & Postgres v0.2 database schemas
(Oracle is pending)



Finalization of WaDE v0.2 web services code for both SQL and Postgres database access

- Publication of WaDE Project's State Capabilities Assessment Report – Final Draft ~ May 2014
- Deploy WaDE in states...UT and WY have already begun deployment
- Volunteer states will deploy without outside funding (NM, NE, WY)



Western States Water Council

Water Data Exchange (WaDE) Project

For more information, contact:

Tony Willardson – twillardson@wswc.utah.gov

Sara Larsen – sara.larsen@wswc.utah.gov

Jurgen Koch – jurgen.koch@tceq.texas.gov

For draft items, scheduling, and documentation etc., check out:

www.westernstateswater.org

Click on the “WaDE” tab at the top.

Hopefully, exchangenetwork.net WaDE webpage in future