

APPENDIX G

WORKGROUP FACT SHEETS

Oklahoma Source Water Collaborative



Purpose and Background of the Oklahoma Source Water Collaborative

The Source Water Collaborative (SWC) was developed through a multi-agency collaborative effort in conjunction with the 2025 Oklahoma Comprehensive Water Plan (OCWP). Source water protection is a proven strategy to reduce water treatment costs, improve water quality for communities and ecosystems, and protect water for recreational uses, aesthetics, and tourism.

The overarching goal of the Source Water Collaborative is to bring together multi-agency partners, that each have source water protection authorities, to create synergy by leveraging each other's resources and through coordinated actions.

Workgroup members included representatives from:

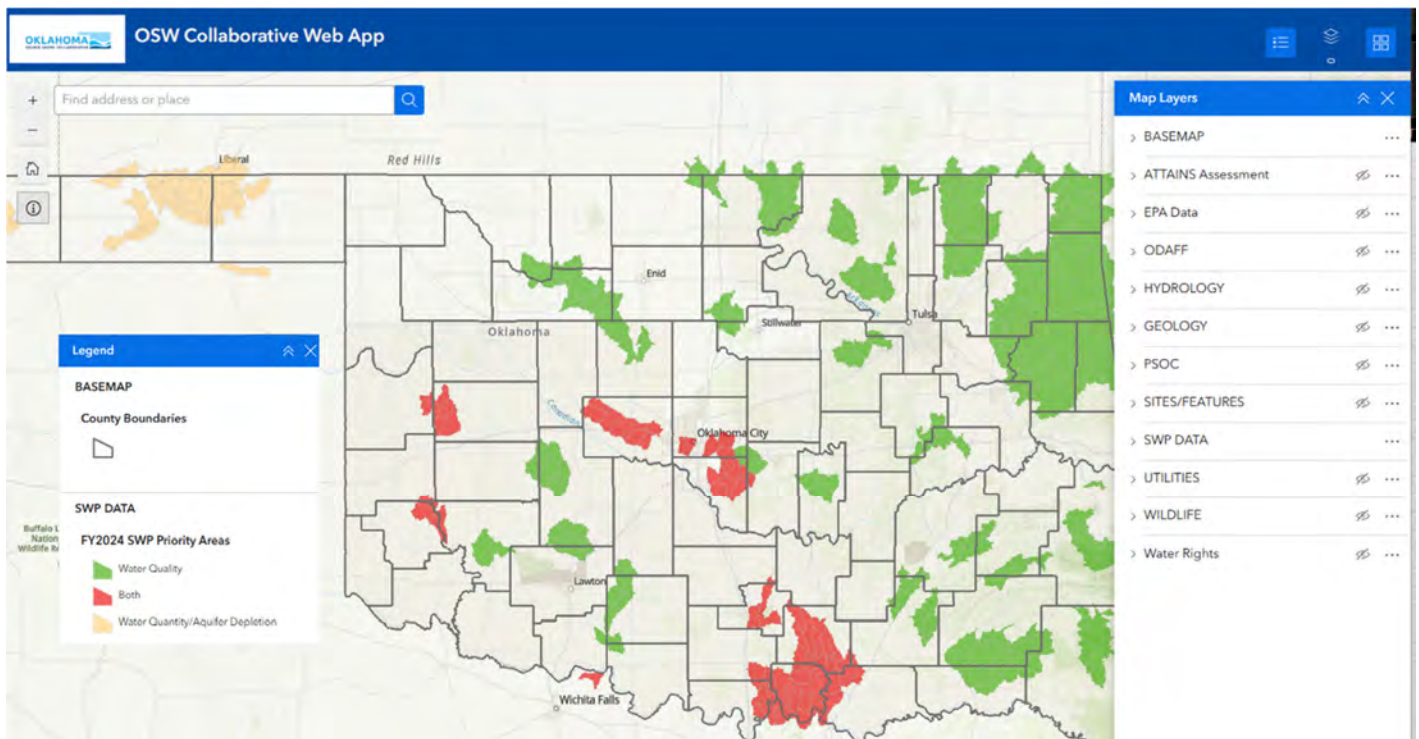
- Oklahoma Conservation Commission
- Oklahoma Corporation Commission
- Oklahoma Department of Agriculture and Forestry
- Oklahoma Department of Environmental Quality
- Oklahoma Department of Wildlife Conservation
- Oklahoma Rural Water Association
- Oklahoma Water Resources Board
- City of Tulsa Department of Water and Sewer
- Groundwater Protection Council
- Source Water Collaborative (national)
- Southwest Section of American Water Works Association
- U.S. Department of Agriculture, Farm Service Agency
- U.S. Department of Agriculture, Natural Resources Conservation Service

The Oklahoma SWC was formed in 2021 and met 12 times through Spring 2025. This included in-person and virtual meetings. Several priority strategies were identified for the workgroup:

- Identify ongoing source water protection efforts of all scales to optimize collaboration
- Gather and share applicable lessons learned
- Facilitate and provide opportunities for collaboration across stakeholders to optimize funding and reduce redundancy
- Combine agencies' mapping efforts to identify and prioritize source waters
- Support increased funding and public awareness to improve source water quality

As part of the OCWP Water Supplies and Storage recommendation, it is recommended that the SWC Workgroup continue and coordinate implementation of identified priority actions as funding is available.

Oklahoma Source Water Collaborative Web App



Workgroup members developed a GIS web map to assist with SWP collaboration in the state. The assembled data comes from a variety of water quality and SWP data sets including: SWP priority areas, brownfields, hazardous waste permit sites, injection wells, land application sites, stormwater sensitive areas, abandoned oil and gas wells, nitrate maximum contaminant level (MCL) violations, previous and ongoing SWP projects, drinking water source infrastructure, fish kill locations, concentrated animal feeding operation (CAFO) locations, and many other layers. Much of this data is linked to web-service data sources meaning they update automatically, while other data will need to be updated periodically as new information is released (annually or semi-annually). The graphic above illustrates the landing page for the map and its layer list.



The national [Source Water Collaborative](#) website provides valuable resources for developing and funding source water protection projects as well as connects [Oklahoma](#) to [other SWCs](#) across the United States.

Water Workforce



Purpose and Background of the Water Workforce Action Plan

The Water Workforce Action Plan (WWAP) was developed through a multi-agency collaborative effort in conjunction with the 2025 Oklahoma Comprehensive Water Plan (OCWP). Oklahoma's water workforce helps ensure communities have safe drinking water and other vital water services that protect public health throughout the state. This sector is currently facing challenges regarding the recruitment, training, and retention of employees. One-third of water and wastewater operators in the United States (U.S.) will be eligible to retire in the next 10 years (U.S. EPA, 2020), and more specialized training is required for industry roles with the emergence of advanced treatment technologies.

The overarching goal of the WWAP is to identify and remove barriers that prolong the critical and unprecedented staff shortage in the water workforce.

Workgroup members included representatives from:

- City of Enid
- City of Norman
- City of Oklahoma City
- Hughes Rural Water District #6
- Midwest City Public Works
- Oklahoma Rural Water Association
- Oklahoma Water Resources Board
- Oklahoma Department of Environmental Quality
- Oklahoma Municipal League
- City of Tulsa Department of Water and Sewer

The Water Workforce Workgroup was established in 2022 and met five times through 2025. Three strategy areas were identified as the fundamental basis for the successful growth of the water workforce in Oklahoma: Attracting New Workers (A); Retaining Existing Workers (R); and Developing the Workforce (D).

The following eight actions were identified as implementation priorities:

- **A-01:** Develop Water Profession Factsheet(s)
- **A-10:** Participation in a local event or celebration
- **A-11:** Develop & Distribute K-12 Water Curriculum
- **D-01:** Gather & Compile Oklahoma Water Workforce Information
- **D-04:** Connect with the Oklahoma Workforce Commission.
- **D-05:** Develop a Water Workforce Coalition.
- **D-06:** Declare a "Water Sector Professional Career Day."
- **R-04:** Develop Operator Training Course

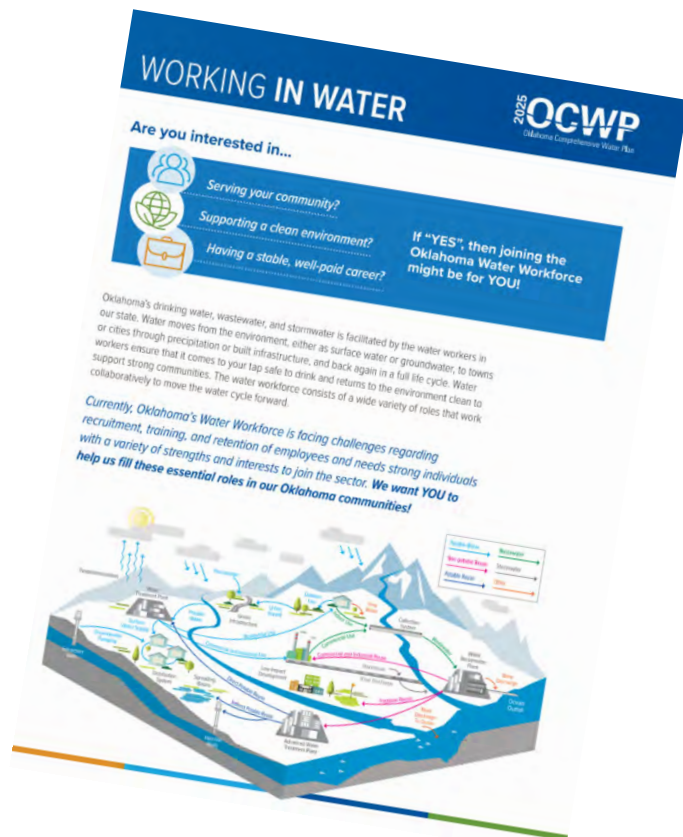
As part of the OCWP Water Infrastructure and Workforce recommendation, it is recommended that the Water Workforce Workgroup continue and coordinate implementation of identified priority actions as funding is available.

Are you interested in...

- Serving your community?
- Supporting a clean environment?
- Having a stable, well-paid career?

If "YES," then joining the Oklahoma Water Workforce might be for You!

As part of priority action **A-01**, the workgroup developed the "[Working in Water](#)" brochure designed for use by water stakeholders to attract new workers to the water industry. The brochure briefly describes a variety of water professions, typical qualifications, and average salary.



Water is for Your Classroom, Too!

As part of priority action **A-11**, the workgroup developed the "[Water is for Your Classroom, Too!](#)" brochure as a quick-start resource guide for integrating water curriculum into the K-12 classroom. This brochure includes brief descriptions and links to six classroom activities that allow students to explore the water cycle, treatment, and distribution aspects of the water industry.



Read the [Water Workforce Action Plan – Executive Summary](#).

Oklahoma Irrigated Agriculture



Purpose and Background of the Oklahoma Irrigated Agriculture Workgroup

Two Irrigated Agriculture workgroups (one in the Southwest and one in the Panhandle) were formed to discuss water-related concerns, challenges, and needs, and to explore mitigation options. Crop irrigation is the largest consumptive water sector in Oklahoma and water demands are projected to increase by 14% by 2075. In 2024, food and agriculture sector contributed to over 640,000 jobs and \$10 billion in business taxes ([Feeding the Economy](#)). In 2022, agriculture production and processing industries represented 2.5% of total state gross domestic product (University of Arkansas).

The overarching goal of the Irrigated Agriculture Workgroups was to 1) define a path towards more sustainable groundwater reliance that maintains landowner rights and farm and ranch income and 2) support data collection, education and outreach, and funding for implementation of projects that reduce water use and/or contribute to better water management.

Workgroup members included representatives from:

- Oklahoma Conservation Commission
- Oklahoma Department of Agriculture and Forestry
- Oklahoma Farm Bureau
- Oklahoma Water Resources Board
- U.S. Department of Agriculture, Natural Resources Conservation Service
- Lugert-Altus Irrigation District
- Oklahoma Panhandle Agriculture and Irrigation Association
- Oklahoma State University
- Ritter Water Well Service
- Agricultural producers

These workgroups were formed in 2022 and met approximately five times through 2023. Many workgroup members went on to join the Panhandle and Southwest Focus Basins. Discussions within these groups focused on long-term holistic planning to improve agriculture longevity and irrigation efficiency in Oklahoma.

Three key areas of success identified were:

- The need for local management structures and regionalized planning to identify locally preferred and locally-tailored solutions.
- Broader stakeholder inclusion of other water users, industries, and community leadership.
- Education geared towards better management, more accurate data collection, and broader, real-time groundwater monitoring data.

While it is not recommended that these workgroups continue, **it is recommended that the Panhandle and Southwest Focus Basins (or members from these) continue to provide input as the Southwest and Northwest regional recommendations are explored and implemented as funding is available.**

These are some of the resources that the workgroups used in their discussion.



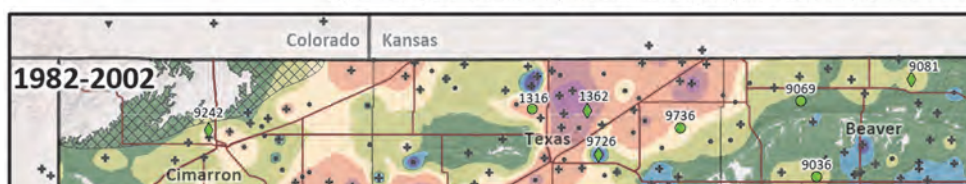
The [Sustainable Southwest Beef Project](#) provides a variety of information, including webcasts and podcasts.

The [Water-Level Changes in the Ogallala Panhandle Aquifer](#) report looks at long-term (1982-2022) and more recent (2002-2022) water level changes in the Ogallala Aquifer which is the primary water source for all demand sectors in the Panhandle.



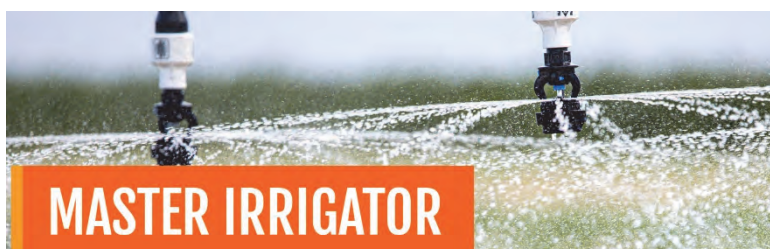
Water-level changes in the Ogallala Panhandle aquifer (1982-2022)

By: Zachary D. Tomlinson, Derrick L. Wagner, and Christopher R. Neel



Members of the groups expressed interest in learning more about local groundwater irrigation district formation. Information from neighboring Texas and Nebraska was presented as possible starting framework for what could be created in Oklahoma.

	Texas Groundwater Conservation Districts (GCDs)	Nebraska Natural Resource Conservation Districts (NRDs)
Driver	- Because of how TX water law is structured, there was a "race to the bottom" where the "biggest pump wins" - GCDs concept arose to give local boards the authority to adopt rulesmaking to limit production, set spacing requirements, and encourage conservation - Maintain a balance between: protecting the rights of private landowners and responsibility to protect water while reducing conflicts	- Over mining of GW was occurring - Existing system was chaotic -- numerous special purpose districts with overlapping authority - Nebraskans value local control - NRDs were created in response
GW Law	- GW belongs to the landowner and is governed by the rule of capture, which grants landowners the right to pump and capture the water beneath their property - GW ownership rights are subject to regulation and control by the courts and legislature and several exceptions have been created	- State DNR regulates SW under an appropriative rights doctrine - NRDs regulate GW under a modified correlative rights/water use framework
Authority	- Required to develop a GW management plan - Can set production limits on GW based on acreage or tract size and setting spacing requirements - Adopt rules to implement the plan - Keep drilling records - Permits and register certain wells - Land lease and set fees - Conduct surveys, research, monitoring programs - Sponsor water conservation efforts	- Much broader than just GW, includes all natural resources - Can implement rules to restrict GW use to prevent overharvesting - Required to prevent overharvesting of GW in areas where SW and GW are hydrologically connected - In some areas, have been able to prevent overharvesting by reduction and allocation to irrigators, other areas the GW table is declining - Set their own tax levies - Some have special bonding authority
Formation	Created in one of 4 ways: action of legislature, petition by landowners, invitation by TCEQ, petition to join an existing GCD	Already formed through legislative action
Agency Interaction	- TCEQ has authority to designate an area as a priority GW management area, thus requiring a GCD to form - GW management plans approved by TCEQ	- No state-level institutions that set rules, all local government - When there is SW/GW interactions, state DNR has authority and must work together with NRD
Tax Rate	- Most GCDs tax at less than 5 cents per \$100 assessed value - By law the tax cannot exceed 50 cents - Tax rate approved by a local election	- Taxes on all privately held land but the rate varies - Funding includes flood control, rec, pollution control, etc.
Boundaries	- District boundaries may or may not coincide with aquifer boundaries - Many follow county boundaries - Areas of the state with no GCD	Boundaries follow surface watersheds, full coverage across state
Key Takeaways	- Filled a gap between individual rights protected through water law and protection of the resource - Formation is voluntary or can be forced by state agency - Funded through tax or fees - Rulemaking authority	- NRDs can and do implement different rules to fit differing conditions among and within NRDs - State-GW authority that is implemented at the local level - Have a much broader role in management of natural resources at the watershed level



The [Master Irrigator Program](#) at OSU was identified as a huge success towards meeting producers goals and improving management of the shared groundwater resources. The group recommended this program should be continued and expanded.

Oklahoma Water Reuse Action Plan



Purpose and Background of the Oklahoma Water Reuse Action Plan

The Oklahoma Water Reuse Action Plan (OWRAP) was developed through a multi-agency collaborative effort in conjunction with the development of the 2025 update to the Oklahoma Comprehensive Water Plan (OCWP). Water reuse is a proven strategy for efficiently using locally available supplies; its implementation necessarily reflects site-specific needs, economics, and values and priorities. Reuse was identified as a typically, potentially, or partially effective water management strategy in 32 Basins to address their potential water shortage of up to 750,000 AFY.

The overarching goal of the OWRAP is to identify and remove implementation challenges for water reuse such that reuse of any type is a viable option for water users (municipal, agricultural, industrial, and others). There is no intent to mandate water reuse, but it should be a viable path for those that want to consider and/or implement reuse.

The OWRAP is designed to be a collaborative framework for resolving hurdles and ultimately removing roadblocks and facilitating water reuse of all types, including but not limited to the following:

- **Municipal nonpotable water reuse:** Recycling treated water from a municipal water recovery facility (WRF) to satisfy water demands that do not require drinking water (potable) quality, such as industrial cooling or landscape irrigation.
- **Municipal potable water reuse:** Recycling treated water from a municipal WRF to augment drinking water supplies. This can be accomplished through the use of an advanced water purification facility to augment surface water or groundwater supplies (indirect potable reuse [IPR]) or by directly augmenting potable water supplies for distribution to the community (direct potable reuse [DPR]).
- **Agricultural water reuse:** Examples include recycling treated water from a municipal WRF to augment crop irrigation and/or livestock water needs or reusing tailwater runoff from crop irrigation to support these uses.
- **Industrial water reuse:** Recycling treated water from a municipal WRF to help meet industrial water demands, and/or reusing water from an industrial facility for its onsite needs. This can include industries of any type that use water and/or produce industrial wastewater, including the energy industry (e.g., produced water from oil and gas operations), power generation, or any other industrial water user and producer.

Workgroup members included representatives from:

- Chickasaw Nation
- City of Bartlesville
- City of Duncan
- City of Guymon
- Norman Utilities Authority
- Oklahoma City Water Utilities Trust
- Oklahoma Conservation Commission
- Oklahoma Department of Agriculture, Food, and Forestry
- Oklahoma Department of Environmental Quality
- Oklahoma Rural Water Association
- Oklahoma State University
- Oklahoma Water Resources Board
- U.S. Environmental Protection Agency
- University of Oklahoma

The OWRAP workgroup began meeting in 2022 and continued meeting generally quarterly through 2024. The OWRAP Workgroup tackled current reuse challenges in five strategic areas. Subcommittees identified the drivers, barriers, and goals for each area, and the actions necessary to advance reuse in each area. The five areas are: Economic (E), Organizational (O), Regulatory (R), Social (S), and Technical & Training (T).

The following ten actions were identified as implementation priorities:

- **E-02:** Develop fact sheet on existing state and federal funding programs that are geared toward or suitable for funding reuse projects.
- **E-05:** Develop information that illustrates economic benefits of providing water suitable for intended purpose.
- **O-01:** Create a top level Inter-organizational Reuse Team; Identify persons within each supporting agency with expertise and capacity to advance water reuse in Oklahoma.
- **R-01:** Prepare concise guidance document or fact sheet summarizing current legal ability to reuse municipal return flows and receive credit for augmenting supplies with recycled water.
- **R-04:** Evaluate what-if scenarios to assess water availability implications of additional reuse, using updated Oklahoma H₂O Tool.
- **S-01:** Organize an Interagency Water Reuse Education and Outreach Team.
- **S-03a:** Compile existing education materials from across the nation and adapt them for use in Oklahoma.
- **S-05:** Evaluate and track how perception of reuse is changing over time (statewide and/or targeted communities).
- **T-04:** Identify IPR/DPR demonstrations and full-scale systems (Oklahoma/adjoining states) that could host technical tours/training for operators and regulators.
- **T-05:** Develop a FAQ/fact sheet highlighting exemplars of successful reuse across multiple types of reuse (e.g., municipal, agricultural, industrial).

To review the action fact sheets, read the [Oklahoma Water Reuse Action Plan – Executive Summary](#).

As part of the OCWP Water Supplies and Storage recommendation, it is recommended that the OWRAP Workgroup continue and coordinate implementation of identified priority actions as funding is available.

APPENDIX H

WORKFORCE BROCHURES

Appendix H.1 Working in Water

Appendix H.2 Water is for Your Classroom, Too!

Are you interested in...





Serving your community?

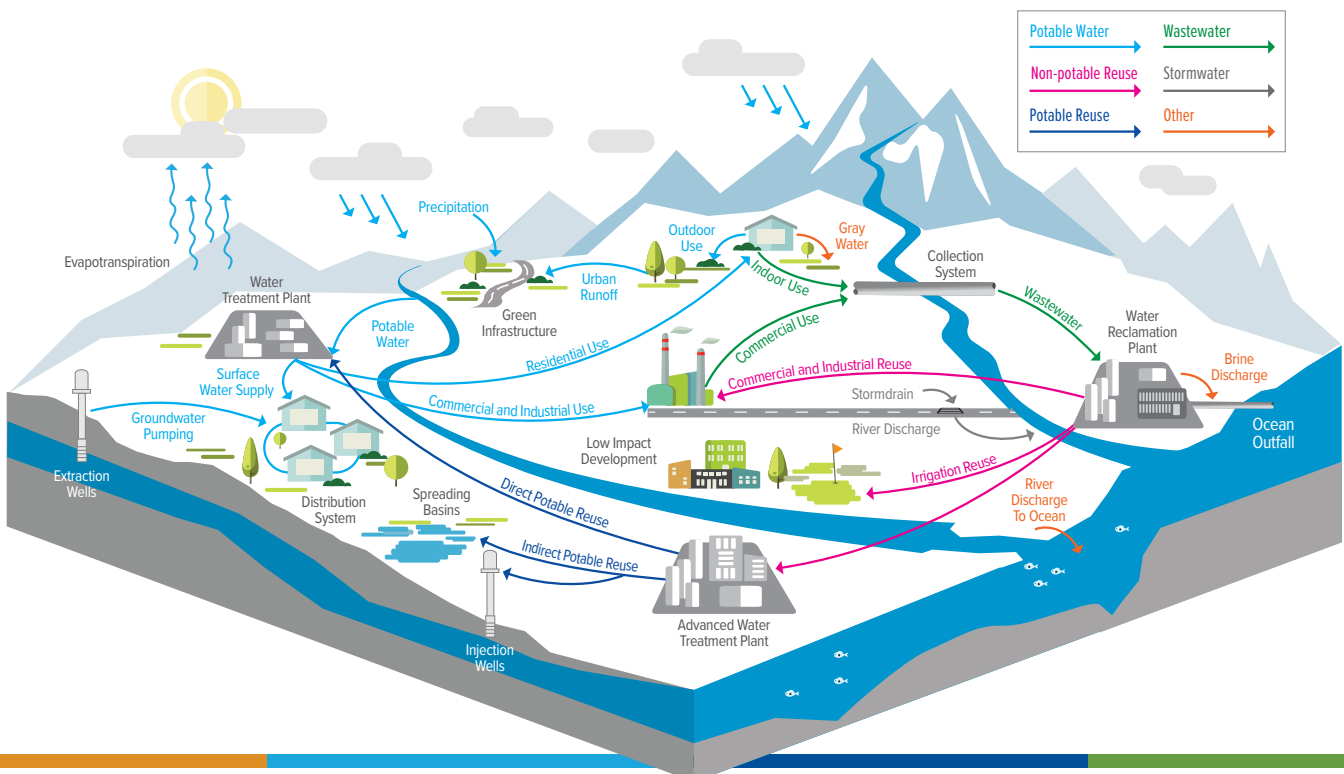
Supporting a clean environment?

Having a stable, well-paid career?

If “YES”, then joining the Oklahoma Water Workforce might be for YOU!

Oklahoma’s drinking water, wastewater, and stormwater is facilitated by the water workers in our state. Water moves from the environment, either as surface water or groundwater, to towns or cities through precipitation or built infrastructure, and back again in a full life cycle. Water workers support strong communities by delivering water to your tap that is safe to drink. They collect and clean it after use so that the water is ready for its next intended use or to be returned to the environment. The water workforce consists of a wide variety of roles that work collaboratively to move the water cycle forward.

Currently, Oklahoma’s Water Workforce is facing challenges regarding *recruitment, training, and retention* of employees and needs strong individuals with a variety of strengths and interests to join the sector. The industry is stable, provides on-the-job training, tuition reimbursement, opportunities for professional development, and much more. **We want YOU to help us fill these essential roles in our Oklahoma communities!**



The following lists a variety of water industry roles and short descriptions. Learn more about some of these careers by visiting [Work for Water's website](#). 

- Water/Wastewater Treatment Plant Operator
- Line Maintenance Technician
- Laboratory Technician
- Electrician
- Mechanic
- Water Distribution/ Wastewater Collections Operator
- Civil/Environmental Engineer
- Utilities Meter Reader
- SCADA Technician
- Utility Manager/Supervisor



Line Maintenance Technician

(Median Salary, \$44,310) 

ROLE: Identify, maintain, and perform routine repair existing distribution and collection system infrastructure.

ABILITY TO: Work with small hand tools, construction and detection equipment; follow safety rules and regulations; obtain and record data in computerized programs; communicate effectively with coworkers and utility customers; understand engineering plans and maps; work outdoors and under extreme weather conditions.

REQUIREMENTS: HS diploma or equivalent is preferred but not required. Some employers may require safety certifications after hiring.



Laboratory Technician

(Median Salary, \$56,750) 

ROLE: Conduct quality testing and/or compliance monitoring on water and/or biosolids to verify regulatory compliance and inform utility decision making. Sometimes also referred to as Water Quality Technician or Specialist.

ABILITY TO: Work with a variety of laboratory equipment to conduct various laboratory procedures; maintain accurate records of all activities; collaborate with other departments to implement strategies for improvement; read and apply applicable environmental regulations; effectively communicate verbally and in writing.

REQUIREMENTS: HS diploma or equivalent is required. An associates or college degree in a relevant scientific (e.g., chemistry, biology, environmental science, etc.) field is usually preferred, and sometimes required. Utilities often require laboratory technicians to be [licensed as an operator](#).



Electrician (Median Salary, \$61,590)

ROLE: Install, maintain, and repair electrical power, communications, lighting, and control systems for treatment and conveyance facilities. 

ABILITY TO: Identify and solve technical issues; read and apply electrical drawings to install electrical systems; use various hand and power tools to complete tasks; work well with others to help design electrical systems.



Water/Wastewater Treatment Plant Operator (Median Salary, \$54,890)

ROLE: Operation and maintenance of a variety of equipment for the purpose of treating [water](#) to potable (or drinking) standards before it is distributed for use, and/or removing chemical and biological pollutants from [wastewater](#) and subsequent sludge before it is released back into the environment or reused.

ABILITY TO: Conduct system inspections for proper functionality; execute various laboratory procedures; follow safety protocol; effectively communicate verbally and through writing; analyze water quality and operational data and take appropriate action(s); learn new technologies as they become available; provide basic service on mechanical and electrical equipment; read and interpret engineering plans; potentially manage other plant staff; collaborate with other professionals to develop recommendations to solve technical problems.

REQUIREMENTS: High School (HS) diploma or equivalent is required. Licensure is required for all operators but can start under temporary certification. Class A-D licensure requires training, examination, & experience. Learn more about Water Operator Certification from the [Oklahoma Department of Environmental Quality \(ODEQ\) website](#).

REQUIREMENTS: HS diploma or equivalent is required. Training can be acquired on the job, technical college (or vo-tech) classes, and apprenticeship as a pathway to licensure. Licensure requirements vary on utility rather than position. Find out more about becoming an electrical journeyman through the [Oklahoma Construction Industries Board](#) (OCIB).



Mechanic (Median Salary, \$46,700)

ROLE: Install, maintain, and repair of a variety of treatment and conveyance facilities and related equipment.

ABILITY TO: Learn various repair techniques; perform routine maintenance to verify that machinery runs properly; clean and upkeep building; collaborate with other professionals such as electricians and HVAC technicians; diagnose problems and troubleshoot to solve them; work with a variety of hand and power tools.

REQUIREMENTS: HS diploma or equivalent is required. Typically, employees are trained through technical college (or vo-tech) classes and/or on-the-job training. Licensure requirements vary on utility rather than position. Learn more through the [OCIB](#).



Water Distribution/Wastewater Collections Operator (Median Salary, \$54,890)

ROLE: Monitors and controls water and/or wastewater distribution and/or conveyance facilities such as pump or lift stations and piping, often monitoring pressure and flow rates.

ABILITY TO: Conduct system inspections to verify proper functionality; follow safety protocol; effectively communicate verbally and through writing; evaluate data and operational conditions then take appropriate action(s) if necessary; understand system requirements and applicable regulations; maintain and/or repair system equipment; learn new technologies as they become available; collaborate with other professionals to develop recommendations to solve technical problems.

REQUIREMENTS: HS diploma or equivalent is required. Licensure is required for all operators but can start with temporary certification. Class A-D licensure requires training, examination, & experience. Learn more about Oklahoma Certification from [ODEQ](#).



Civil/Environmental Engineer (Median Salary, \$100,000)

ROLE: Design, plan, and supervise the construction and maintenance of infrastructure projects such as treatment facilities, distribution and conveyance systems, and stormwater collection. Typically, civil ([Median Salary](#)) or environmental ([Median Salary](#)) work in the water industry.

ABILITY TO: Analyze as-builts and other project-related data then apply it to project design; understand and comply with regulatory requirements; prepare cost estimates; design facilities and processes to satisfy treatment, distribution, or conveyance needs; effectively communicate with clients and other professionals verbally and through writing.

REQUIREMENTS: A bachelor's degree is required but a master's degree is preferred for employers. Licensure is encouraged for all engineers but not required for employment. Certification information can be found through the [Oklahoma State Board of Licensure for Professional Engineers and Surveyors](#).



Utilities Meter Reader (Median Salary, \$41,940)

ROLE: Manual data collection from meters to track the consumption of water for various types of utility customers such as residential, commercial, and industrial properties.

ABILITY TO: Keep detailed records of meter readings and other on-site observations; recognize system abnormalities based upon site and data observations; perform basic maintenance on the meters themselves; professionally interact with utility customers; perform physical work exposed to extreme weather conditions.

REQUIREMENTS: HS diploma or equivalent is not required but preferred. Training is typically acquired upon hiring.



Supervisory Control and Data Acquisition (SCADA) Technician (Median Salary, \$72,800)

ROLE: Deploys, maintains, and operates utilities' SCADA systems as they relate to treatment, distribution, and conveyance operations.

ABILITY TO: Perform a variety of operational and repair tasks to maintain and service SCADA systems; use a range of hand and power tools; execute basic mathematical calculations; interpret electrical drawings and specifications; comprehend and follow various safety procedures; collaborate with various utility technicians and operators.

REQUIREMENTS: HS diploma or equivalent is required; relevant supplementary coursework at a vocational school or college/university; Associate's degree preferred; [Control Systems Certification](#) may be required for some roles; some training completed on-the-job.



Utility Manager/Supervisor (Median Salary, \$167,740)

ROLE: Oversees the planning, operation, and maintenance of a system's treatment facilities and network of distribution and/or collection infrastructure. The scope of this role will vary based upon the size and complexity of the system.

ABILITY TO: Hire, direct, train, and supervise staff; maintain oversight of short and long-term budgets; interpret technical and legal documentation to provide public safety and regulatory compliance; coordinate work through collaboration with others; solve problems effectively and efficiently; communicate with industry peers and utility customers.

REQUIREMENTS: A bachelor's degree with multiple years of relevant experience is typically required. However, an equivalent combination of education and relevant experience can be an adequate substitute. Depending upon the utility's size, an operator's license is preferred.

There are quite a few positions that are not listed in this guide that help sustain the water industry. A non-extensive list of these careers are as follows: office administrator, grant writer, accountant, general contractor, and compliance specialist.

Please note that all roles, responsibilities, and requirements for specific roles vary by employer and may differ from what is listed here.

Information provided in this handout has been adapted from the Bureau of Labor Statistics, American Water Works Association, Water Environment Federation, and the U.S. Environmental Protection Agency.

Brochure was developed using funds from OWRB and USACE.



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WATER IS FOR YOUR CLASSROOM, TOO!

A QUICK-START RESOURCE GUIDE for integrating water curriculum into your K-12 classroom.

Teachers – The next generation of water professionals begin their career in your K-12 classroom. To help you integrate water curriculum and inspire your students, a variety of online teaching resources have been gathered and linked below for you to explore.



U.S. Environmental Protection Agency (EPA):

Navigate to EPA's [Drinking Water Activities for Students and Teachers](#) page to download a various activities on water topics such as the water cycle, non-point source water pollution, and aquifers for all K-12 age groups. Each activity has an associated teacher guide. High school students or teachers can learn more about Watershed Management through their free online academy modules.



Ed-Pass H2O: Navigate to [Ed-Pass H2O's Digital Classroom](#) to access six digital classroom modules. Each module has or will have learning goals, activities, and learning standards. They also have a page of water industry [resources](#).



Project Water Education Today (WET): Navigate to Project WET's website for a variety of science-based, interactive water activities. [Lesson plans](#) for all ages and [children's activity booklets](#) are available for free download or purchase on their website for a small fee.



National Ground Water Association University (NGWAU):

Navigate to NGWAU by Oklahoma State University's (OSU) [Awesome Aquifer 360](#) page. Awesome Aquifer 360 is a series of online groundwater lessons that can be adapted to grade 3 to 12 classrooms. Teachers can register or join the wait list to get free digital access and physical companion kits for their entire class by clicking here. Sponsors can donate materials to schools, or they can be purchased if access is needed immediately.



STEM in a Bag: Tulsa Regional STEM Alliance has a variety of free guides to short STEM activities on their [website](#). A few water-centric activities include the building a [water filter](#), [aquifer in a cup](#), and [pipeline challenge](#) (modified for water) for 3rd through 8th grade students. Each activity lists the required materials and the approximate duration.



U.S. Geological Survey (USGS):

Navigate to USGS's [Teacher Resources](#) page to find lesson plans for middle-aged students, classroom posters for print, links to interactive water webpages.



Water Cycle in a Bag – Water Activity for Ages K-12

OBJECTIVE: Students will model the water cycle on a small scale. Students will learn the basic principles of evaporation, condensation, precipitation, and collection.

MATERIALS: Sandwich size plastic zip-lock style bag, permanent marker, water, clear tape, blue food coloring, 8 oz plastic cup, and popsicle stick.

INSTRUCTIONS:

1. With permanent marker, draw a sun and clouds on the upper half of the plastic bag leaving room on the lower half blank.
2. Fill the plastic cup with water to approximately half-full of water. Add drops of blue food coloring and stir with a popsicle stick until the water is dark blue.
3. Open the plastic bag, pour in the blue water, and seal tightly.
4. With the tape, hang the bag in a window that gets lots of sunlight.
5. Check on your bag to visualize the water cycle as droplets form and run down the side of the bag like rain.
6. This information (or box) needs to be added whether the activity can fit or not.

Brochure was developed using funds from OWRB and USACE.



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