



National Ground-Water Monitoring Network

Advisory Committee on Water Information—Subcommittee on Ground Water

National Groundwater Monitoring Network Portal

<https://cida.usgs.gov/ngwmn/>



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ACWI
Advisory Committee
on Water Information



Presentation Outline

- Introduction
- Background/Purpose/Goals
- Existing Data Providers
- Hosting
- Traffic and Use
- Data Standards
- Data Storage and Retrieval Performance



Subcommittee on Groundwater (SOGW) within ACWI

- Co-Chairs – Federal & Non-Federal
- SOGW Members:
 - ACWI Representatives & Alternates
 - Interested Individuals
 - “Listeners”



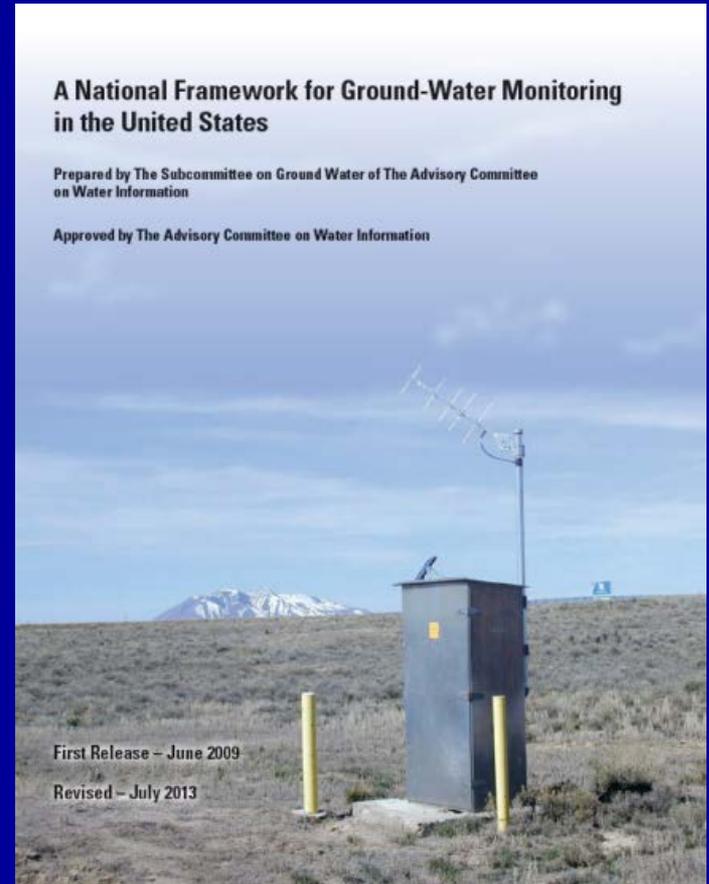
Purpose & Scope (Authorized in SECURE Water Act)

- Long-term ground-water quantity and quality monitoring framework for...
 - Planning, management, and development of GW supplies
 - To meet ...water needs, and ecosystem requirements.
- Monitoring and collaboration to assist in....
 - Assessing quantity of U.S. GW reserves
 - **As constrained by GW quality.**



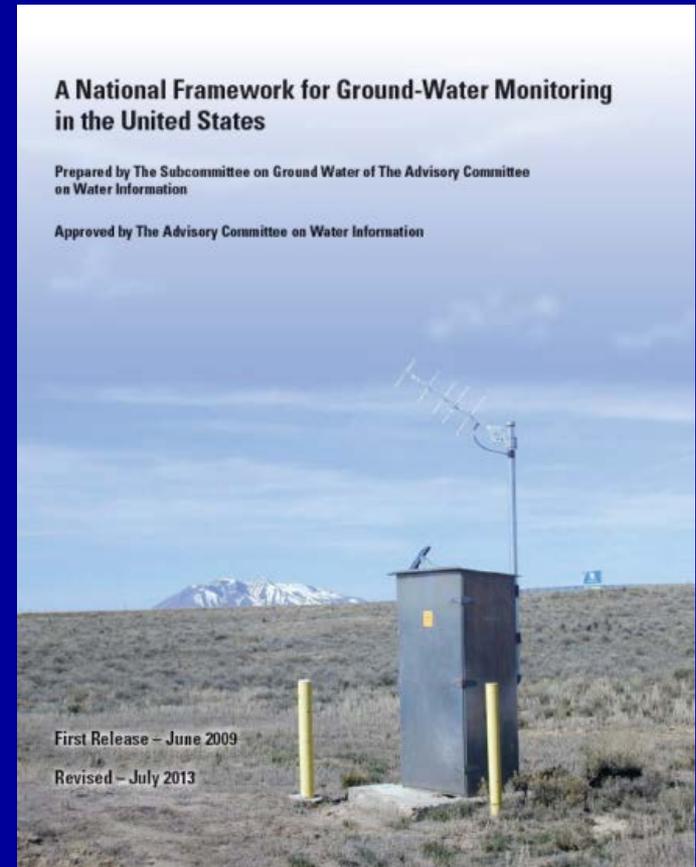
Definition of “Network”

- Selected, Key:
 - Monitoring Points
 - Parameters
- Purposes in Design →
- NOT a “Repository”
- Can Access Repositories:
 - Federal: NWIS, STORET
 - States’ and Other Entities’



Key NGWMN Design Criteria

- **Network**
 - Not a repository
- **Flexibility**
 - With basic requirements
- **Inclusivity**
 - Fostering partnerships
- **Ownership**
 - By data providers
 - Not by federal agencies



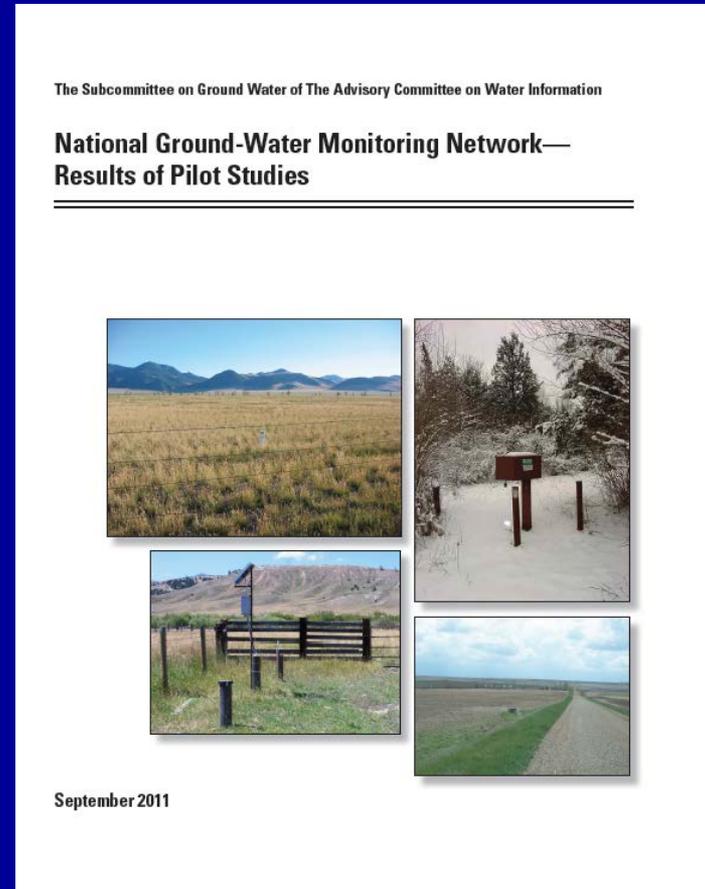
Why Do We Need the Network?

- Trend-Tracking
- Impacts-Identification
- Analysis & Assessment
- Planning & Management
- “Patchwork Quilt” →
 - Data Provider Differences
 - Interstate Contrasts
- Fill Data Gaps

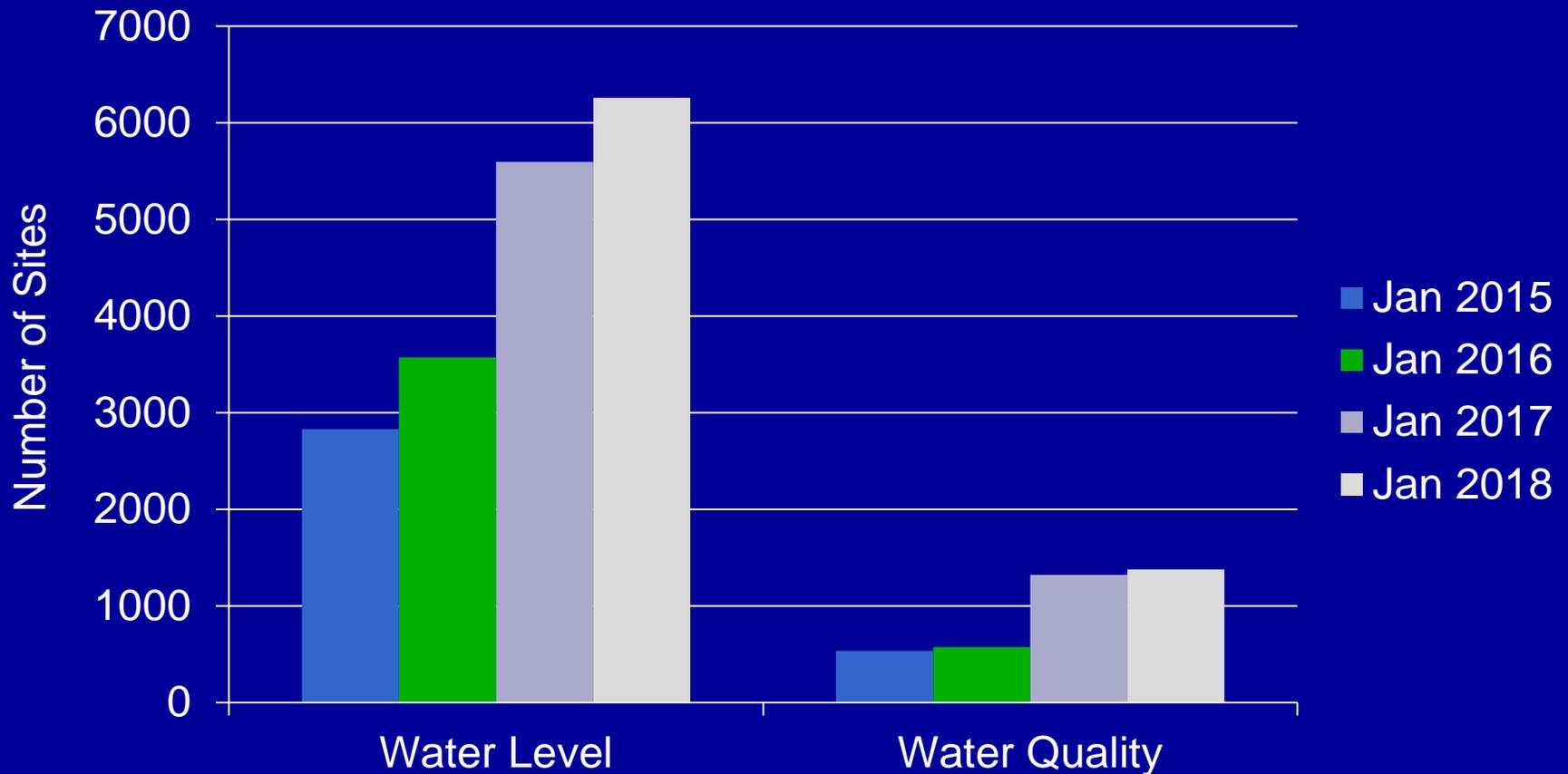


Approach

- Framework Design
- Pilot Testing →
- Web Portal
- Operations
 - By USGS
- Oversight
 - Program Board
 - ACWI-SOGW



Network growth



Data Portal

The screenshot displays the ACWI National Ground-Water Monitoring Network Data Portal. The interface is divided into a left sidebar and a main map area.

ACWI Advisory Committee on Water Information

National Ground-Water Monitoring Network

NGWMN NETWORKS

- Water level:** ?
 - Subnetwork: All, Background, Suspected Changes, Documented Changes
- Monitoring Category:** ?
 - All, Surveillance, Trend, Special
- Water quality:** ?
 - Subnetwork: All, Background, Suspected Changes, Documented Changes

>> FILTER MAP DATA [Save] [Filter]

CURRENT STATUS

- 7190 Sites mapped
- 7190 Sites matching filter
- 6259 Water-level network wells
- 1378 Water-quality network wells

The main map area shows a map of North America with numerous blue dots representing monitoring sites. The map includes labels for the UNITED STATES, CANADA, and MÉXICO, as well as geographical features like the Bering Sea, Gulf of Alaska, Hudson Bay, Davis Strait, and Caribbean Sea. A scale bar indicates 1000 km and 1000 mi. The map's coordinates are -102.080078, 28.920289. A 'SITES' button is visible on the right side of the map.

Access Data in 3 Ways

1. Data Portal

<https://cida.usgs.gov/ngwmn/>

2. Web Service

<https://cida.usgs.gov/ngwmn/web-services.jsp>

3. R Client



<https://github.com/USGS-R/dataRetrieval>

Data Provider Pages

National Ground-Water Monitoring Network

The National Ground-Water Monitoring Network (NGWMN) is a compilation of selected wells monitoring groundwater aquifers all around the nation. The NGWMN Data Portal brings groundwater data together in one place to provide users with current and reliable information for the planning, management, and development of groundwater resources.

ABOUT THE NETWORK | THE DATA PORTAL | DATA PROVIDERS | GET INVOLVED

Data Providers

Current Data Providers | Resources for New Data Providers | Pending Data Providers

Current Data Providers

The National Ground-Water Monitoring Network (NGWMN) is a compilation of selected groundwater monitoring wells from Federal, State, and local groundwater monitoring networks across the nation. The following agencies are currently contributing to the NGWMN.



National Aquifer Name	UNCLASSIFIED
Aquifer Type	CONFINED
Water Level Network	Special -
Water Quality Network	-
Additional Info	link

SELECT FOR DOWNLOAD

National Ground-Water Monitoring Network Alaska Department of Natural Resources (AKDNR) Data Provider Information



Link to: [Alaska Department of Natural Resources Groundwater Information](#)

NGWMN Contact:

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(907) 369-8646
melissa.hill@alaska.gov

Description of agency network. The AKDNR is currently working on a project to become a new NGWMN data provider.

Wells in the Alaska unconsolidated-deposit aquifers Principal aquifer are currently monitored.

NGWMN progress reports:

None

Current NGWMN Projects

2016 Round 1: June 2016 to June 2018

Project is to become a data provider to the NGWMN in year 1 and to provide persistent data services in year 2. A network of 23 trend water-level sites and 10 water-quality sites are proposed.

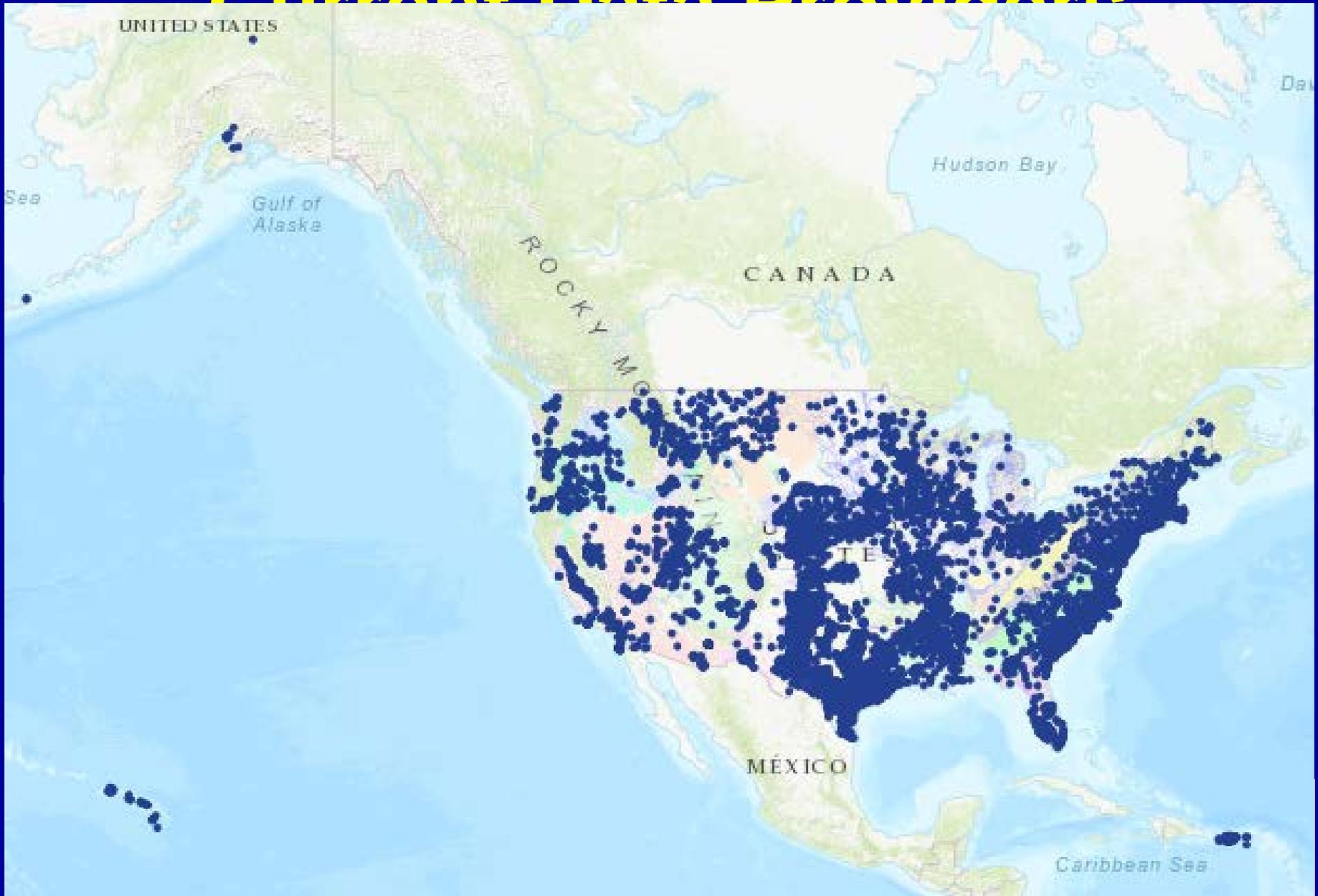
2016 Round 2: October 2017 to October 2017

Project is to perform well maintenance at an existing NGWMN well and to drill a replacement for a NGWMN monitoring well.

NGWMN presentations

[December 2016 presentation to SOGW](#)

Current Data Providers



Hosting

- **USGS currently hosts the NGWMN Portal in the IIDD branch**
- **Hosting is supported by “Water Shared Infrastructure” which is located in the EROS Data Center**
- **Hosting is operated by ETO**



Traffic and Use

- There has not been much effort on outreach to increase traffic as of yet



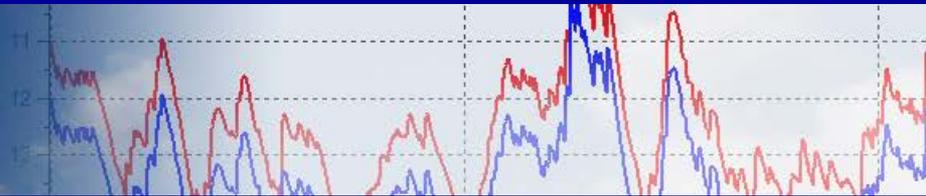
- Most users directed from Google, water.usgs.gov, and direct calls

Data Standards

- We require key fields from every data provider, as outlined in our documentation.
- Utilize open standards

WaterML2

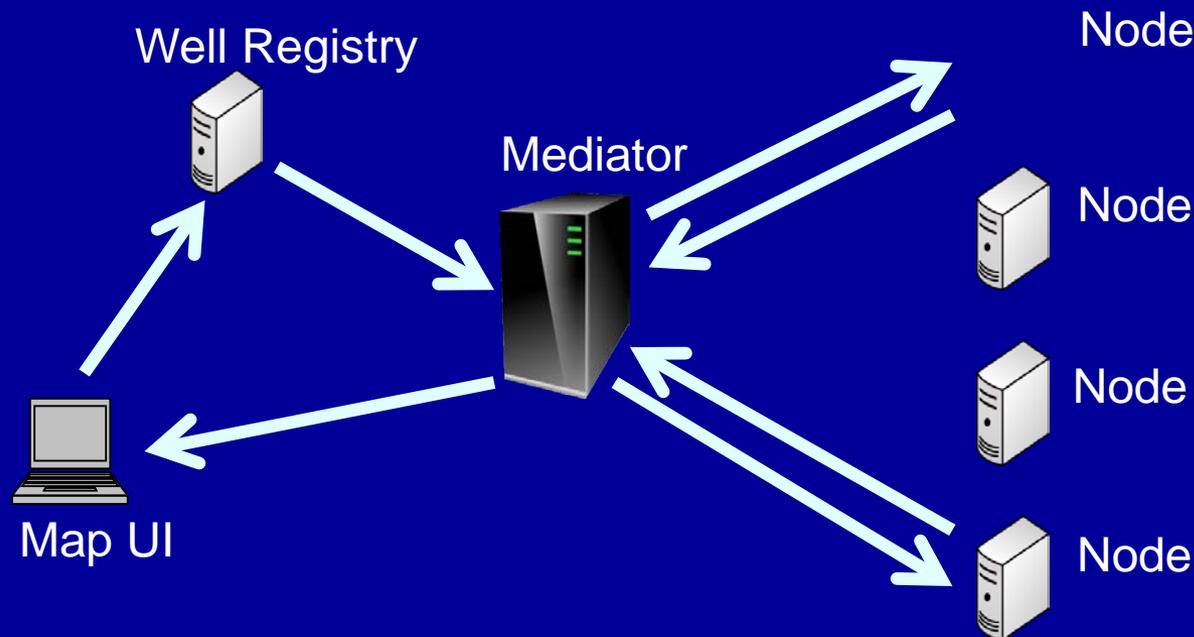
A Global Standard for Hydrological Time Series



- Have a compliant WaterML2.0 Sensor Observation Service that is use to share data externally

Data Storage and Retrieval

- Agencies host their data on their own databases, and we call to their databases



Thank you!

Questions?

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