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# USGS Water Availability and Use Science Program and Water Use Data and Research Program

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Delaware River Basin Commission  
Water Management Advisory Committee Meeting  
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# Outline

- Water Availability and Use Science Program (WAUSP)
- Water Use Data and Research Program (WUDR)
- Overview of the 2016 Program Announcement
- FY17 and beyond

# WAUSP Objectives

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To place technical information and tools in the hands of stakeholders, allowing them to answer questions they face about water availability:

- Does the Nation have enough freshwater to meet both human and ecological needs?
- Will this water be present to meet future needs?

**SECURE Water Act**  
**Public Law 111-11, § 9507 and 9508**

# Water Availability Analysis

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*The process of determining the quantity and timing-characteristics of water, which is of sufficient quality, to meet both human and ecological needs.*

## Types of Information

**Technical**

Socio-economic

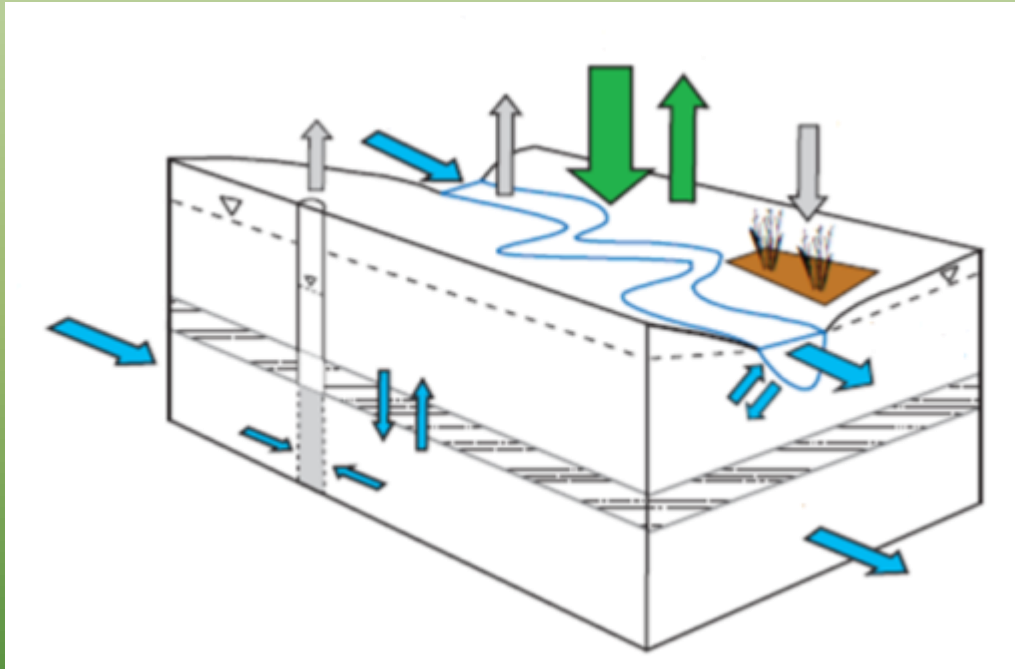
Legal

Regulatory

Political

# Account for water with a “budget”

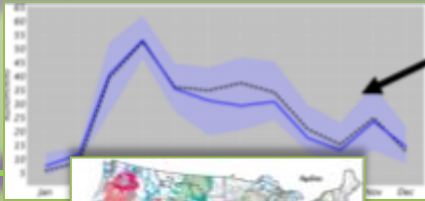
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$$\begin{aligned} &\text{Precipitation} \\ &+ \\ &\text{Flow in} \\ &= \\ &\text{Evapotranspiration} \\ &+ \\ &\text{Storage Change} \\ &+ \\ &\text{Flow out} \end{aligned}$$

# National Topical Studies

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**Estimation of Flow in Ungaged Basins**



**Groundwater Information**



**Estimation of Evapotranspiration**



**Ecological Water Science**



**Water Use**

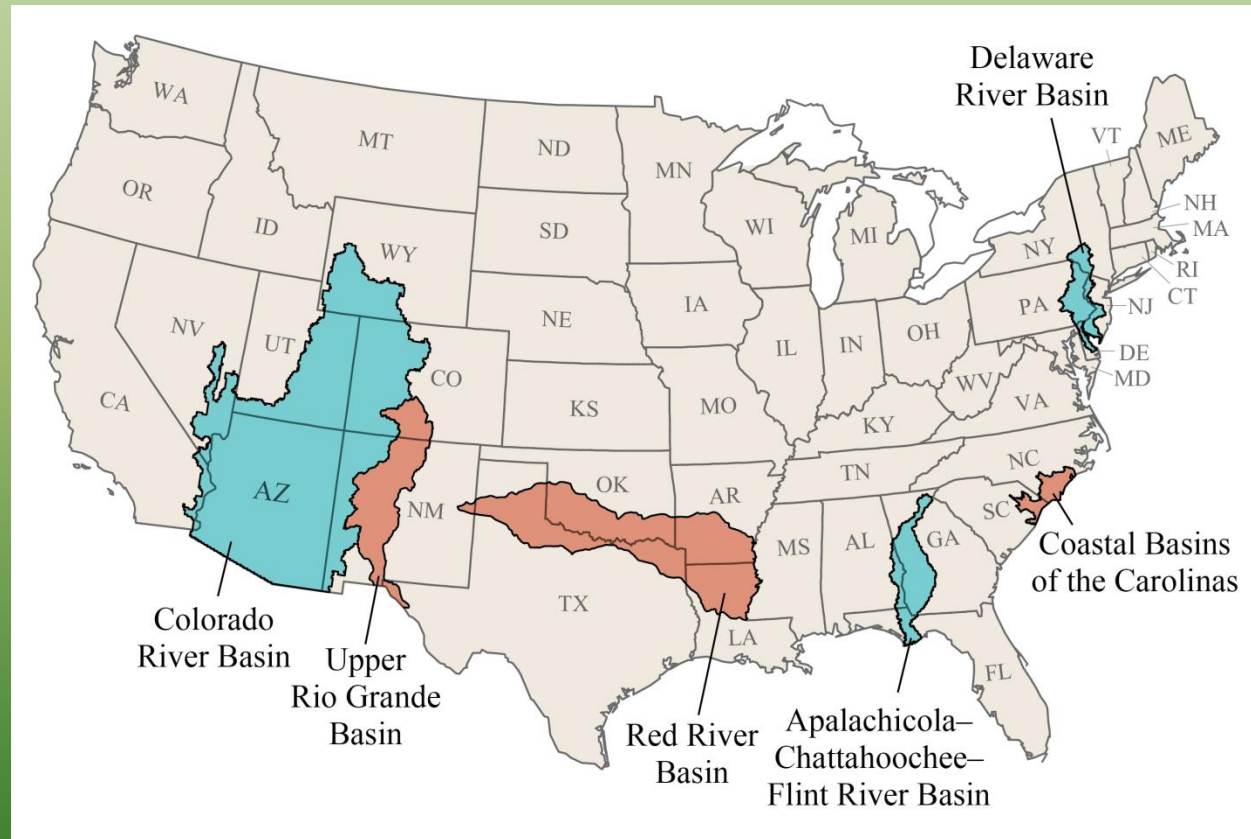
# Focus Area Studies

## Existing FAS

- ACF
- Colorado
- Delaware

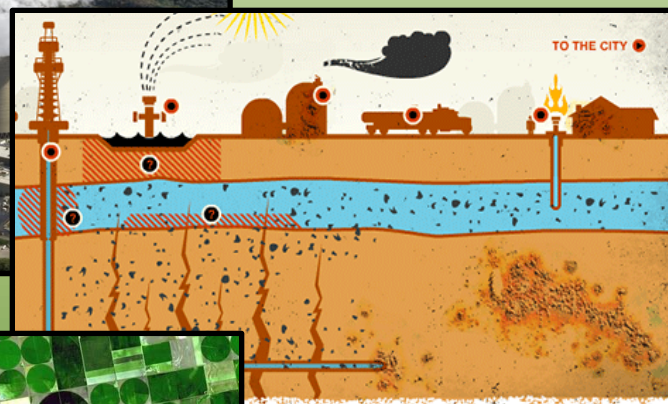
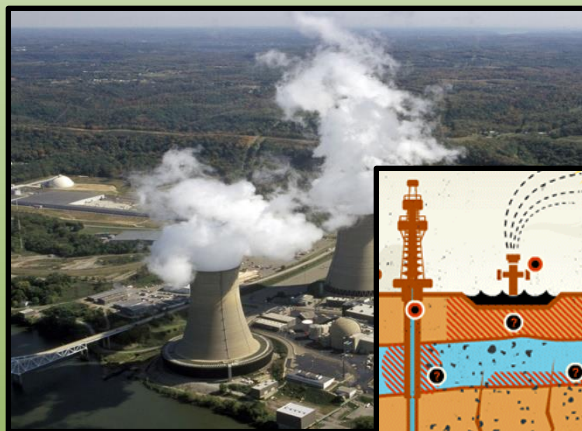
## New FAS (2016)

- Red River
- Upper Rio Grande
- Coastal Carolinas



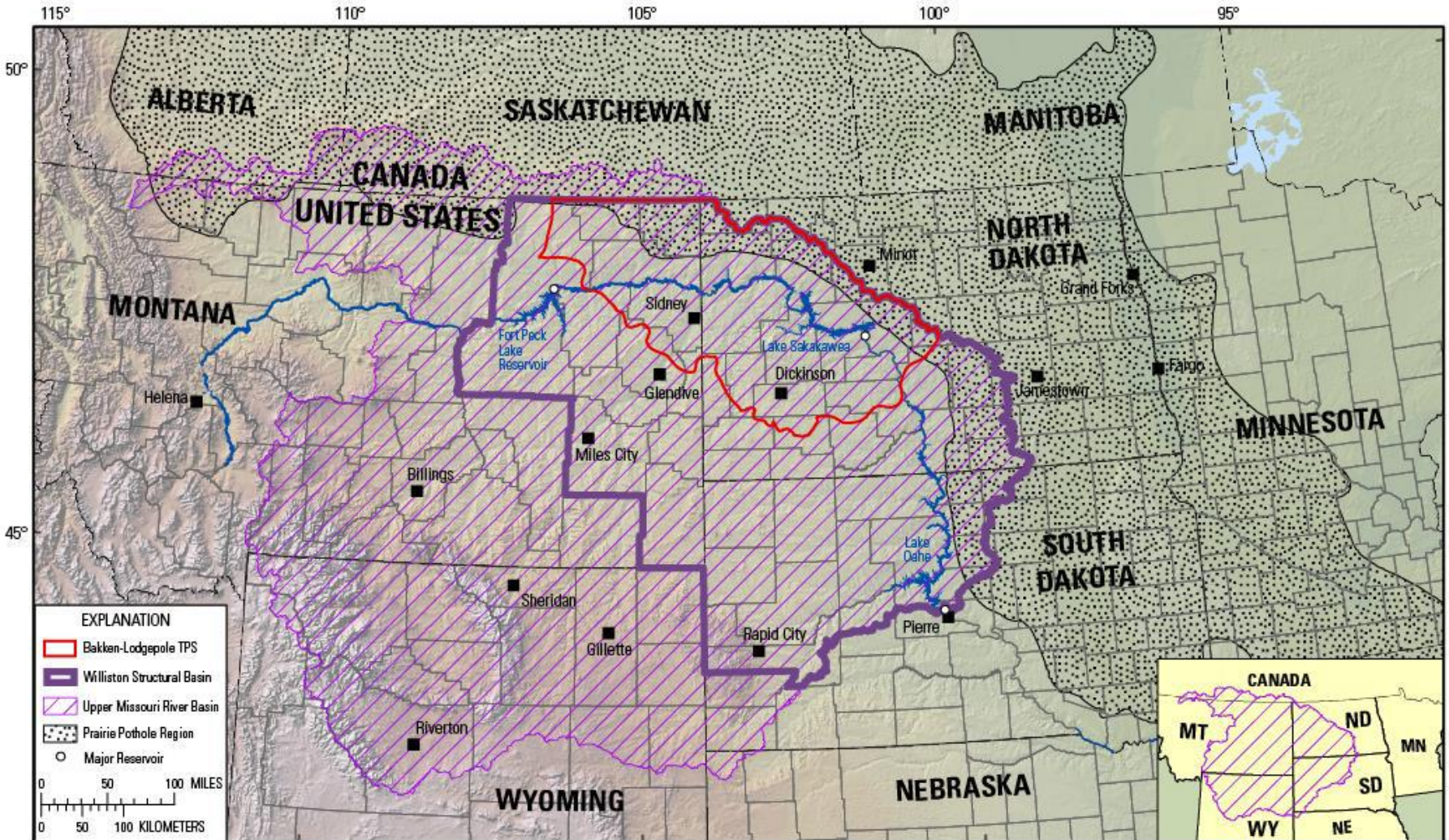
# Water Use Science Team

- Thermoelectric withdrawals and consumptive use.
- Unconventional Oil Gas Topical Study
- Estimating irrigation consumptive use.
- 2015 Compilation
- Water Use Data and Research Program (WUDR)

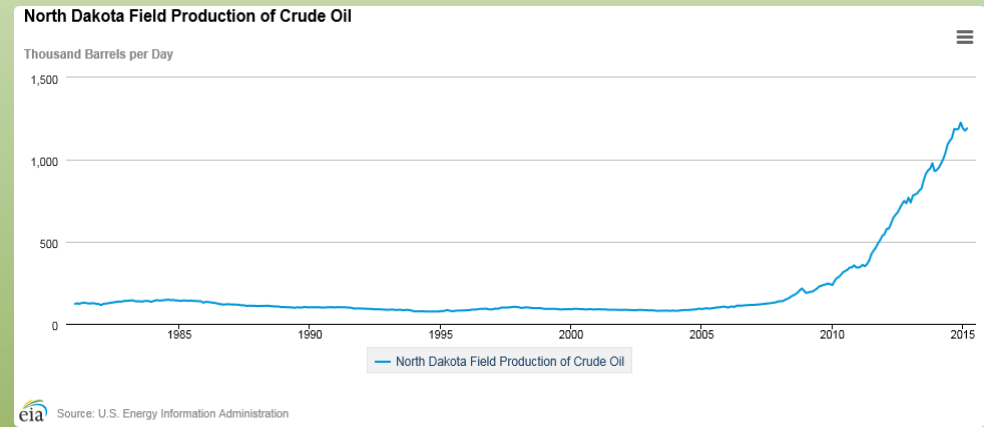
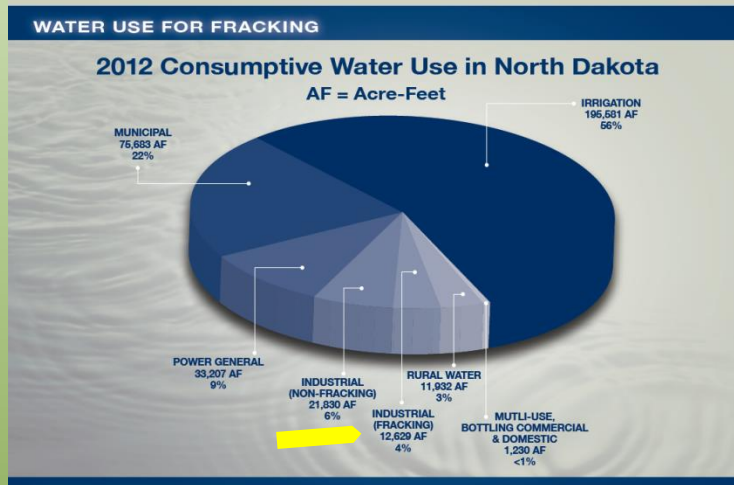




# Unconventional Oil and Gas



# Unconventional Oil and Gas Topical Study Objectives



- Direct uses (drilling, fracking, well maintenance).
- Indirect uses (support services, dust suppression, municipal uses).
- Develop coefficients and consumptive use with broader applications to other UOG operations outside Bakkan.
- Improved water-use data collection methods for UOG uses.

# Information Delivery

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

The screenshot shows the USGS National Water Census - BETA web application. At the top left is the USGS logo with the tagline "science for a changing world". To the right is a navigation menu with "USGS Home", "Contact USGS", and "Search USGS". Below the header is a blue banner with the text "National Water Census - BETA". A white notice box contains the following text: "Notice: This web page is in a beta state. It should be considered provisional and subject to change. If you find any issues or have suggestions, please contact [dbiodgett@usgs.gov](mailto:dbiodgett@usgs.gov). This web page is most compatible with the Chrome and Firefox browsers. Internet Explorer 9 through 11 will be supported soon." On the left side, there is a dark blue sidebar with a "Menu" icon and four items: "Water Budget", "Streamflow Stats", "Aquatic Biology", and "Data Discovery". The main content area is divided into four white panels, each with a title, an icon, and a description:

- Water Budget**: Icon shows a line graph and a grid. Description: "Discover water budget data for watersheds and counties."
- Streamflow Stats**: Icon shows a document with a line graph. Description: "Access streamflow statistics for stream gages and model results."
- Aquatic Biology**: Icon shows the USGS BioData logo. Description: "Access aquatic biology data and streamflow statistics for related sites."
- Data Discovery**: Icon shows a folder with a list of items. Description: "Search and browse datasets, publications, and project descriptions." The list includes: "• Data", "• Reports", and "• Descriptions".

A web application for delivering water availability information at scales that are relevant to the user

# Water Use Data and Research Program

The USGS Water Use Data and Research Program (WUDR) is authorized under the SECURE Water Act Section 9508.

- \$12,500,000 authorized for Grants Program in 2009.
- Each State can receive a maximum of \$250,000, cumulatively, in grant funding.
- The USGS received the first appropriation of \$1,500,000 in federal FY15.
  - Non-competitive awards of \$26K were made available to each State to write a Workplan.
- In FY16 and future years, funding will be awarded competitively.

# WUDR Overview

- Goals:
  - Improve the availability, quality, compatibility, and delivery of water use data that is collected and/or estimated by States.
  - Integrate State water resource agency water-use or water-availability datasets into USGS databases.
- Tiered criteria for major categories.
- Encourage collaboration between State agency and USGS to improve and build better water-use databases.
- Ultimate goals for site-specific, watershed, and aquifer based data.

# FY16 Program Announcement

- Funding Opportunity G16AS00062
- Applications must be submitted via grants.gov by 4 pm EDT on July 18, 2016.
- Program announcement is available @ grants.gov, and on the WUDR website: <http://water.usgs.gov/wausp/wudr/>

# Funding

- 1.5 Million is available for the program for federal FY16.
- Proposed project funding should be for a minimum of \$40,000 and a maximum of \$100,000.
- Proposed projects can be for a maximum of two years.
- Expect to make awards at the end of October 2016.
- Project start dates must be between November 1, 2016 and December 1, 2016.

# Applicant Eligibility

- State water resource agencies which collect water use data.
- Applicants must submit a “Workplan” as outlined by the WUDR FY15 Guidance in order to be eligible to receive an FY16 award.
- USGS personnel cannot prepare an application for an organization.
- USGS personnel cannot receive WUDR funds.



# Priority Topics

- Improved data collection, quality assurance, and delivery
- Improved data for irrigation: sources of withdrawals, volumes, and consumptive use (includes irrigation for agriculture and golf courses)
- Improved estimation of public supply deliveries to customer groups or classes, such as commercial, industrial, and domestic

# Water withdrawals by category, 2010

Livestock



1 percent

Self-Supplied Domestic



1 percent

Public Supply



12 percent

Thermoelectric Power



45 percent



1 percent



Mining

3 percent



Aquaculture

4 percent



Self-Supplied Industrial

33 percent



Irrigation

Public Supply, Thermoelectric, and Irrigation = 90% of total use

# Additional Topics

- Eight-digit hydrologic unit code (HUC-8)-scale water-use reporting
- Water-tracking and Interbasin transfer (between HUC-8 units)
- Consumptive use within public supply systems
- Industrial self-supplied industries (inventory of facilities)
- Mining: source and commodity defined
- Improvement of the domestic per capita coefficients
- Groundwater use: Identifying aquifer and HUC of withdrawal, and further refining the definition of saline/brackish water to meet needs of users
- Public supply systems stratified by socioeconomic factors, such as income, education, etc.
- Other water use data or research topic identified as a state priority, but not included in either list.

# Evaluation Criteria

- Technical quality of the proposal (25%)
- Relevance to SECURE Water Act (20%)
- Relevance to State priorities (20%)
- Transferability (15%)
- Collaboration (10%)
- Proficiency of PI and team members (10%)

# Reporting Requirements

- Progress Reports
  - Details on pages 19-20.
  - Due every 6 months for the duration of the project
- Final Technical Report
  - Describe in detail the work performed and results obtained during the grant period.
  - Due 90 days after the conclusion of the project period.
- Annual Financial Reports (see page 21)
- Final Financial Report (pages 21-22)

# Application Instructions

- Forms SF-424, SF-424A, SF-424b and
- Project Narrative Attachment:
  - Proposal Information Summary
  - Proposal
  - Budget Summary
  - Detailed Budget
  - Specifics are on pages 7-10 of the program announcement.

# FY17 and Beyond

- Expect WUDR to continue until all \$12.5 Million has been appropriated to the USGS.
  - 8 to 9 years if funding level remains at \$1.5M per federal FY
- Priority topics will re-evaluated each year.
  - FY17 will incorporate priorities identified in “Workplans”
- Evaluation criteria will be re-evaluated each year.
- Maximum project funding will likely be increased at some time in the future.

# Questions?

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