

US Water Use Data Sharing Feasibility Study State and Territory Water Agencies Interview Guide and Survey

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Send invitations to study participants by email; include description of the project and team introduction. Schedule zoom or phone call and provide link. Interview will take approximately 1 hour (45-50 minutes for semi-structured interview and 10 minutes to fill out a questionnaire)

Introduction and informed consent (5 min)

- Introduce ourselves. Provide brief overview of project and intended uses for the interview data.
- Communicate the measures we will take to protect confidentiality and anonymity.
- Ask permission to record the interview and take notes and ask if they have any questions.
- Read the informed consent and get a verbal agreement.

Interview

Introductory questions (5 min) *First, we would like to learn about your organization, your role, and your professional responsibilities.*

1. What is your job title and what are your main responsibilities?
2. How long have you worked at this agency?
3. How would you describe the mission of your organization and its main functions, especially concerning water resources?

- *Interviewer: follow up if not mentioned:* Would you say your organization is a state government agency or a non-governmental organization? Does your agency have any regulatory authority regarding water allocation in your State or Territory? What kind of water-related regulatory or planning functions is your agency involved in? What geographic area / jurisdiction does your agency serve?

- Entire State/Territory
- County or municipality
- River basin
- Water district
- Irrigation district
- Other region within a state

[*Interviewer: focus on how much of this agency's focus is on water use / water demand tasks and activities compared to other natural resource/water quality/water availability/other tasks*]

Background questions about water use (15 min) Next, we have a few questions about your agency's role in managing water use data and, more broadly, the role of water use data and information in water management.

4. How would you describe your agency's role in the collection, compiling, management or dissemination of water use *data* in this State or Territory?

Interviewer: Prompt/give examples if unclear (e.g., water use data collection, management, estimation, information brokering, aggregation, reporting)

5. Does your agency rely on water use information for any of its goals or functions and if so, could you describe how the water use information is being used?

6. What can you say about comprehensiveness and quality of water use data that your agency manages or uses?

Interviewer: Prompt about water use categories: Does this apply to all types of water use or certain categories?

7. Does available water use data and their quality adequately support your agency's goals?

Interviewer: Prompt from the answer to Q5: water resource management, sustainability/resilience planning, decision making, etc.) Follow up: If yes, could you describe how it was achieved? If not, what aspects need to be improved?

Questions about data sharing and info exchange (10 min) Next, we have several questions about exchange of water use information and data sharing between different organizations.

8. Are you familiar with any other water management and/or planning efforts in this ST that rely on or would benefit from water use data and especially site-specific water use data?
9. Does your agency have any formal or informal agreements with local, state or federal agencies to share water use data or exchange information about water use?
10. Thinking about water use data or information exchange in this State or Territory, are there any past or ongoing efforts to make water data more open, accessible and standardized?
11. Are there any water use data or information that would be considered sensitive and would have certain restrictions on how it can be shared?

Questions about collaboration and data exchange with USGS (15 min) *Now, we have a few questions about your organization's cooperation with USGS, specifically the USGS Water Science Center.*

12. Could you tell me about your organization's cooperation or collaboration with the USGS Water Science Center with regard to water-use data or information?

Interviewer: Prompt about reporting, successes, and challenges: Do you report water use data to the USGS WSC? Have there been any water or technical knowledge exchange efforts between your agency and the USGS? What aspects of data sharing or knowledge exchange worked well? What has been the most challenging?

13. Could you describe what types of site-specific water-use data, if any, your agency shares with the USGS WSC (or publicly)?

14. Are there any known or perceived risks associated with sharing site-specific water use data with agencies, such as USGS?

Interviewer: Prompt if needed to clarify about risks: You mentioned that X (from 11) water-use data/information is sensitive and thus has restrictions on how it can be shared (if at all) or there could be some concerns about data sharing. *Follow up:* What have your agency or your USGS partners done to reduce these risks? Are there clear policies or established procedures for sharing sensitive water use data? Do these procedures work well?

15. Could you describe some of the benefits of water use information exchange and data sharing between your agency and the USGS?

Interviewer: Prompt if has not been mentioned: How regionally or nationally integrated water data or modeling efforts may benefit your agency specifically or this State or Territory, more broadly?

16. Can you think of anything that could further enable or streamline water use data sharing and water use information exchange with USGS?

Interviewer: Prompt if unclear: this could be related to data, technical aspects, human resources). *Follow up:* Can you think of anything that USGS specifically could provide to help your agency with water-use data collection and sharing?

Optional question (if time allows): Thinking of the entire water system, how is water-use data used in broader assessments of basin- or state- level water budgets/management decisions/sustainability planning?

Online Survey

10 MINUTE QUESTIONNAIRE: (fill out the questionnaire at the end of the interview)

1. What categories of water-use data are currently collected or compiled by your agency?
 - a. Public Supply
 - b. Industrial
 - c. Irrigation-Crop
 - d. Thermoelectric
 - e. Irrigation-Golf Course
 - f. Livestock (major facilities)
 - g. Mining
 - h. Aquaculture
 - i. Other _____ (please list any additional categories)

2. For which categories is water-use reporting mandated (by law)?
 - a. Public Supply
 - b. Industrial
 - c. Irrigation-Crop
 - d. Thermoelectric
 - e. Irrigation-Golf Course
 - f. Livestock (major facilities)
 - g. Mining
 - h. Aquaculture
 - i. Other _____ (please list any additional categories)

3. What are some of the reasons that site-specific water use data cannot be shared with the USGS (or must be aggregated before sharing)? (Please check all that apply)
 - a. Statutes or laws
 - b. Data privacy concerns
 - c. Limited technical capacity (database management and formatting requirements related to site-specific data)
 - d. Limited budget and staff availability
 - e. General lack of trust in the Federal government
 - f. Lack of trust in the USGS's ability to handle sensitive data
 - g. Concern that the shared data may be used for regulatory purposes
 - h. Neighbor state water conflicts/litigation
 - i. Homeland security-related sensitivity
 - j. Data sovereignty
 - k. Does not apply (there are no restrictions on site-specific water-use data)
 - l. I don't know
 - m. Other ____ (*please describe*)

4. What are some of the reasons that site-specific crop irrigation data cannot be shared with the USGS (or must be aggregated before sharing)? (Please check all that apply)
 - a. Lack of modernized irrigation data collection systems
 - b. Statutes or laws regarding agricultural water-use data
 - c. Data privacy concerns
 - d. General lack of trust in the Federal government
 - e. Lack of trust in the USGS's ability to handle sensitive data
 - f. Concern that the shared data may be used for regulatory purposes
 - g. Neighbor state water conflicts/litigation
 - h. Does not apply (there are no restrictions on site-specific crop irrigation data)
 - i. I don't know
 - j. Other ____ (*please describe*)

5. What **crop irrigation** data are available to your agency? (*please check all that apply*)
 - a. Water source
 - b. Crop type
 - c. Number of acres irrigated
 - d. Irrigation method
 - e. Site-specific withdrawals by well or diversion from surface-water feature, or delivery from reclaimed wastewater
 - f. Spatially-aggregated withdrawal data (e.g., sub-county, county, watershed)

- g. Site-specific surface water diversions
 - h. Site-specific return flows
 - i. Aquifer designation for groundwater withdrawals
 - j. Spatially-aggregated consumptive use and conveyance loss estimates (e.g., sub-county, watershed (HUC8 or up to HUC12)).
 - k. Site-specific consumptive use
 - l. Interbasin transfers
 - m. Sales across boundaries
 - n. Information about coefficients and/or estimation methods
6. What **livestock** water-use data are available to your agency? *(please check all that apply)*
- a. Water source
 - b. Water type (fresh or saline)
 - c. Site-specific withdrawals
 - d. Site-specific animal counts and animal types
 - e. Improved and verified coefficients for water-use per head (for animal type, confined or open-range, seasonal variability, and other variables)
 - f. Information to indicate if water withdrawals are from sources supported by USDA programs to protect streams
7. What **industrial water** use data are available to your agency? *(please check all that apply)*
- a. Water source
 - b. Water type (fresh or saline)
 - c. Industry type and/or North American Industry Classification System (NAICS) code
 - d. Groundwater withdrawals reported with aquifer designation
 - e. Site-specific withdrawals (by intake and/or well)
 - f. Deliveries from public supply to industrial facilities
 - g. Deliveries from other sources, such as treated wastewater, to industrial facilities
 - h. Site-specific consumptive use estimates
 - i. Site-specific discharges to surface water or land application
8. What **public supply** water-use data are available to your agency? *(please check all that apply)*
- a. System (that provides water to the public)
 - b. Water source
 - c. Water type (fresh or saline)
 - d. Deliveries to domestic users from public-supply systems, and populations served
 - e. Groundwater withdrawals with aquifer designation
 - f. Site-specific withdrawals (by intake and/or well or well field)

- g. Quantity of water purchased between systems and source(s) of water
- h. Quantity of water sold between systems
- i. Interbasin transfers
- j. System uses (internal and other non-revenue uses) and losses
- k. Use of reclaimed wastewater for public or landscape irrigation
- l. Site-specific daily withdrawals
- m. Water service area boundaries (e.g., maps, boundary service viewer)

9. What **thermoelectric** water-use data/information are available to your agency? *(please check all that apply)*
- a. Net power generation reported by cooling-system type (once-through or recirculating)
 - b. Water source
 - c. Water type (fresh or saline)
 - d. Source of information (e.g., plant, government agency)
 - e. Site-specific withdrawals
 - f. Site-specific return flows
 - g. Site-specific annual and/or monthly consumptive use

10. What is the temporal resolution* of withdrawal data available to your agency for each of the main water-use categories? *(please check all that apply)*

**This refers to the time-step of reported data, NOT the frequency of reporting and NOT latency between collection and reporting.*

	Daily	Monthly	Quarterly	Annually	N/A	Don't know
Public Supply						
Industrial						
Irrigation-Crop						
Thermoelectric						
Irrigation-Golf Course						
Livestock						
Mining						
Aquaculture						

Thank you very much for your time!

Optional (if limited knowledge about water use data): Are there any other agencies or organizations that collect or compile water-use data in this State or Territory that we should talk to?