



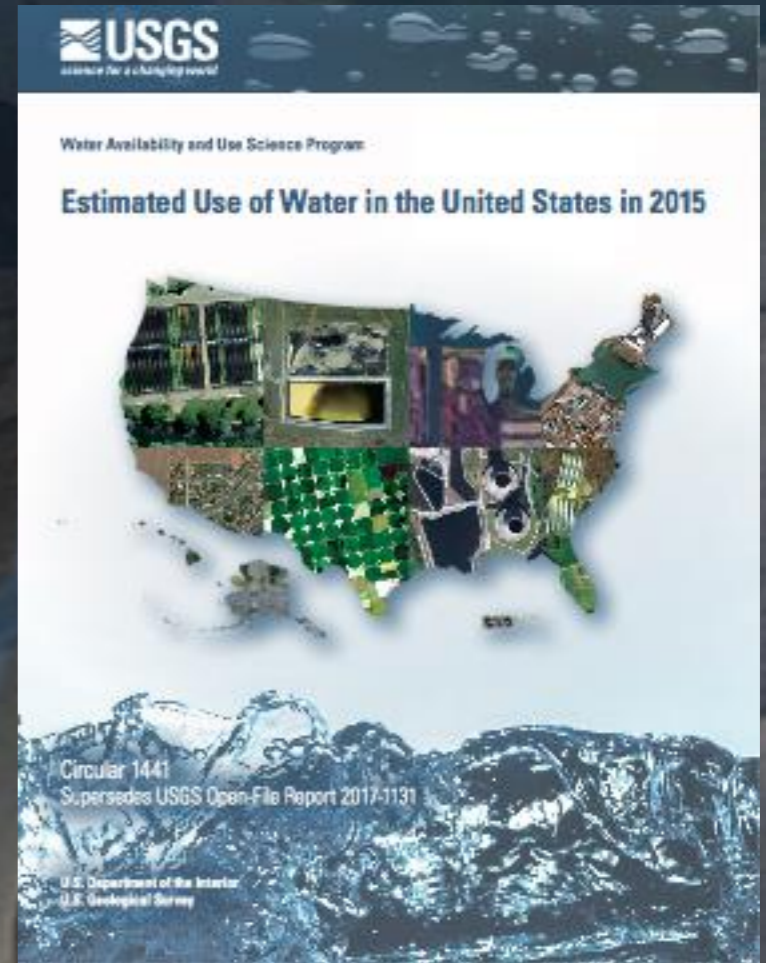
# USGS Water-Use Data System Modernization and WaDE Collaboration

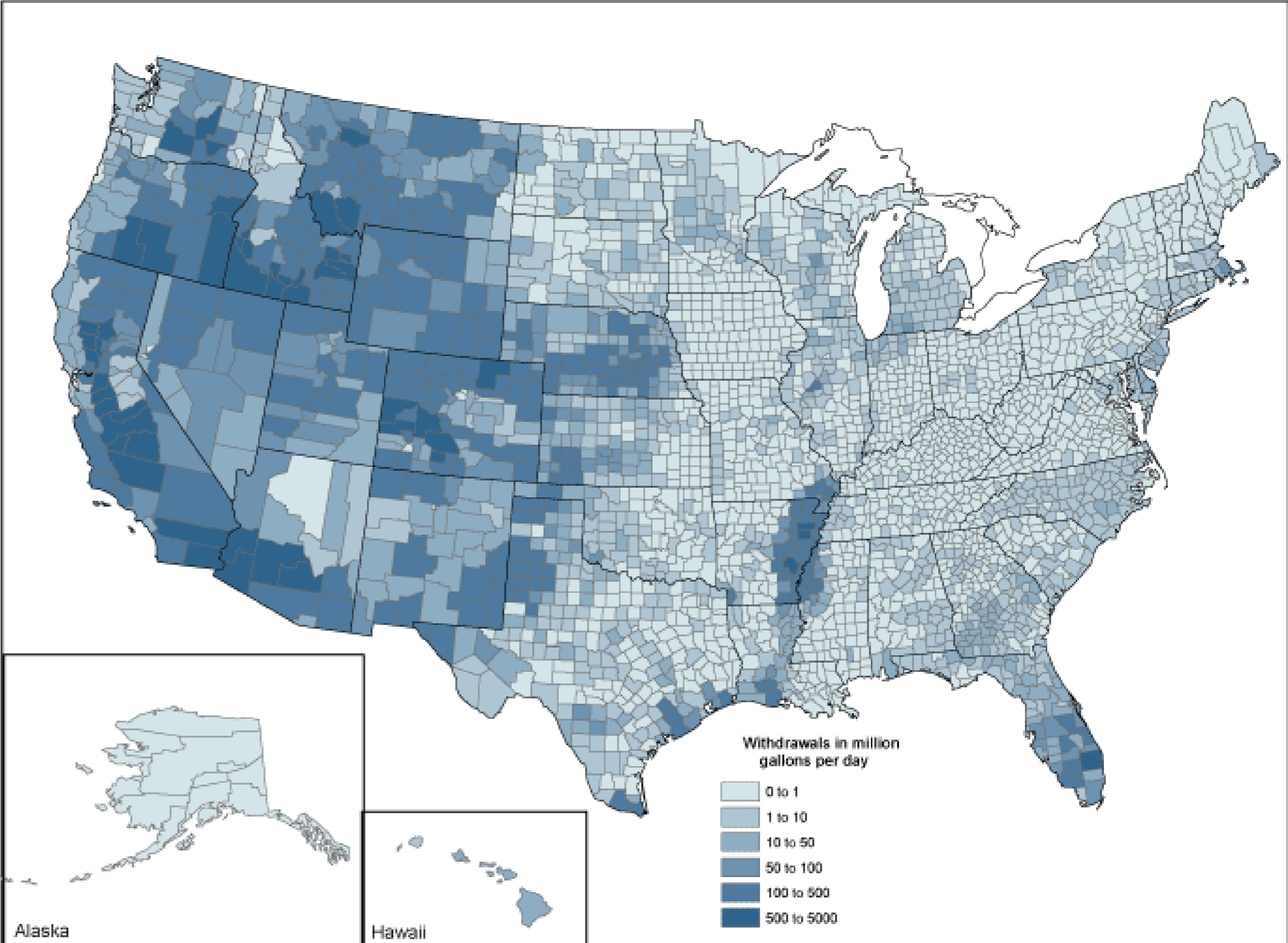
Nancy L. Barber  
WSWC Water Information Management Systems Workshop  
September 18, 2019

# Topics

- USGS water use and water-use data system
- National Water Information System Modernization effort
- Status and plans for Water Use Data System modernization
- WaDE Collaboration

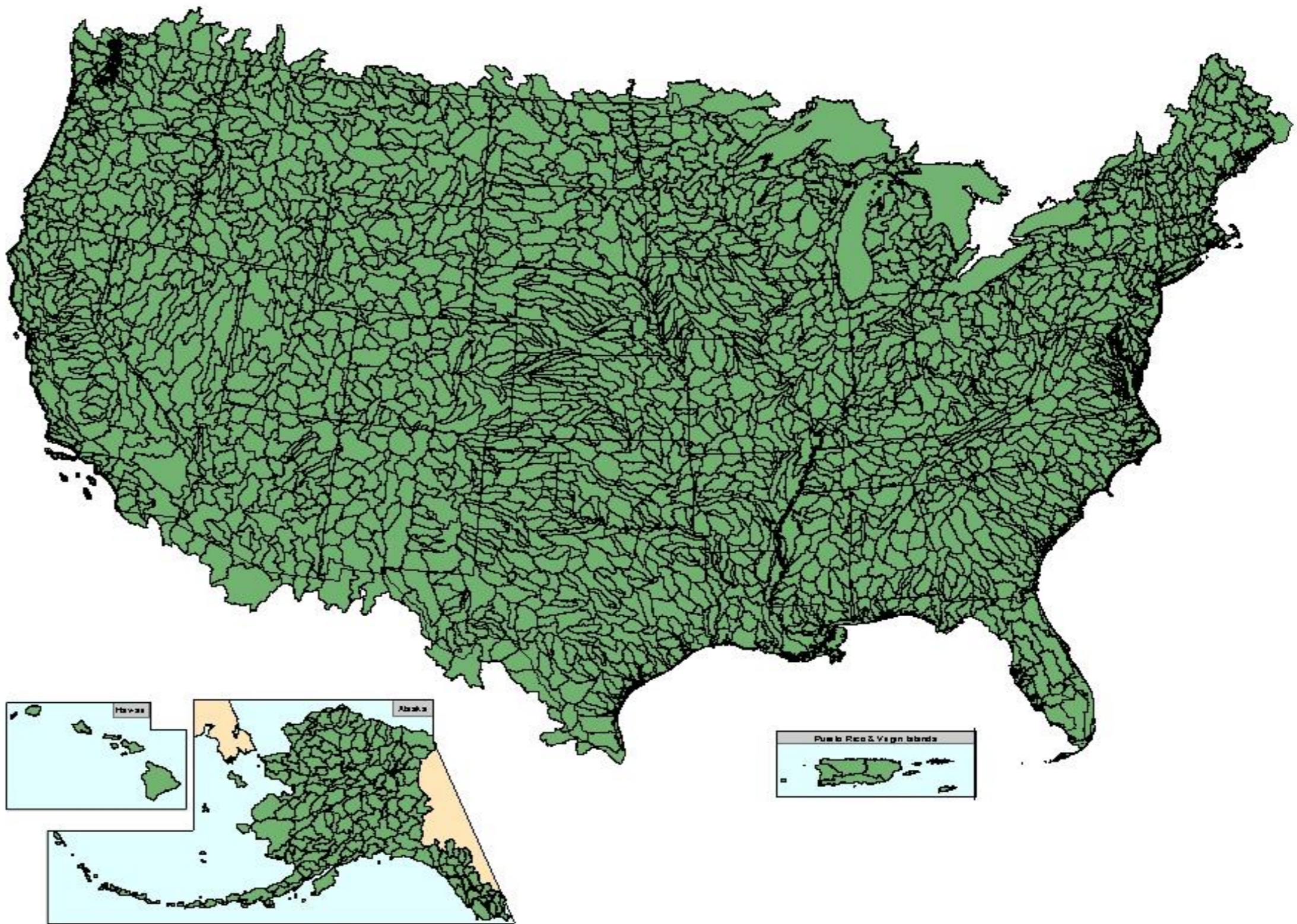
# Estimated Use of Water in the United States





HUC-8  
(Subbasins/accounting  
units)

Estimated nationally for  
1985, 1990, 1995



**ESTIMATED USE OF WATER IN THE UNITED STATES**  
2015 Data Collection Form

	Mandatory
	Mandatory but null values allowed
	Non-mandatory

**Data**

Instream water  
Withdrawals - (

Withdrawals - (

Withdrawals - (

Withdrawals - (

Population sen

Population sr

Population sr

Deliveries from

Consumptive u

Consumptive u

Conveyance lo

Power generat

Acres irrigated

Acres irrigated

Acres irrigated

Facilities (num)

Wastewater rel

Reclaimed was

**Data Element**

**Category**

**Public Supply      Domestic      Commercial      Industrial**

**Instream water use**

**Withdrawals - GW - fresh**

**Withdrawals - GW - saline**

**Withdrawals - SW - fresh**

**Withdrawals - SW - saline**

**Population served - Total (000s)**

**Population served - GW (000s)**

**Population served - SW (000s)**


1 If the option to report Irrigation as crop and golf-course subtotals is chosen, all data elements become mandatory. Total irrigation will be calculated by AWUDS from the subtotals.

# Site-Specific Water Use



# Site-Specific Data Model – Public Supply

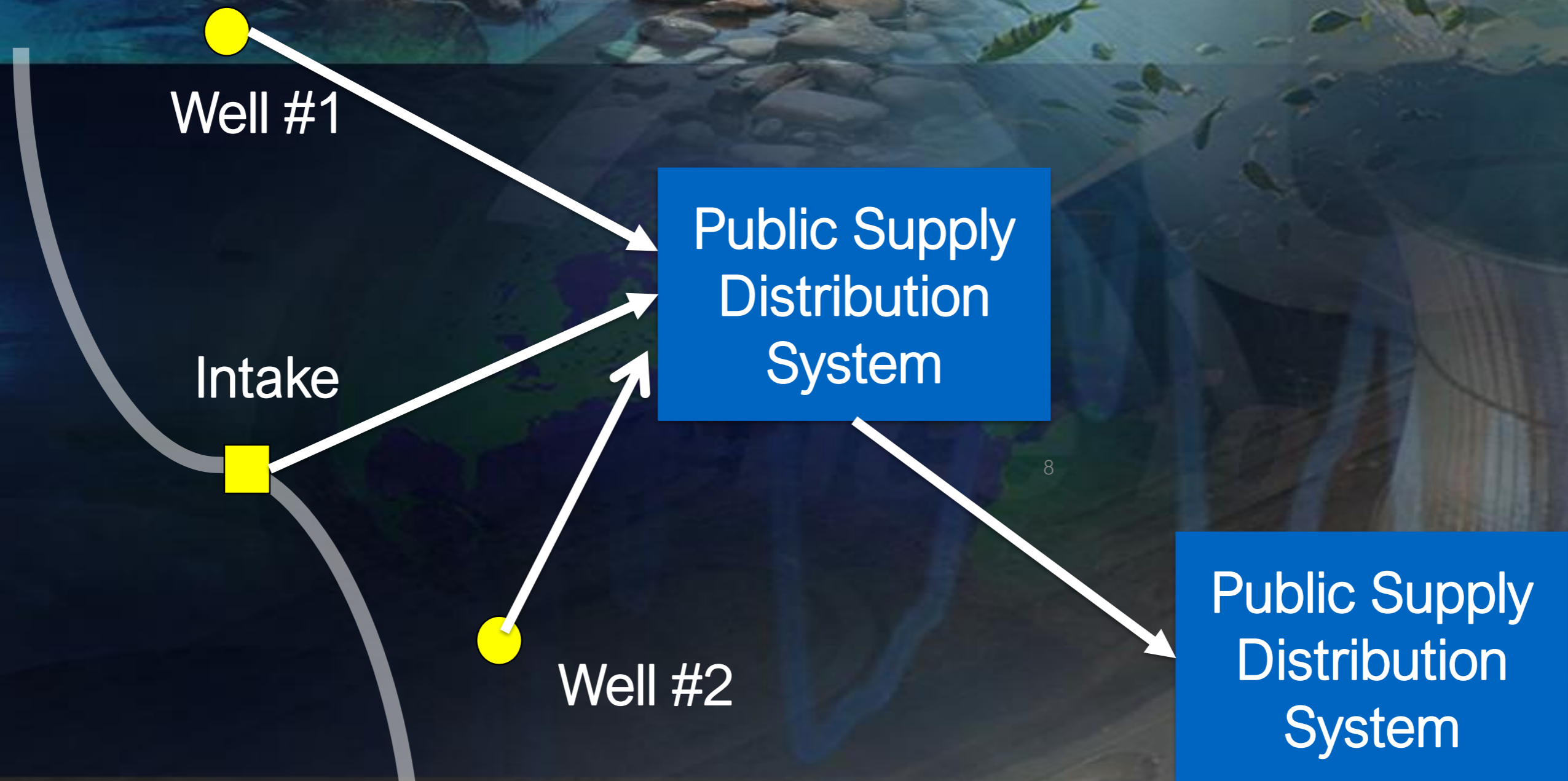
Well #1

Intake

Well #2

Public Supply  
Distribution  
System

Public Supply  
Distribution  
System





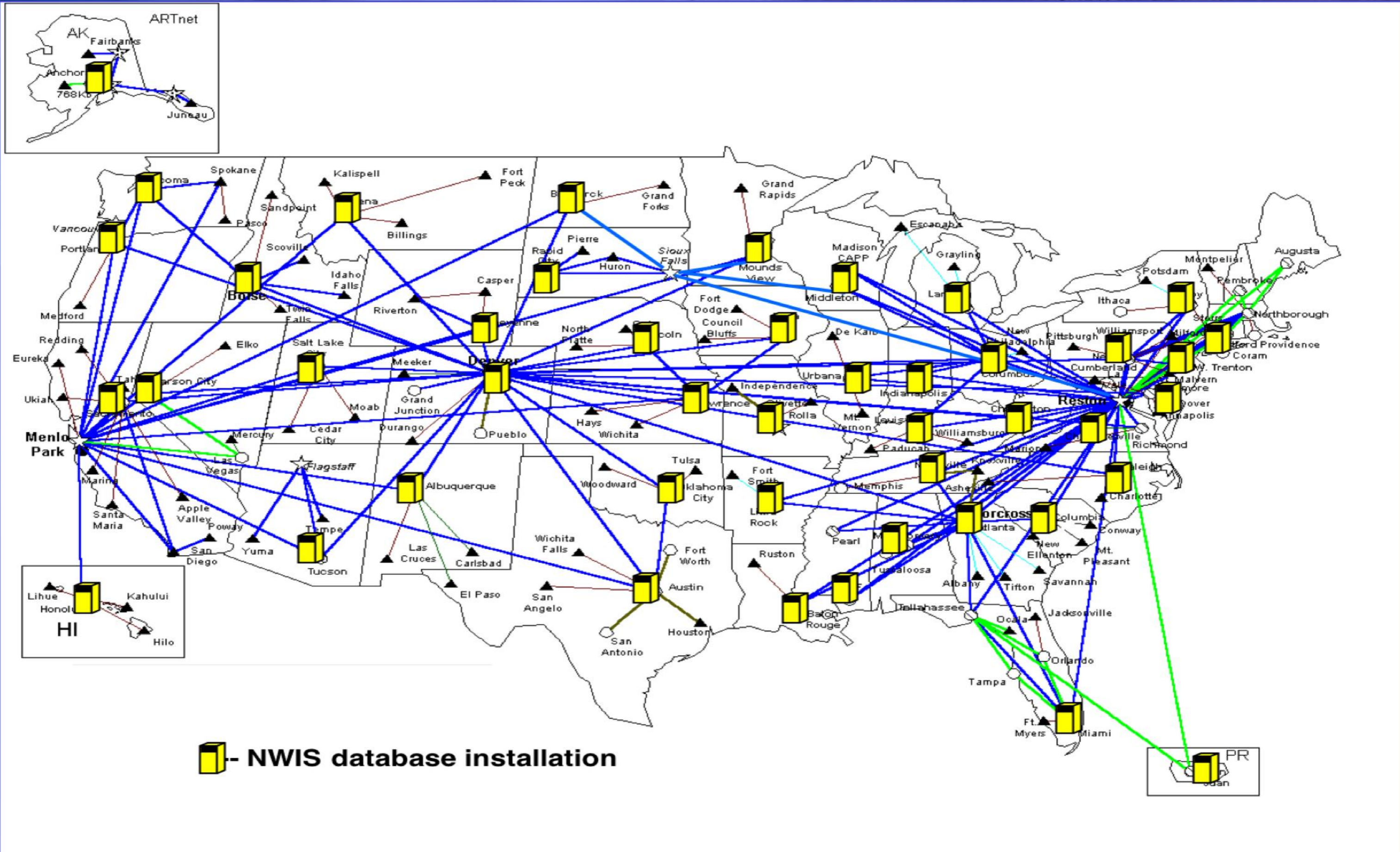
# Source to Place of Use to Disposition



# National Water Information System

## NWISWeb – Water Data for the Nation

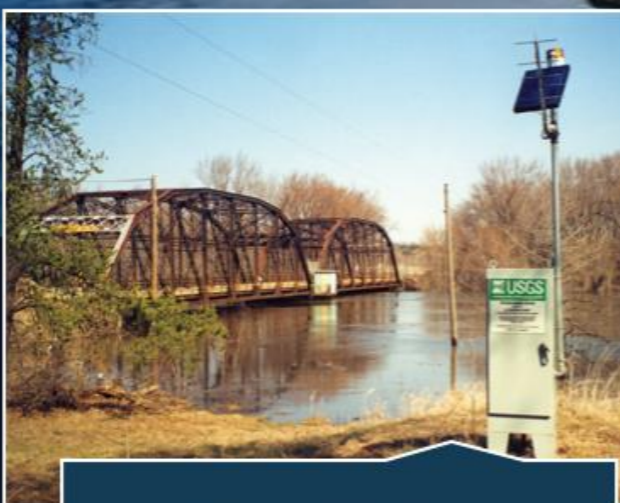




# NWIS Modernization Projects



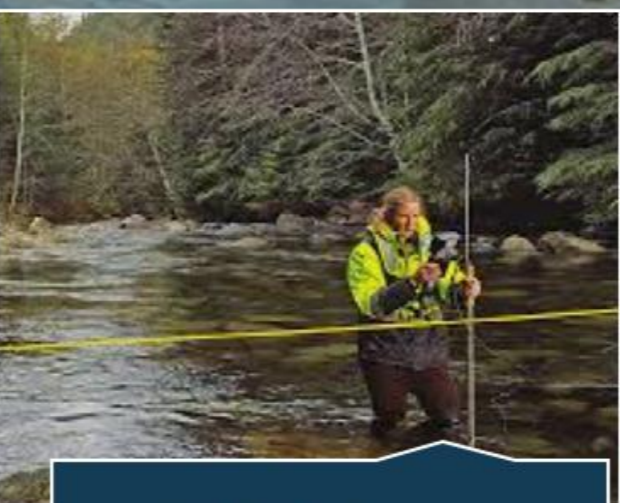
Telemetry Ingest



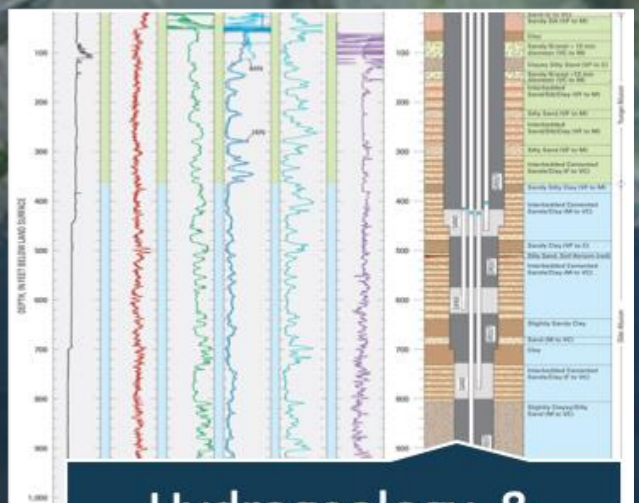
Time-Series



Samples



Field Software



Hydrogeology & Groundwater Wells



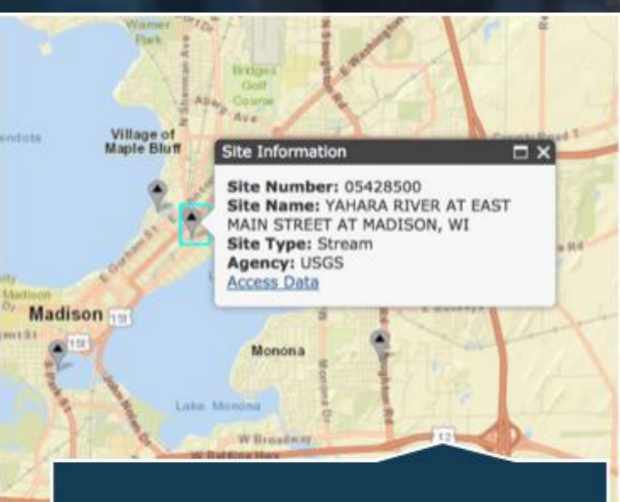
Water Use



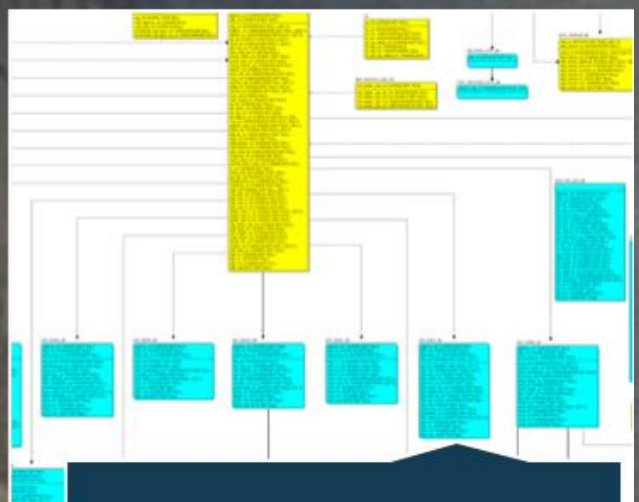
Imagery & Remote Sensing



Delivery



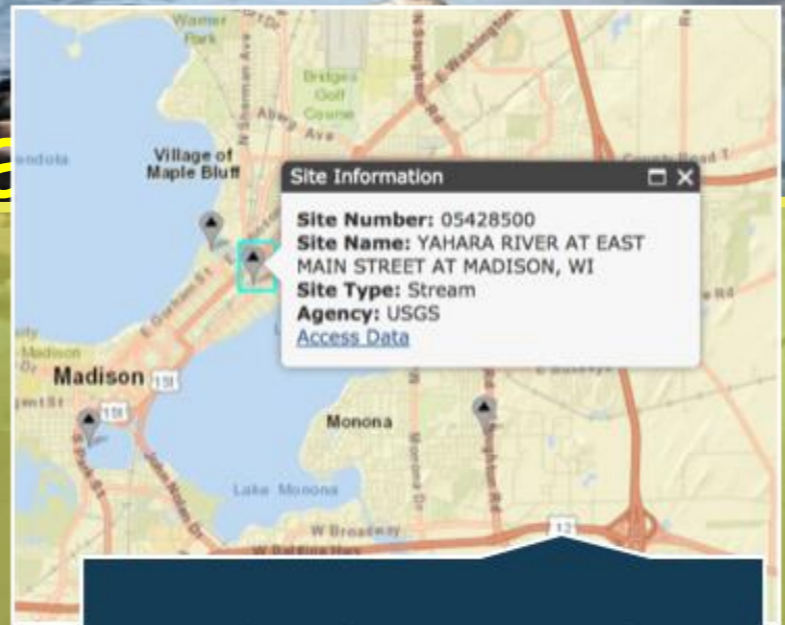
Monitoring Locations



Reference Lists

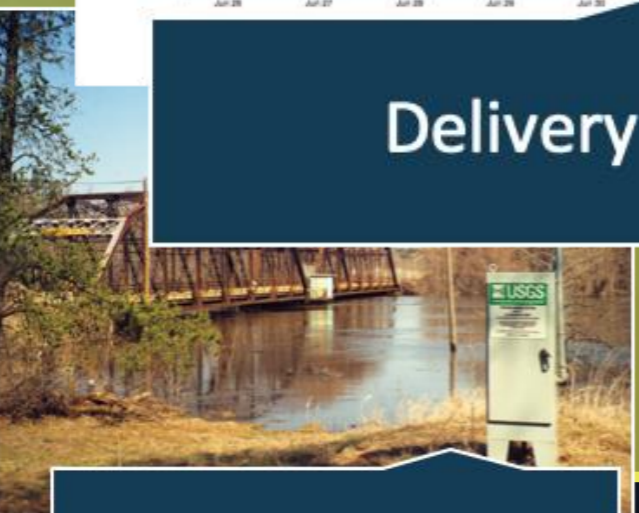
# National Water Information System

## NWISWeb – Water Data

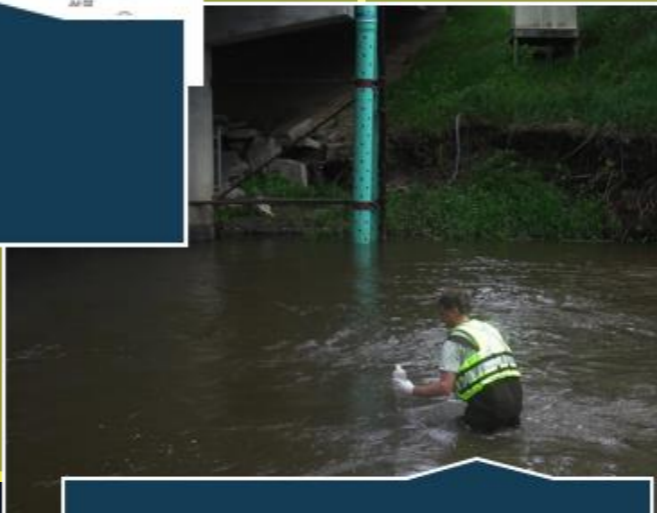


Aggregate Water Use

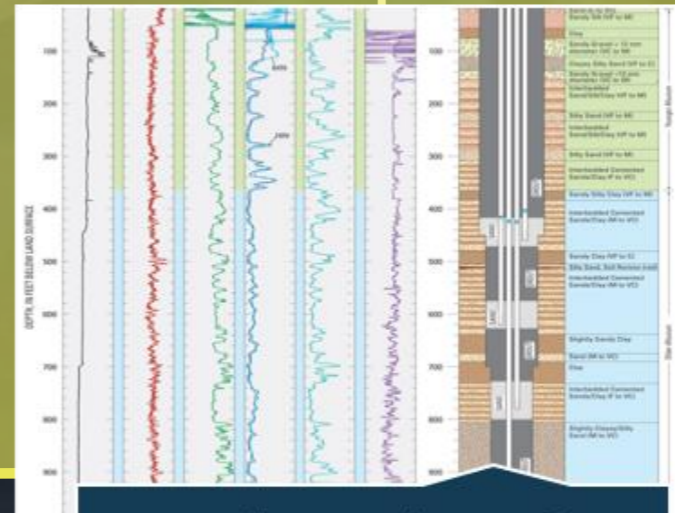
Monitoring Locations



Delivery



Samples



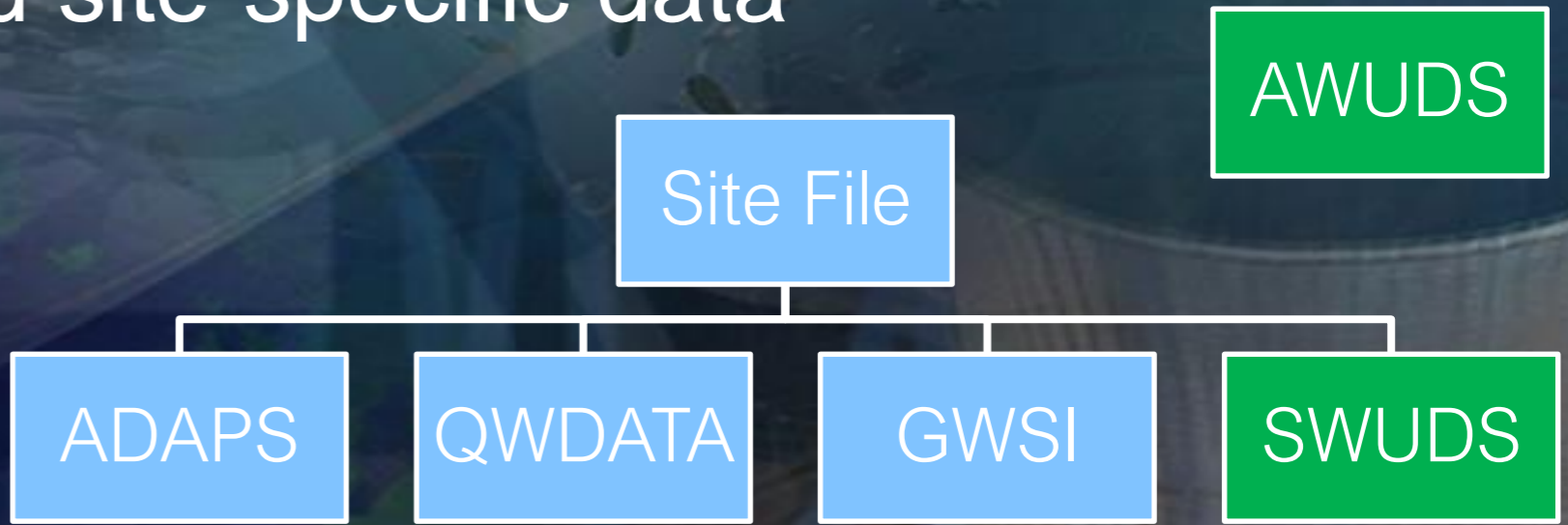
Hydrogeology & Groundwater Wells

Site-Specific Water Use

Time-Series

# Water Use Modernization

- Single Water Use Data System (WUDS)
  - Aggregate “snapshot” data and site-specific data
  - Single user interface
  - Uniform workflows
  - Single codebase



# WUDS Timeline

- NWIS Program currently developing overall plan
  - Constraints of budget and personnel
- WUDS initial planning is underway
- Developed in-house, no commercial options
- Development expected to begin in early Fiscal Year 20

# WUDS Functionality

- Majority of current data and functionality will be included
  - Determine if needed for current and planned water-use directions
- Requirements from modeling teams for input and calibration data
- Better storage of information on data quality for uncertainty analysis



# WUDS Enhancements

- Geography: store or link to polygons for water-use areas
- Capability to ingest data from data services
- Retrievals driven by data services
  - Water Data for the Nation as appropriate
  - water use modeling efforts
  - other USGS projects

# WUDS and WaDE

- Worked with Sara Larsen and Adel Abdallah on WaDE 2.0
  - walk-through linking SWUDS and AWUDS data to the schema
- USGS-specific data schema?
  - determined early in development
- Likely to either support WaDE 2.0 directly for ingestion, or build on it
- Will continue to coordinate with WSWC as WUDS develops



# Questions?

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