



National Ground-Water Monitoring Network

Advisory Committee on Water Information—Subcommittee on Ground Water

National Ground-Water Monitoring Network Cooperative funding opportunity to support data providers

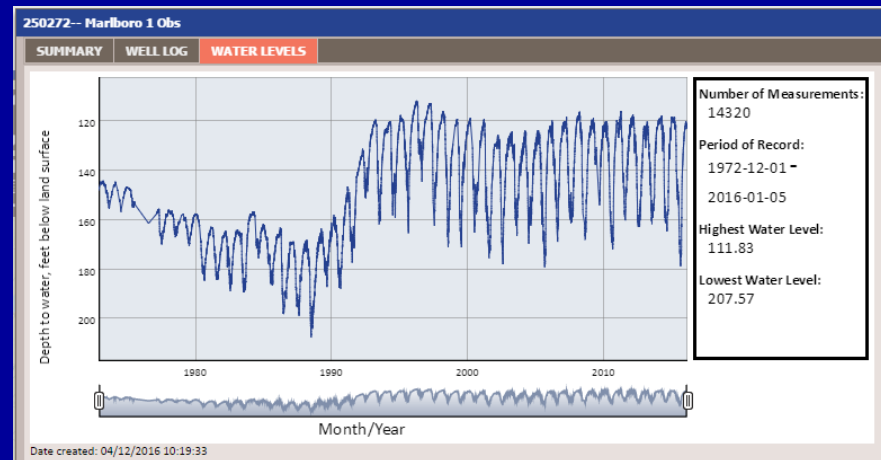
2018 NGWMN Funding

Daryll Pope, USGS

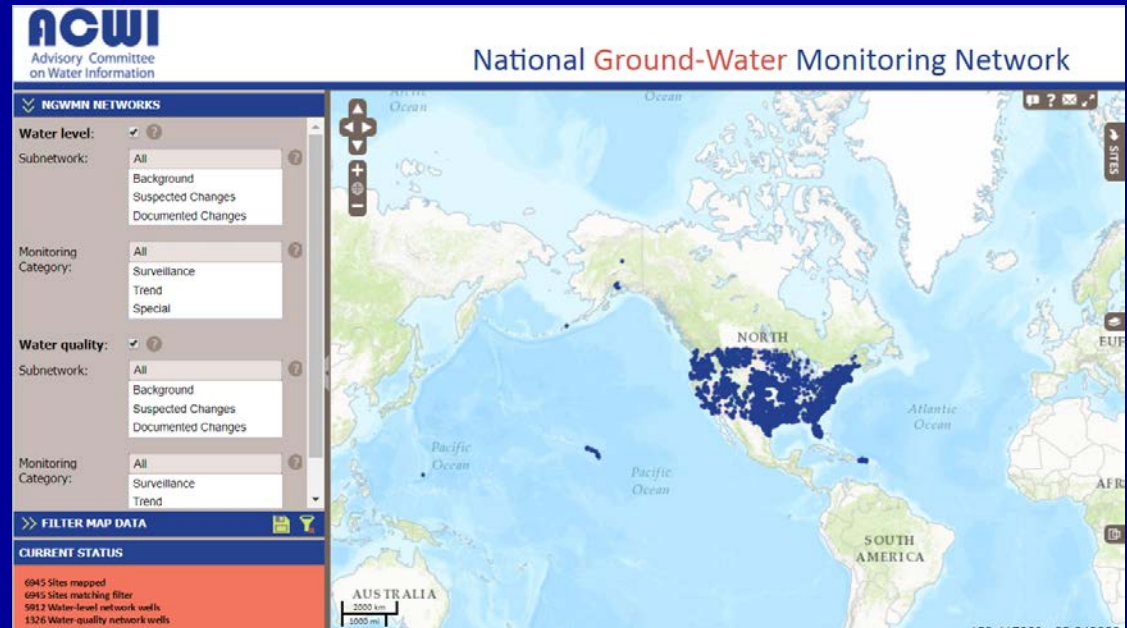


Outline

- Background on NGWMN
- Cooperative agreements
- Guidance on application package
- Support resources
- Questions



Background on NGWMN

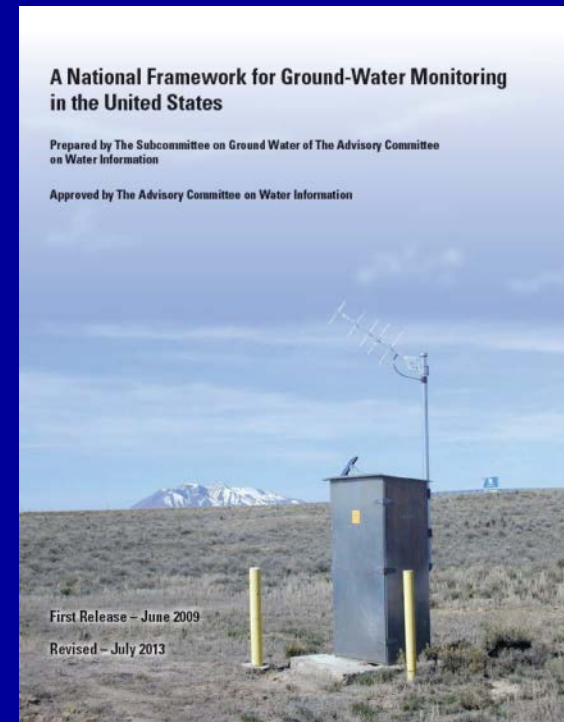


Subcommittee on Ground Water and the NGWMN

- The Subcommittee on Ground Water (SOGW) is part of the Advisory Committee on Water Information (ACWI)
- The purpose of the Subcommittee is to develop a National Ground-Water Monitoring Network (“NGWMN”)
- The Subcommittee developed the ‘Framework Document’ which contains the network design and requirements
- Approach was tested in 5 pilots and the ‘Framework Document’ was revised based on findings

Framework Document

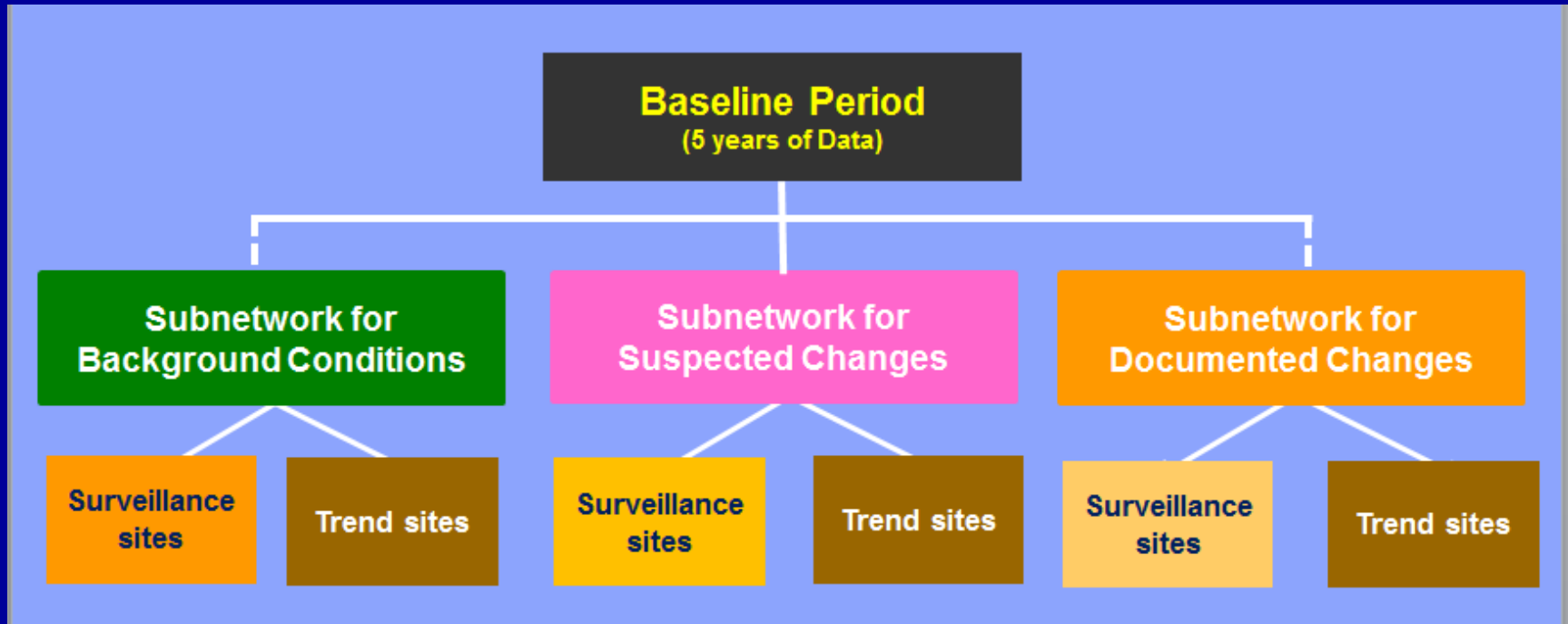
- Design for a collaborative National GW Monitoring Network
- Worked with NGWA, AASG, and GWPC to inventory Federal and State monitoring programs
- Guidance for Field Methods
- Guidance for Minimum Data Elements, Standards, & Management
- Implementation Plan and Recommendations
- Initial version in 2009. Revised in 2013 after pilot phase completed



NGWMN Design Elements

- Principal and major aquifers
- GW levels and quality, focus on availability
- Priority on sites with long-term data
- Network, not a Warehouse or Master Database
- Willing data providers: State, Federal, Tribes, others
- Sites classified by local experts/data providers, and selected sites become part of the Network
- Data available to all without restriction or cost
- Data provider is the authoritative data source

Network Design: Subnetworks



“Classified” based on water level or water quality change and on frequency of data collection

NGWMN Data Portal

National Ground-Water Monitoring Network

The **National Ground-Water Monitoring Network (NGWMN)** is a product of the **Subcommittee on Ground Water** of the Federal Advisory Committee on Water Information ([ACWI](#)). The NGWMN is a compilation of selected groundwater monitoring wells from Federal, State, and local groundwater monitoring networks across the nation.

The **NGWMN Data Portal** provides access to groundwater data from multiple, dispersed databases in a web-based mapping application. The portal contains current and historical data including water levels, water quality, lithology, and well construction. The NGWMN is currently in the process of adding new data providers to the Network. Agencies or organizations collecting groundwater data can find out more about becoming a data provider for the Network [here](#).

Funding to support data providers to the National Ground-Water Monitoring Network is provided through **USGS Cooperative Agreements**. Information about any the latest status of the USGS cooperative agreements is available [here](#).

CURRENT NETWORK:

3967 water-level wells

688 water-quality wells

10 subnetworks

8 contributing agencies

48 states

55 principal aquifers

LEARN about the Network



EXPLORE the Network



NGWMN NETWORKS

Water level: ?

Subnetwork: ?
Background
Suspected Changes
Documented Changes

Monitoring Category: ?
Surveillance
Trend
Special

Water quality: ?

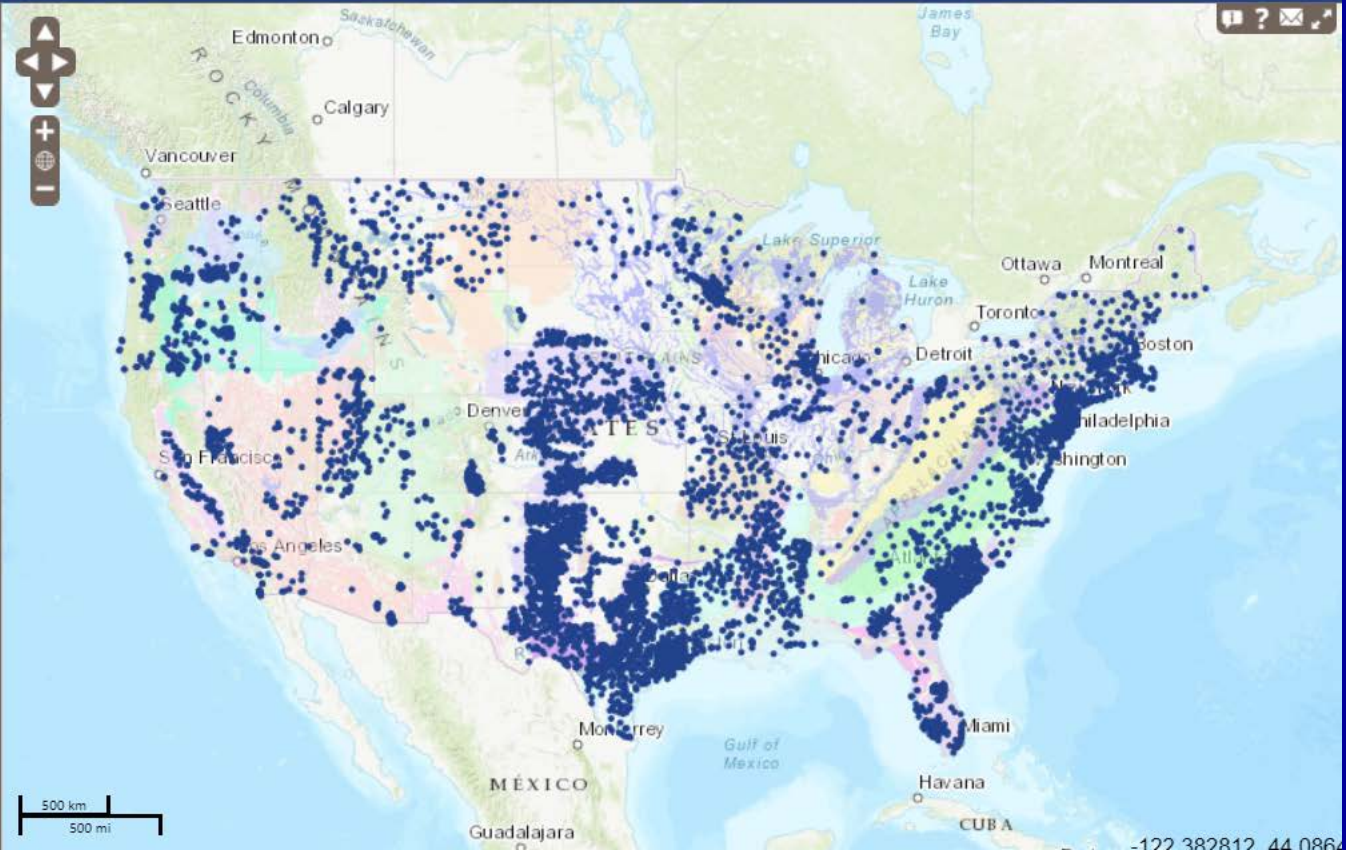
Subnetwork: ?
Background
Suspected Changes
Documented Changes

Monitoring Category: ?
Surveillance

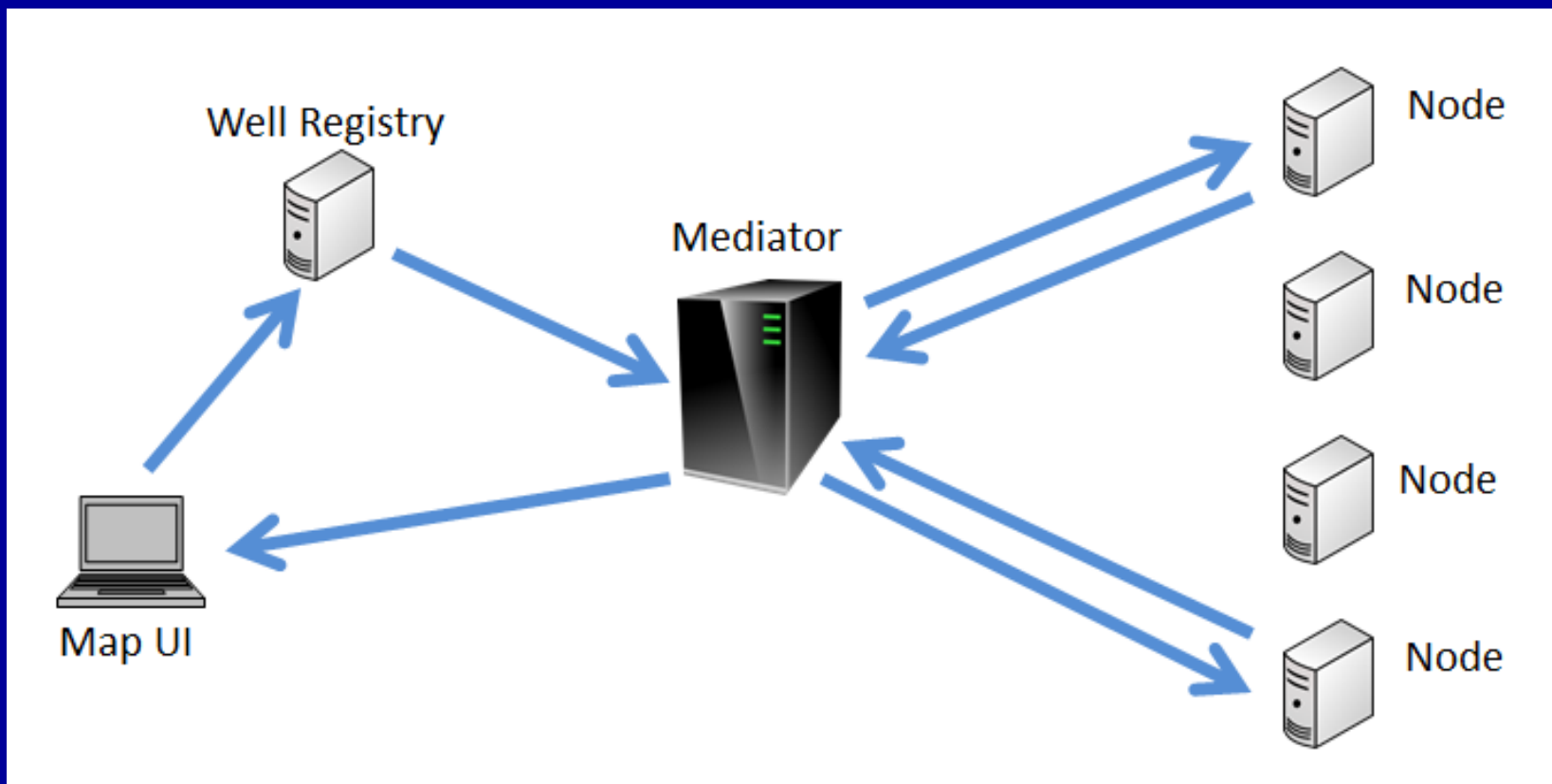
FILTER MAP DATA

CURRENT STATUS

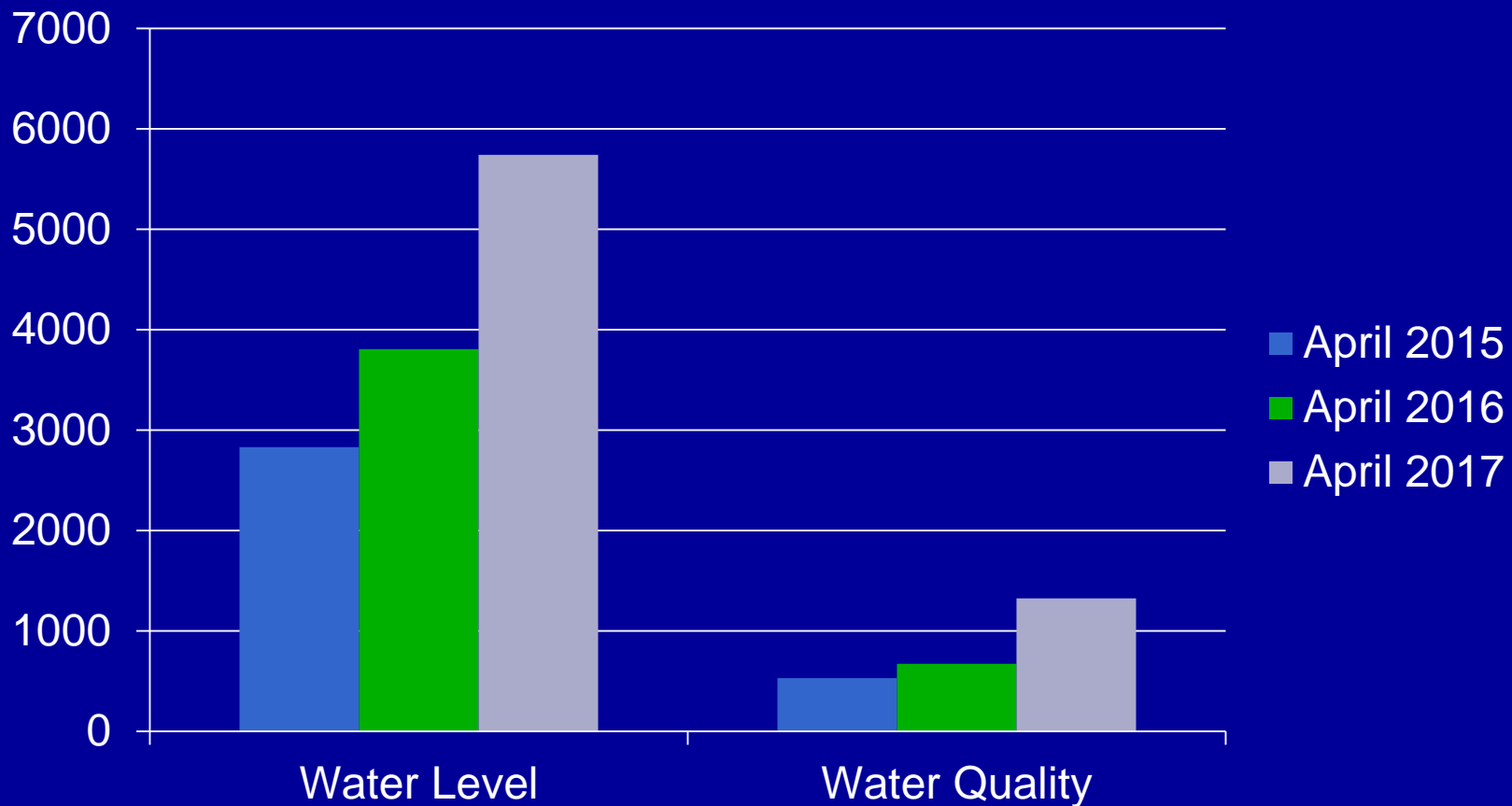
6905 Sites mapped
6998 Sites matching filter
5892 Water-level network wells
1300 Water-quality network wells



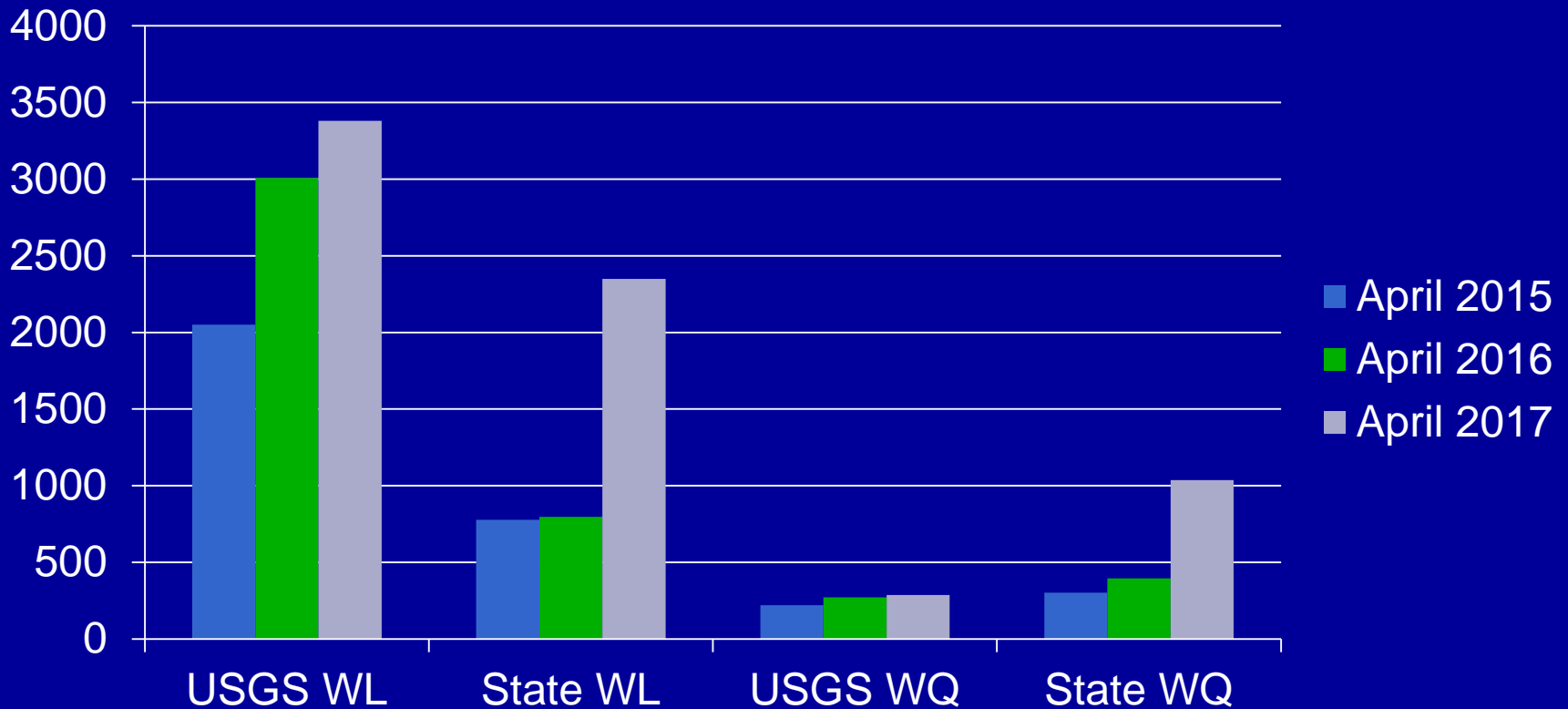
Network Portal Data Model



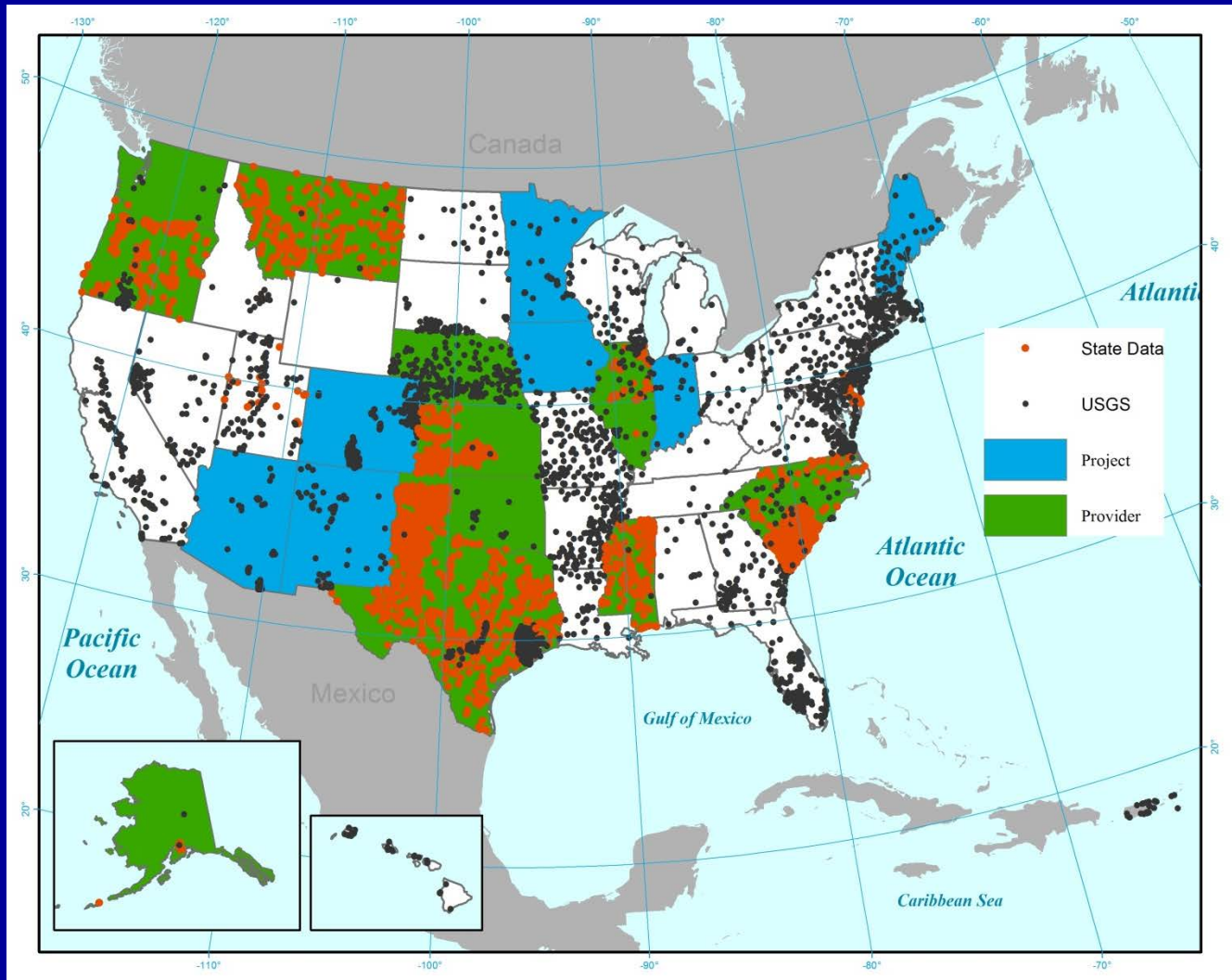
Network growth



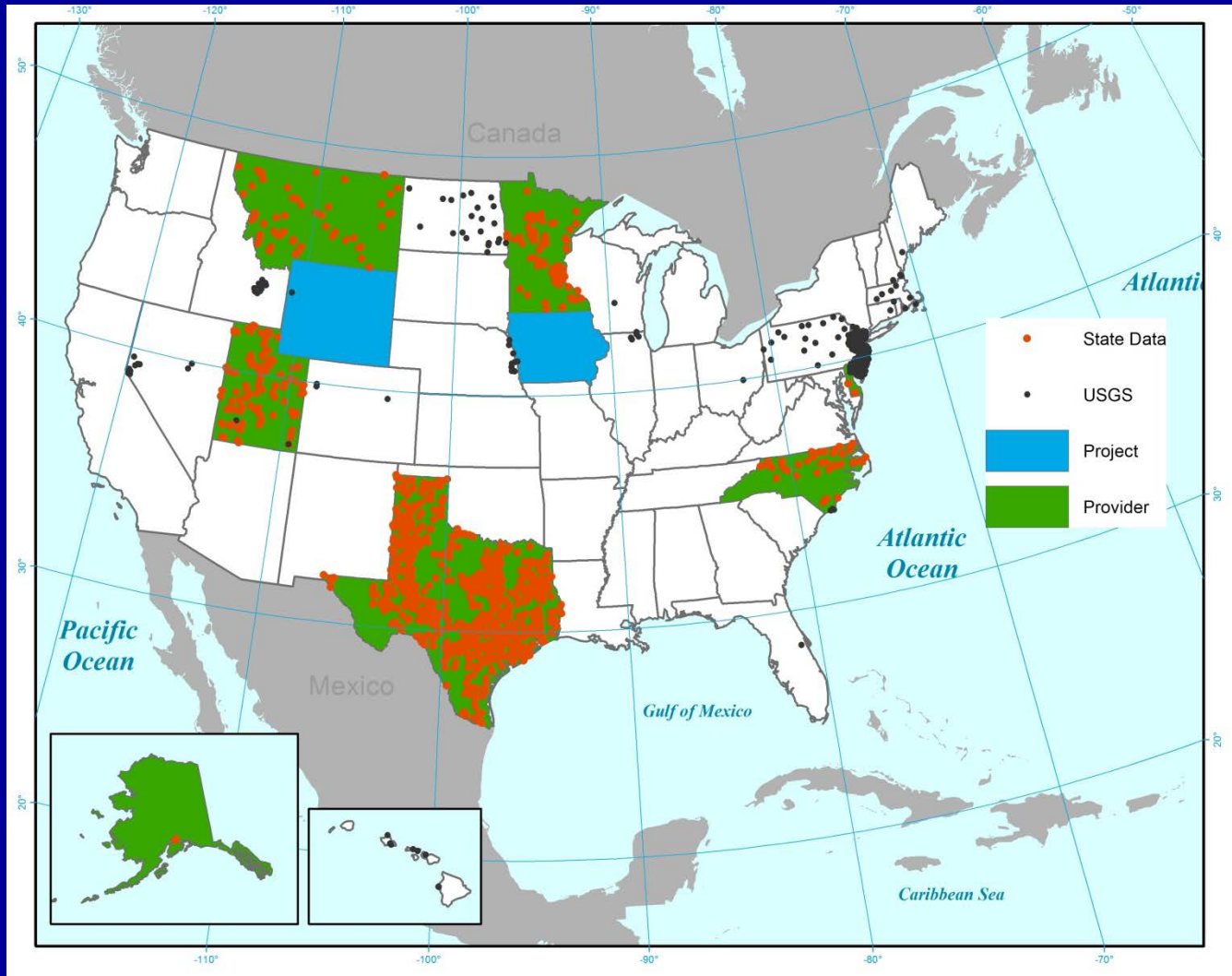
Growth details and expected growth



Water-level data providers and current projects



Water-quality data providers and current projects



Data Providers

- Data providers are the key to the success of the NGWMN
- Benefits of participating as a data provider
 - Consistent data for shared interstate GW resources
 - Identification of ‘gaps’
 - Opportunity for review of field and data management procedures
 - “Community of Practice”
 - Data Portal provides tools to access data
 - Portal links back to Agencies website
 - Funding available to improve networks
 - Participation in National Network gives your network visibility
 - Participation may provide additional justification for monitoring
- Agencies participating with the USGS to do groundwater monitoring using Cooperative Matching funds are considered data providers and are eligible to apply for objectives 3-5

Authorization and Funding

- **P.L. 111-11 SECURE Water Act 2009**

Required USGS to work with ACWI and State/Local water agencies to:

- (i) Assess the current scope of GW monitoring
- (ii) Develop and carry out a Monitoring Plan for major aquifers
- (iii) Consult and coordinate with the local water resource agencies

- **Funded through Congressional Appropriations**

- Initial Appropriation in Fiscal Year 2015
- Had increase in NGWMN Appropriation in Fiscal Year 2016 and 2017
- Funding for this Program Announcement is dependent on FY 2018 Appropriation

Cooperative funding agreements to support NGWMN data providers (CFDA 15.980)

- Funding opportunity available to State or Local groundwater resource agencies
 - Federal agencies, Tribes, institutions, and companies may contribute data, but are not eligible for funding
- Funded 6 new data provider projects in 2017. Provided ongoing support to 13 agencies.
- Summaries of funded projects are on NGWMN Cooperative agreements web page
 - https://cida.usgs.gov/ngwmn/doc/NGWMN_FY16_ProjectSummary.pdf
 - https://cida.usgs.gov/ngwmn/doc/NGWMN_FY17_ProjectSummary.pdf


Funding Opportunity for 2018

- Application period is open from September 1st through November 30th, 2017
- Five objectives are supported
 1. Support to become a new data provider
 2. Support persistent data service from existing data providers
 3. Filling gaps in information at NGWMN sites
 4. Well Maintenance
 5. Well Drilling
- The last three objectives are available to current data providers or to agencies which plan to complete the new data provider objective in the first year of their project
- Only one funding opportunity is planned this year

Changes in Program Announcement

- Allowable funding increased to \$150,000 per year for each agency
- Funding for Objective 2 increased to \$30,000 per year
- Provided more guidance on requested budget. Provided example budget in preferred format
- Separated work supported and application guidelines for each objective
- Clarified what needs to be provided in the proposal for each objective
- Provided more details on what is required for web services
- Updated section on Data-Management Plan (DMP)
- Revised evaluation criteria
- Example timeline provided

Guidance on Application Package




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G17AS00070
2018 National Ground-Water Monitoring Network
Department of the Interior
Geological Survey

« Back | Link

SYNOPSIS | VERSION HISTORY | RELATED DOCUMENTS | PACKAGE

Print Synopsis Details ?

If you would like to receive email notifications of changes to this grant opportunity click [send me change notification emails](#). You only need to provide your email address.

General Information

Document Type: Grants Notice	Version: Synopsis 3
Funding Opportunity Number: G17AS00070	Posted Date: Aug 31, 2017
Funding Opportunity Title: 2018 National Ground-Water Monitoring Network	Last Updated Date: Aug 31, 2017
Opportunity Category: Discretionary	Original Closing Date for Applications: Nov 30, 2017
Opportunity Category Explanation:	Current Closing Date for Applications: Nov 30, 2017

Application Process

- Applications need to be submitted electronically on Grants.gov under funding opportunity number [G17AS000070](#)
- Application needs to be submitted by someone with appropriate authority
- Need to be registered with Grants.gov
- Note that registration of new users can take up to three weeks. Suggest starting this process as soon as possible
- Program Announcement contains details on the Electronic Application Requirement

Projects

- Projects can be for up to 2 years
- If a new data provider plans to complete the new data provider objective in the first year of the project, they can apply for the other 4 objectives during the 2nd year
- Current data providers can apply for the ‘Support persistent data service from existing data providers’ objective funding for both years
- Report is required at end of project
- A 50/50 match of USGS funding and in-kind services is suggested, but not required
- Match can be work related to collecting the data for the Network
- Agencies who have a current project can apply, However, the total funding for any year cannot exceed \$150,000

Application package

- All Projects
 - Proposal Information Summary
 - Use format shown in Attachment A of Program Announcement
 - Proposal
 - Details on each objective
 - Budget Summary
 - Use format shown in Attachment B of Program Announcement
 - Detailed Budget
 - Timeline
- Application must contain information above in a single document that is no longer than 25 pages
- Applicant will submit to Grants.gov along with required Standard Forms SF-424, etc.

Information required for all proposals

- Background information
 - Description of Agency and purpose of monitoring
 - Description of the Agency's existing monitoring networks
 - Water level
 - Water quality
 - Identification of USGS principal or other major aquifers monitored
 - Describe previous projects with the NGWMN
 - Describe your IT Infrastructure
- Project Summary
 - Brief description of the project and objectives that will be included
 - Make sure to include tables of all sites listed for work under each objective. The tables do not count towards the page limit.

Project Description

- For each objective:
 - Work plan
 - Describe work and benefits to NGWMN
 - Identify personnel involved in work
 - Include table of sites for which the work will be done
 - Budget
 - Total cost to accomplish objective
 - Include overhead
 - List the in-kind services that will be used to match the work if they are not a part of the objective
 - Use format shown in section 11.D
 - Timeline
 - Specific requirements for the 5 objectives vary

Objective 1: Support to become a new data provider

- Perform work necessary to become a data provider to the NGWMN. Can also be used by existing data providers to add new web services or add a large set of new wells
- Costs typically range from \$30,000 to \$60,000 of USGS funds
- Priority for water-level data providers in certain aquifers
- Work plan elements
 - Select and classify sites for the NGWMN
 - Provide required data elements for selected sites.
 - Populate the NGWMN Well Registry with site Network information
 - Connect databases to portal using web services
 - Water Level, Water Quality, Lithology, Well Construction
 - Document field and data management practices
 - Prepare a brief report documenting project
 - Expand services

Objective 2: Support persistent data service from existing data providers

- Perform activities necessary to maintain persistent data services from agency databases to the NGWMN Portal.
- Generally from \$5,000 to \$15,000. Can be up to \$30,000 under special circumstances
- Work plan elements
 - Maintain list of sites in Well Registry
 - Keep site information updated
 - Populate data elements for new sites
 - Maintain web services connection to Portal
 - Routine updates to metadata
 - Describe additional work (special circumstances)
 - Example: update web services because of database changes

Objective 3: Filling gaps in information at NGWMN sites

- Perform work necessary to fill metadata gaps in the required data elements listed in the NGWMN Framework Document.
- Allowable work
 - Data collection to fill metadata gaps (logging, GPS, sounding)
 - Data entry to fill metadata gaps (entry of lithology from logs)
 - Data entry to fill NGWMN data gaps (entry of historic data)
- Work plan elements
 - Description of the information gap
 - Planned approach to fill the gap
 - Description of field techniques, provide references
 - Include a table of sites
 - Describe plan to quality assure any new data Document gap filling activities in the final report for the project

Objective 4: Well Maintenance

- Perform maintenance of wells in the NGWMN to ensure that data are of high quality.
- Examples include:
 - Well redevelopment
 - Pumping to maintain connection
 - Well-integrity testing
 - Well rehabilitation
 - Install surface casing
- Work plan elements
 - Describe the need for the maintenance
 - List the proposed activity at each well
 - Include a table of sites
 - Describe who will be doing the maintenance
 - Describe plan to quality assure any new data
 - Document activities in the final report for the project

Objective 5: Well Drilling

- Install wells to enhance or maintain the NGWMN.
- Preference will be given to projects with direct cost-sharing of the well drilling costs.
- Work plan elements
 - Provide justification for each well
 - Describe proposed drilling methods. Include references
 - Include drilling cost for each proposed well
 - Provide a table of proposed wells
 - If the wells is to be a replacement well for an existing NGWMN site, please list the existing site name and NGWMN number
 - Describe who will be drilling the well
 - Document well drilling activities in the final report for the project

Budget

- SF 424 budget form
- Budget summary for each year (Attachment B)
- Detailed Budget
 - For each objective
 - Include in-kind services
 - If data collection at network sites is used as match, need to include in budget tables
 - Specify Indirect Cost rate used and include in budgets

Note: a copy of the indirect cost negotiated rate agreement should be attached to the proposal. If no negotiated rate agreement is available, use 10% as indirect cost rate.

- Use new format

Project Report Requirements

- New data provider projects
 - Summarize work done for the Project
 - Describe networks
 - Site selection approach
 - Site classification approach
 - Describe data collection techniques
 - Describe methods for quality assurance of data
 - Description of web services
 - Analyte list for water-quality sampling
 - List of laboratories
- Existing data provider projects
 - Describe work to provide persistent data service
 - Web service status
 - Planned upgrades in databases that could affect portal
 - Describe any work done for the last 3 objectives
 - Site information gap filling
 - Well Maintenance
 - Well Drilling



Advisory Committee
on Water Information

>> NGWMN NETWORKS

∨ FILTER MAP DATA

>> Principal Aquifer

>> Available Data

>> Site Type

>> State and County

∨ Contributing Agency

- All
- Alaska Department of Natural Resources
- Arizona Department of Water Resources
- Delaware Geological Survey
- Illinois Environmental Protection Agency
- Illinois State Water Survey
- Indiana Geological Survey
- Kansas Geological Survey
- Maine Geological Survey

11S 21W 29DDD 01

SUMMARY WELL LOG WATER LEVELS

Agency	Kansas Geological Survey
Site Name	11S 21W 29DDD 01
Site #	390341099400601
Site Type	WELL
Lat/Long(NAD83)	39.0602,-99.6696
Well Depth	140 ft
Local Aquifer Name	Ogallala Formation
National Aquifer Name	High Plains aquifer
Aquifer Type	UNCONFINED
Water Level Network	Surveillance - Documented Changes
Water Quality Network	-
Additional info	link



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Data Provider Pages

National Ground-Water Monitoring Network Kansas Geological Survey (KSGS) Data Provider Information



Link to: [Kansas Geological Survey Website](#)

NGWMN Contact:

Brownie Wilson
(785) 864-3965
bwilson@kgs.ku.edu

The Kansas Cooperative Water-Level Network is administered by the KGS and includes support from the Kansas Department of Agriculture. Nearly 1,400 wells are monitored with a focus on the High Plains aquifer. KGS also maintains and Index Well Program that provides continuous data at 9 wells. The Kansas Geological Survey (KGS) began participation as a data provider to the NGWMN in 2015. Their participation focuses on water-level monitoring in the High Plains aquifer.

The High Plains Principal aquifer is the only aquifer included in the NGWMN from the KGS.

Data Provider Pages, continued

NGWMN progress reports:

[Final report from initial NGWMN project, July, 2015 to July 2016](#)

Current NGWMN Projects

2016 Cooperative Agreement: 10/1/2016 to 9/30/2017

Project to support maintenance of database connections to NGWMN portal.

NGWMN presentations

[December 2016 presentation to SOGW](#)

Site Selection and Classification	Data Collection Techniques	Data Management	Other Agency Information
<h3>Site Selection and Classification</h3> <hr/> <h4>Kansas Geological Survey</h4> <h5>Site Selection</h5> <p>At the start of this project, Kansas had four operational index wells sites that were selected to be trend wells in the NGWMN (fig. 3). Over the summer months of 2016, three additional index well sites were drilled and another two existing observation wells were equipped with pressure transducers and telemetry units. These additional index well sites will be included in the NGWMN in calendar year 2017 as Trend sites.</p> <p>Kansas Cooperative Network wells were reviewed for sites that were 1) measured in the winter months every year since 2012 and 2) had matching WWC5 well records, indicating the availability of construction and lithologic data for the site. The wells were further selected subjectively to provide a uniform distribution across the Kansas High Plains aquifer region. A total of 133 Kansas Cooperative Network wells were selected as surveillance wells and linked to the NGWMN.</p>			

Proposal Evaluation

- Each objective proposed will be evaluated and ranked by the NGWMN Program Board using the following criteria (each of equal weight)
 1. Relevance.
How does the work help fill gaps in the NGWMN?
 2. Technical quality of proposal.
Does the proposal follow the requirements of the Program Announcement and adequately describe the work needed?
 3. Budget.
Is the cost reasonable relative to the benefit to the Network?
- The NGWMN Program Board will evaluate the proposals
 - The Program Board consists of 10 members, six of which are current data provider agencies.
 - Board will meet in January to review the proposals

Support Resources

National Ground-Water Monitoring Network

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 NGWMN is a product of the [Subcommittee on Ground Water](#) of the Federal Advisory Committee on Water Information (ACWI).

The NGWMN Data Portal provides access to groundwater data from multiple, dispersed databases in a web-based mapping application. The portal contains current and historical data including water levels, water quality, lithology, and well construction. The NGWMN is transitioning from a pilot phase into full implementation. In the future we will be adding additional data providers to the network.

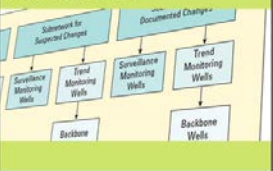
CURRENT NETWORK:
2960 water-level wells
578 water-quality wells
10 subnetworks
8 contributing agencies
43 states
53 principal aquifers

GET INVOLVED WITH THE NATIONAL GROUND-WATER MONITORING NETWORK!

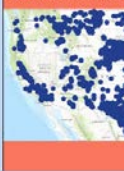
The network is made up of selected wells from existing monitoring networks across the nation. Agency groundwater data can become data providers for the Network. [Learn about contributing data from you](#)

NEW - Information about USGS cooperative agreements to fund data providers is available [here](#).

LEARN about the Network



EXPLORE the Network



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

About the Network

Background | Network Design | Network Status

Background

The NGWMN network is sponsored by the Advisory Committee on Water Information's (ACWI) Subcommittee on Ground Water (SOGW) and was established in 2009 with a pilot network.

The goal of the National Ground-Water Monitoring Network (NGWMN) is to provide information needed for planning, management, and development of groundwater supplies to meet current and future water needs and ecosystem requirements. This will be accomplished by aggregating suitable

Support

- ACWI Subcommittee on Ground Water page
<http://acwi.gov/sogw/index.html>
- Framework Document
http://acwi.gov/sogw/ngwmn_framework_report_july2013.pdf
- NGWMN Web Page
<http://cida.usgs.gov/ngwmn/>
 - NGWMN Cooperative agreements page
<http://cida.usgs.gov/ngwmn/cooperativeagreements.jsp>
 - Includes Frequently Asked Questions
<http://cida.usgs.gov/ngwmn/cooperativeagreementsfaq.jsp>
 - This Presentation
http://cida.usgs.gov/ngwmn/doc/NGWMN_Round2_ProgramAnnouncement.pdf

Tip Sheets

- Created to help data providers with common tasks
- Current tip sheets
 - NGWMN Subnetwork
 - NGWMN Monitoring Categories
 - NGWMN WL Criteria
 - NGWMN WQ Criteria
 - NGWMN Well Registry
 - NGWMN Minimum Data Elements
 - NGWMN Web services
 - **Standard Elements for Water-Quality Web Services**

<http://cida.usgs.gov/ngwmn/learnmore.jsp>

‘Data Provider’ tab – ‘Resources for New Data Providers’

Further information

- If you have specific questions about your agencies participation in the NGWMN, contact me and we can set up a conference call to discuss
- We can also set up a call that includes your IT staff and staff from the USGS NGWMN Portal team who can discuss setting up web services for the Network

- Daryll Pope

dpope@usgs.gov

Office: (609) 771-3933

Cell: (609) 462-7119

<http://acwi.gov/>

<http://acwi.gov/sogw/index.html>

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

Questions