



One Water Roadmap

September 2024

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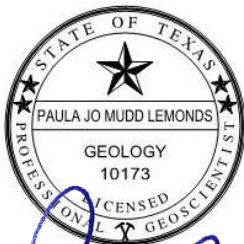


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Prepared for the City of Boerne



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September 20, 2024

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1 What is One Water?

A One Water approach is a flexible, long-term strategy for comprehensively managing drinking water, reclaimed water, wastewater, and stormwater. It considers all water sources within a community to maximize environmental and community benefits, connecting all elements of the water cycle. This integrated approach aims to meet goals for water quantity, quality, equity, and resilience, allowing coordinated actions that benefit the community and sustain cherished access to green and blue spaces in Boerne as shown on Figure 1.

Nationally, the US Water Alliance developed the One Water Roadmap in 2016, and the Water Research Foundation (WRF) developed the Blueprint for One Water in 2017; these documents define the One Water approach and set the foundation for the One Water movement. In 2023, the WRF further defined “a ‘One Water City’ [as a city that] holistically manages all water systems to meet the needs of all people and the environment, today and in the future.”¹

Locally, the Hill Country Alliance, headquartered in Dripping Springs, and The Meadows Center for Water and the Environment, based at Texas State University in San Marcos, have recognized and promoted One Water concepts. The Hill Country Alliance developed a guidebook in 2021 that serves to promote and educate users about One Water in the Hill Country, and it defines One Water as “a term that refers to an integrated approach to planning and implementation in order to manage finite water resources for long-term resilience and reliability. One Water considers all water resources as a potential water supply—rainwater, drinking water, stormwater and wastewater—and seeks to minimize our overall demand for water resources. By using a One Water planning approach, water resources can be used together, efficiently and effectively, for the benefit of the community and the environment.”²



Figure 1. The City of Boerne’s cherished access to green and blue spaces

¹ One Water Cities: Development of Guidance Documents and Assessment Metrics, 2023. Water Research Foundation Project #4969.

² One Water in the Texas Hill Country, 2021. Hill Country Alliance and National Wildlife Federation.

In 2023, the Boerne City Council passed a resolution supporting One Water initiatives. Other cities in the Texas Hill Country that have passed One Water resolutions include Fredericksburg and Wimberley. In addition, New Braunfels Utilities, in collaboration with the City of New Braunfels and the Guadalupe-Blanco River Authority, have formed One Water New Braunfels to foster One Water cooperation. Most larger and many mid-size Texas cities, including the City of Boerne, have developed water resource plans. However, the City of Boerne appears to be the first city of its size to develop a dedicated One Water Roadmap to guide water resource planning for the future.

2 Purpose of Boerne’s One Water Roadmap

Boerne’s water sources are vulnerable to conditions that could limit their availability, including drought, reduced recharge, water quality impairments, and heightened demand on regional supplies. Without a renewed approach to water management, the City of Boerne (City) could face increased water challenges in the future.

The City Council passed Resolution No. 2023-R84 in November 2023 (see Appendix A: Boerne One Water Resolution), supporting innovative One Water strategies. The resolution directs City staff to study opportunities to implement One Water strategies, and assess the associated costs and benefits, including considerations for both public infrastructure and private development projects.

The purpose of this Boerne One Water Roadmap is to

- Guide development and refinement of One Water strategies that support implementation of multi-beneficial policies, programs, and projects;
- Share with local and regional watershed partners and stakeholders to promote collaboration of multi-beneficial policies, programs, and projects and leverage economies of scale; and
- Educate City leaders, elected officials, staff, and members of the community regarding One Water benefits as shown on Figure 2 through the One Water Community Education and Outreach Plan (see Appendix B: One Water Community Education & Outreach Plan).

Intentional coordination and collaboration among various City departments, organizations, and agencies in charge of management all aspects of the City’s urban water cycle—including water supply, wastewater, reclaimed water, storm and flood protection, water quality, watersheds, and waterways—will drive positive outcomes by reducing costs, improving resilience, and enhancing community livability.



Figure 2. Boerne One Water benefits

3 Roadmap Elements and Development Process

The Boerne One Water Roadmap (Roadmap) was developed with representatives from across the City, including utility managers, engineers, and planners who oversee the City’s reservoirs, treatment facilities, stormwater quality, watershed protection, flood plain management, conservation practices, and future land use and development.

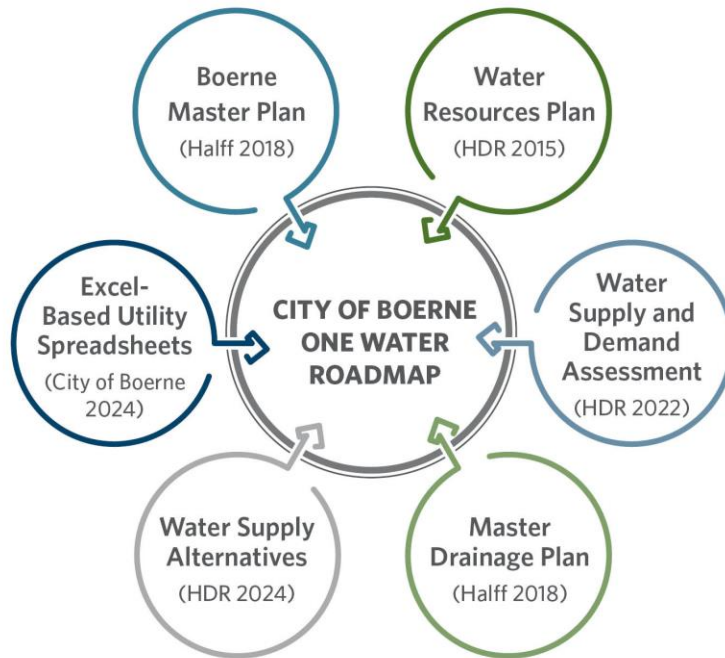


Figure 3. Boerne One Water Roadmap leverages and connects existing planning efforts

This Roadmap leverages existing planning efforts, integrating plans, ideas, and people to create efficient and cost-effective water management strategies, as shown in Figure 3.

Additionally, as part of the development of this Roadmap, a review of existing City operations was completed. Data related to existing treatment, collection, distribution, and management, including operational, asset condition, water quality, overflows, flooding, and flow monitoring data were compiled. Many operations serving Boerne align with a One Water approach, including the Unified Development Code, Engineering Design Manual, and Low Impact Development Manual,

as well as the City’s well established and progressive use of reclaimed water. Several of the City’s utility operations are summarized below.

3.1 Inventory of Existing Planning Documents

The City completed the following comprehensive and water-focused planning efforts, which inform the development of this Roadmap:

- Water Supply Alternatives (HDR, 2024)³
- Excel-based Utility Spreadsheets (City of Boerne, 2024)
- Water Supply and Demand Assessment (HDR, 2022)
- Master Drainage Plan (Halff, 2018)⁴
- Boerne Master Plan (Halff, 2018)⁵
- Water Resources Plan (HDR, 2015)

³ <https://www.ci.boerne.tx.us/1079/Planning-in-Boerne>

⁴ <https://www.ci.boerne.tx.us/2349/Master-Drainage-Plan>

⁵ <https://www.ci.boerne.tx.us/1839/Boerne-Master-Plan>

- Upper Cibolo Creek Watershed Protection Plan (City of Boerne, Parsons, Upper Cibolo Creek Watershed Partnership, 2013)⁶

At a high level, existing strategies, methodologies, and goals were identified, assessing the progress of current approaches and practices. Additionally, gaps were detected and outstanding or ongoing strategies and actions were consolidated within the Roadmap.

3.2 Incorporating Community Priorities

The City previously engaged residents through a survey, as part of the Boerne Master Plan development, to gather diverse input. Two of the areas for which the City solicited input were related to water:

- Ensure infrastructure can support growth (streets, drainage, water, sewer, gas, etc.)
- Water planning & conservation efforts.

Based on the survey responses in Figure 4, water services are among the top three most important services the City offers. Nevertheless, a significant portion of respondents rate the quality of these water services as poor or very poor.

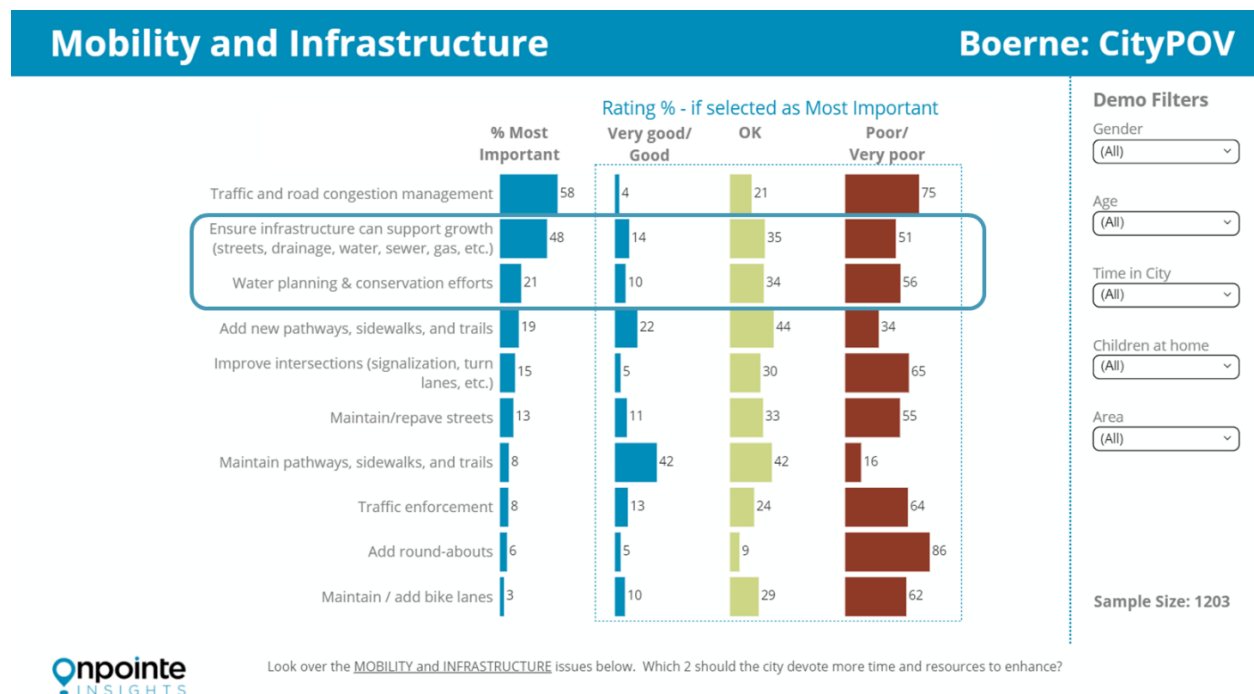


Figure 4. One Water Opportunities to Address Community Priorities

This disparity highlights a critical need for the City to address communication issues with residents, as residents place high value on these services but are dissatisfied or unaware of their current state. Improving water-related levels of service and/or perception could significantly enhance overall public satisfaction and trust in the City's ability to meet essential needs.

⁶ <https://www.ci.boerne.tx.us/DocumentCenter/View/3690/Upper-Cibolo-Creek-Watershed-Protection-Plan-PDF?bidId=>

3.3 Population Growth is Driving a One Water Approach

In 2017, as reported on the Texas Water Development Board (TWDB) – Historical Water Use Survey Data for Public Water Systems⁷ website, the City’s reported water service area was estimated to have a population of 14,874. By 2022, it was estimated that the population grew to almost 23,000, or an increase of 55 percent. Based on the projected numbers of single-family and multi-family residential units, expected population can be estimated using a factor of 2.98 persons per household determined from the 2020 Census data. Figure 5 shows population projection scenarios providing a range of growth, both high- and low-growth rates.

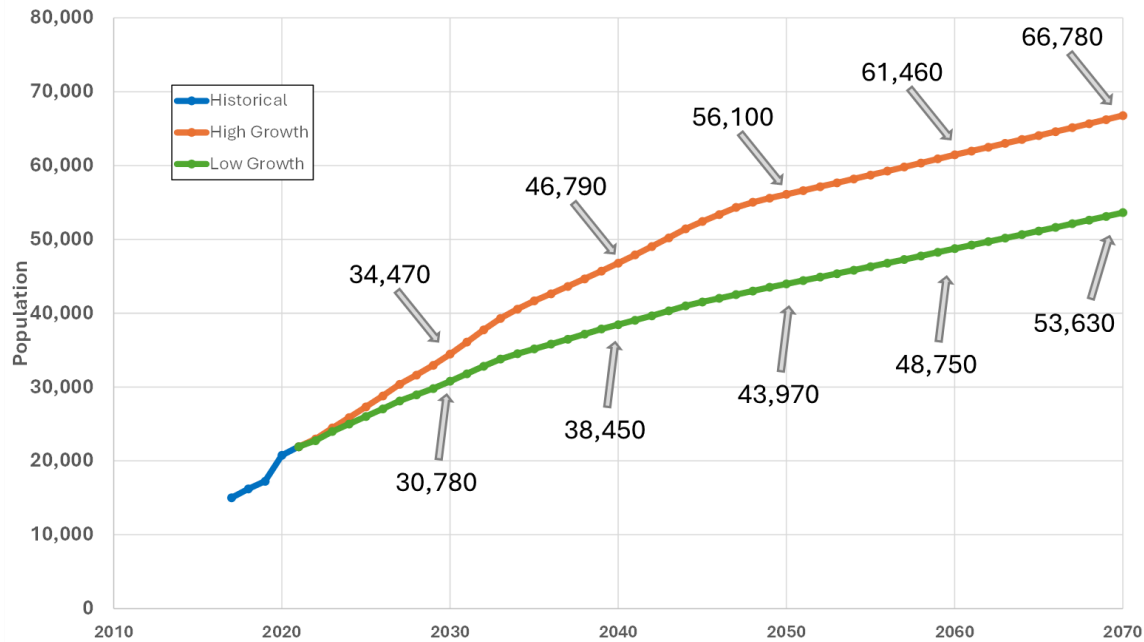


Figure 5. City of Boerne Water Utility Population Projections

This projected rapid growth necessitates substantial investment in infrastructure to sustain and support the expanding population. Without adequate infrastructure maintenance and development, the City may face challenges, such as insufficient supply and capacity of its water and wastewater systems and water quality degradation. Proactive planning and investment in infrastructure are essential to ensure that the City can accommodate future growth, while maintaining a high quality of life for its residents. This includes enhancing public facilities and upgrading utilities to meet the demands of a growing population.

3.4 Understanding of the City’s Urban and Natural Hydrologic Cycle

A One Water approach, as shown on Figure 6, holistically manages community water sources to maximize environmental and community benefits, aiming for water quantity, quality, equity, and resilience through coordinated actions.

⁷ <https://www.twdb.texas.gov/waterplanning/waterusesurvey/dashboard/index.asp>. Accessed July 16, 2024.

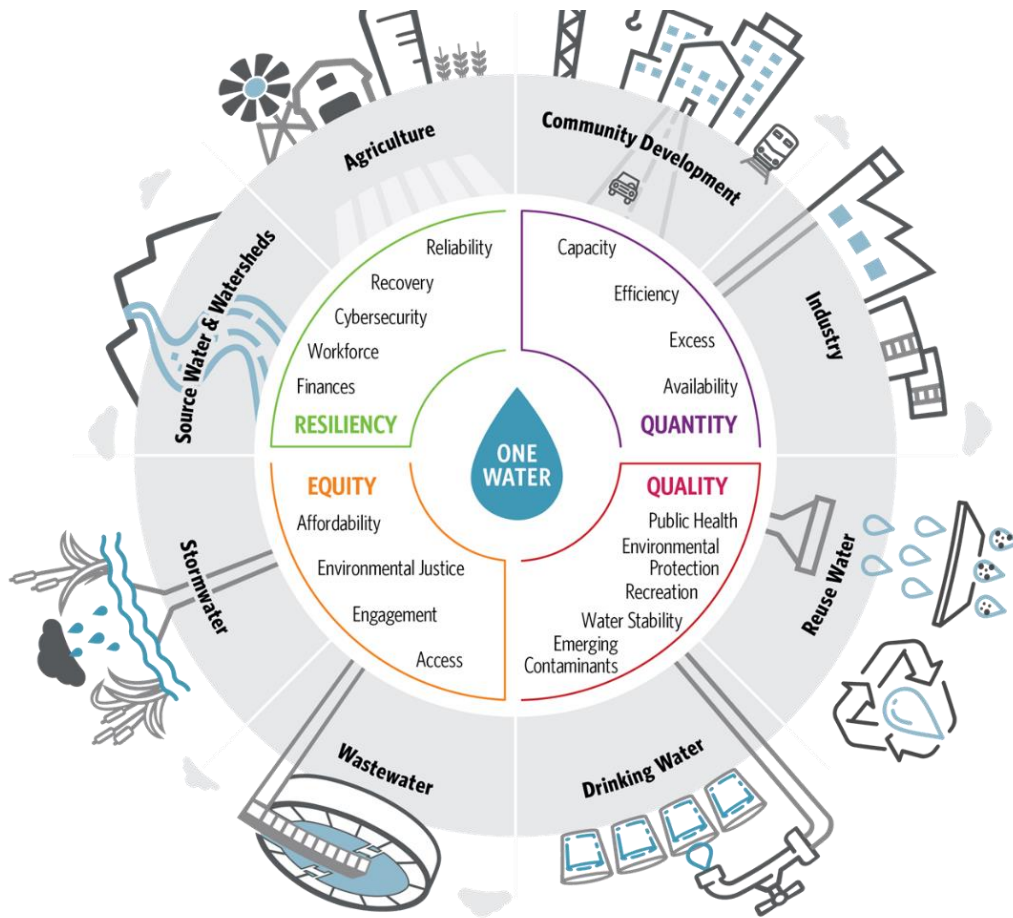


Figure 6. Approaching Water Management with a One Water Lens

Prior to applying a One Water approach, it is critical to understand the City’s current urban and natural hydrologic cycle and the opportunities for integration and collaboration.

3.4.1 Water Supply Sources

The City’s water supply consists of both potable and non-potable sources. There are three primary sources of potable water, sourced from both surface water and groundwater, and a single non-potable source. The primary source of water is the purchase of treated surface water from Canyon Lake through a contract with the Guadalupe-Blanco River Authority (GBRA). The other two water sources are the City-owned and operated Surface Water Treatment Plant at Boerne City Lake, and groundwater supplies from nine Trinity Aquifer wells (two are emergency use only). The water from GBRA and Boerne City Lake are the most



Figure 7. A City of Boerne water tower

reliable supply sources through extended drought conditions. Water produced from the Trinity Aquifer is the least reliable source because of decreasing groundwater levels due to lower precipitation over the last several years. The yields from each water supply source are shown in Appendix C: Boerne's Water Supply and Reclaimed Water Sources.

The City's potable water sources are supplemented by the City's reclaimed water system. The newest source of water reduces demand on the potable system by providing a non-potable source of water for residential outdoor watering and commercial uses.

3.4.2 Wastewater System

The City operates two wastewater treatment plants (WWTPs), including the 1.2-million-gallons-per-day (MGD) Esser Road WWTP, and the newer 1.4-MGD Old San Antonio Road Wastewater Treatment and Recycling Center (WWTRC). The WWTRC discharges reclaimed water to Menger Creek, which flows into Cibolo Creek. The WWTP discharges into Currey Creek, which flows into Cibolo Creek.



Figure 8. Cibolo Creek downstream of Boerne's Wastewater Treatment and Recycling Center discharge location

3.4.3 Reclaimed Water System

The City prioritizes the use of reclaimed water and currently uses the supply for residential and municipal irrigation, streamflow management, and dust control. The City is a leader among Texas utilities in providing reclaimed water to residential customers.

The WWTRC produces Type I reclaimed water, which is used to supply reclaimed water to its residential and commercial customers. Subdivisions within Boerne, including the Ranches at Creekside and Esperanza, use the City's reclaimed water system for residential irrigation.

The Esser Road WWTP produces Type 2 reclaimed water, which is currently used for streamflow maintenance and dust control for construction sites. Appendix C includes further information regarding the City's reclaimed water production.

3.4.4 Future Plans

The total number of reclaimed customers is approximately 1,150 and growing with the continued construction of new homes and businesses east of Boerne. New subdivisions along the eastern portion of the water service area are continuing to take advantage of the reclaimed water system due to its drought-proof supply of water. As demands continue to increase, the City is in the process of improving and expanding the capacity of its reclaimed water infrastructure to meet growing demands through the expansion of the WWTRC.



Figure 9. Reclaimed water tower at Esperanza

3.4.4 Stormwater and Development Management

City stormwater drains to Cibolo Creek, a tributary of the San Antonio River. The City has actively managed stormwater for decades by developing drainage master plans, beginning with the first plan in 1968; incorporating development manuals; and enacting development codes, including subdivision and flood damage prevention ordinances and a Unified Development Code (UDC).

3.4.4.1 LOW IMPACT DEVELOPMENT MANUAL

The City created a Low Impact Development (LID) manual in cooperation with the San Antonio River Authority for City use⁸. This manual serves to improve surface water quality conditions throughout the watershed by applying stormwater management strategies that replicate predevelopment conditions and natural hydrologic processes and reduce urban development runoff patterns.

3.4.4.2 UNIFIED DEVELOPMENT CODE (UDC)

The City adopted the UDC in July 2021 and updated the UDC in February 2022. The goals of the UDC are to promote the health, safety, and general welfare of the City. The codes consolidate the regulations related to land use and development, which makes the City's regulations and requirements more accessible for the public. An additional purpose of the code is to preserve the City's historic architecture and culture and ensure stewardship of the natural resources.

3.4.4.3 ENGINEERING DESIGN MANUAL (EDM)

The purpose of the EDM is to form standard principles and practices for design and construction within the City. A design engineer is responsible for following the EDM, as well as the UDC, throughout design and construction processes.

3.4.4.4 FUTURE PLANS

City staff continue to manage stormwater through careful development and intentional water quality protection measures. Updates to drainage master plans, development manuals, and development codes will be completed, as needed, in the future.

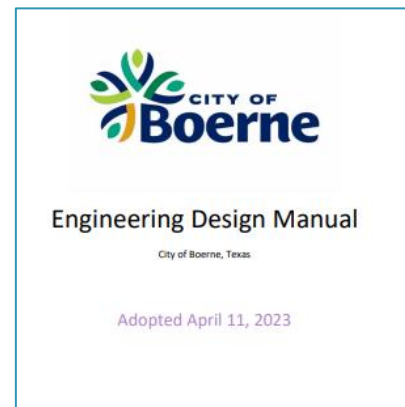


Figure 10. Boerne's Engineering Design Manual

3.5 Assessment and Visioning Workshop

"Building the Vision" is the first step in the One Water integrated planning process, as illustrated in Figure 11. This initial phase involves defining a clear, collective vision that aligns with the community's values and aspirations for water management. Engaging stakeholders, including residents, businesses, and local organizations, is crucial to ensuring the vision reflects diverse perspectives and needs. Establishing this shared vision sets the foundation for the entire planning process, guiding subsequent steps such as goal setting, strategy development, and action planning. By prioritizing a cohesive and inclusive vision, the One Water approach aims to create a sustainable, resilient, and equitable water future for the City.

⁸ https://www.ci.boerne.tx.us/DocumentCenter/View/8751/Boerne-Edition_SARA-LID-Manual_Final_with-Apendix?bidId=



Figure 11. One Water planning

The first step, “Building the Vision,” should be considered in the context of partnerships, policies, and practices (3Ps) to inform the vision, goals, strategies, and ultimately actions⁹. Framing the discussion around the 3Ps, as shown on Figure 12, avoids falling back into the traditional silos of water types such as water, wastewater, reclaimed water, and stormwater, when all these water types represent the same One Water.

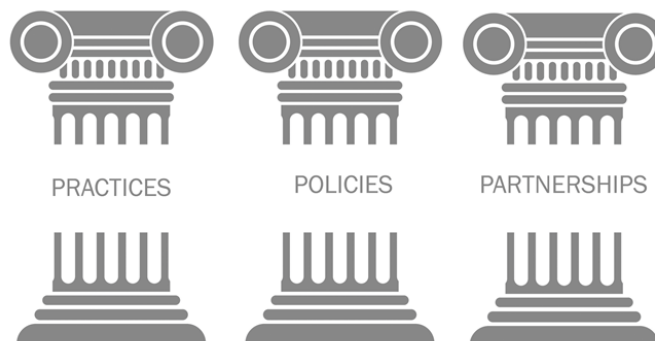


Figure 12. Three key factors influencing holistic planning (WRF Project #4974)

A half-day One Water Roadmap Assessment and Visioning Workshop was held on June 21, 2024, with the City’s management team representing the City’s Planning, Communications, Utilities, Engineering and Mobility, Environmental Compliance and Program Management departments, as shown in the photo on Figure 9.

⁹ WRF Project #4969



Figure 13. One Water Roadmap Assessment and Visioning Workshop

In advance of the workshop, attendees responded to the One Water Cities Self-Assessment (WRF Project #4969), and the One Water maturity results are shown in Figure 14 and Figure 15.



Figure 14. One Water cities self-assessment framework: Maturity levels and action categories (WRF Project #4969, Figure 3-2)

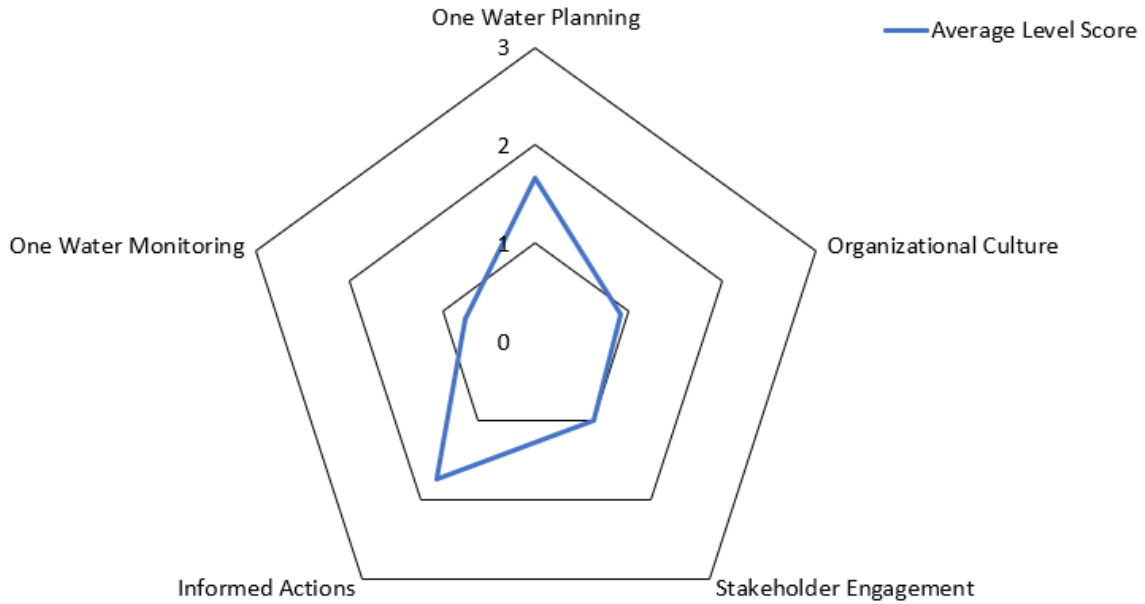


Figure 15. One Water cities self-assessment maturity levels and action category: City results

These results indicate that the City, overall, is aware of One Water and progressing in One Water Planning and Informed Action, as evident by this One Water Roadmap. Generally, the City is classified as an Onboarding City (Level 1).

During the workshop, interactive online polls were used to gather input on what One Water means for Boerne. A word cloud was developed using the results from each poll to identify common vision and goals between City management, as shown in Figure 16 and Figure 17, respectively.



Figure 16. Visioning word cloud



Figure 17. Goals word cloud

Key themes that emerged from the Visioning word cloud include "Efficient," "Connected," "Planning," and "Conservation," highlighting a focus on resourcefulness and sustainability. Terms like "Forethought," "Educational," and "Resourceful" underscore the importance of proactive strategies and community education. The word cloud also emphasizes goals such as "Protection," "Resiliency," and "Reuse," indicating a commitment to safeguarding resources and enhancing resilience. Overall, the word cloud reflects a holistic and forward-thinking approach to water management, aligning with the One Water vision of an integrated, sustainable, and equitable water future.

In the Goals word cloud, the prominent themes include "Community," "Communication," and "Collaboration," indicating a strong emphasis on engaging and working with the community to achieve shared goals. Words like "Water," "Reclaimed," and "Expanding" highlight the focus on water resources, particularly the importance of expanding the use of reclaimed water. Other significant themes such as "Balance," "Support," and "Public" suggest a need for equitable water management and strong public backing. The presence of terms like "Protection," "Quality," and "Conservation" underscores the commitment to protecting water resources and ensuring high quality. Overall, the word cloud reflects a cohesive strategy centered around community involvement, effective communication, and sustainable water management policies and practices.

The visioning process established a revised vision and goals for the One Water Roadmap.

4 Gap Assessment Results

One Water opportunities to achieve the 2018 Master Plan¹⁰ Action Recommendations were discussed during the One Water Roadmap Assessment and Visioning Workshop. The 2018 Master Plan identified 26 action recommendations in Goal 1 (Accommodate anticipated community growth through smart growth principles and strategic investments in utilities while protecting the natural resources and small-town character of Boerne). The City has already achieved and / or their effort is ongoing for 77 percent of the identified actions recommendations. Table 1 provides these Action Recommendations and the current progress, showing a “checkmark” for completed, a letter “O” for ongoing, and a letter “A” for actions that need attention. This table can be adapted for use as a communication tool to share progress with the community and other stakeholders. The remaining six actions that need attention are included in the One Water actions in Section 5 of this One Water Roadmap, such that this Roadmap serves as an umbrella document leveraging existing planning efforts and creating a comprehensive list of City actions.

¹⁰ <https://www.ci.boerne.tx.us/1839/Boerne-Master-Plan>. Accessed July 16, 2024.

Action #	Action Recommendation	Initiation Time Frame			Involved entities	Action Type(s)
		Short term (1-2 yrs.)	Mid term (3-10 yrs.)	Long term (10+ yrs.)		
Goal 1: Accommodate anticipated community growth through smart growth principles and strategic investments in utilities while protecting the natural resources and small-town character of Boerne.						
1.1.1	Proactively evaluate and implement Boerne's growth program in the context of smart growth principles.	■			City	Policy
1.1.2	Emphasize community growth strategies that maximize the use of existing City infrastructure.	■			City	Policy
1.1.3	Continue to evaluate opportunities for potential strategic annexation as part of the City's growth and expansion strategy.			■	City	Policy / Study
1.1.4	Re-evaluate the City's Capital Improvement Program (CIP) and update it to incorporate consistent findings related to the Master Plan and changing priorities.	■			City	Policy / Study
1.1.5	Ensure that all departments are open and transparent about their development related data.			■	City	Policy / Operational Change
1.1.6	Refine the fiscal impact analysis process to potentially include a tool used in the assessment of property annexation and planned unit development proposals.	■			City	Policy / Operational Change
1.2.1	Coordinate with the San Antonio River Authority (SARA) and Guadalupe-Blanco River Authority (GBRA) partners to implement identified improvements on the Cibolo Creek watershed and other important drainageways in the Boerne area.		■		City / SARA / Other partners	Study / Financial Investment
1.2.2	Evaluate potential modifications to the City's drainage criteria manual and regulations stemming from recent updates to the frequency and intensity of rainfall events.		■		City	Regulation
1.2.3	Consider development of a comprehensive Drainage Master Plan for Boerne.		■		City	Study
1.3.1	Consider expansion of the 2015 Water Resources Plan to develop a Comprehensive Water/Wastewater Master Plan to help identify long-term water and wastewater infrastructure needs and timing of these projects.		■		City	Study
1.3.2	Evaluate and anticipate needed extensions of the water and wastewater Certificate of Convenience and Necessity (CCN) boundaries concurrent with the City's growth and annexation program.			■	City	Policy / Financial Investment
1.3.3	Continue to monitor and communicate annual water demand to ensure the City does not exceed its reserved long-term water supply.			■	City	Operational Change
1.3.4	Continue to weigh the costs versus benefits and long-term effectiveness of allowing Kendall West Utility (KWU) and other utility suppliers to serve in-City utility needs before expanding to additional areas.			■	City	Policy / Operational Change

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Action #	Action Recommendation	Initiation Time Frame			Involved entities	Action Type(s)
		Short term (1-2 yrs.)	Mid term (3-10 yrs.)	Long term (10+ yrs.)		
1.3.5	Continue to evaluate and anticipate the need for expansion of the City's water treatment to accommodate population growth projections.		■		City	Financial Investment
1.3.6	Continue to evaluate and anticipate the need for expansion of the City's Wastewater Treatment and Recycling Center (WWTRC) to accommodate population growth projections.		■		City	Financial Investment
1.3.7	Continue to identify opportunities to extend the reclaimed water supply being supplied to new private development.			■	City	Financial Investment
1.3.8	Periodically evaluate and modify necessary utility rates and impact fees to ensure economically sustainable continuation of operations.			■	City	Regulation
1.3.9	Continue to evaluate the costs versus benefits of providing public utility infrastructure to areas outside the City limits.			■	City	Policy / Study
1.3.10	Evaluate the feasibility of a future partnership or consolidation of infrastructure services in the Boerne area.			■	City	Policy
1.3.11	Determine present conditions of downtown/ North Main utility infrastructure; create a program for improvements to allow for economic development opportunities.	■			City	Study / Financial Investment
1.4.1	Consider and evaluate environmentally sensitive building and low impact development (LID) practices as part of new public and private development.	■			City / Development Community	Policy / Financial Investment
1.4.2	Continue to promote and foster increased use of water conservation practices throughout the City.			■	City / Development Community	Policy / Regulation
1.4.3	Continue to implement the urban waterfowl management recommendations as part of a broader effort to improve water quality.			■	City / SARA	Operational Change
1.4.4	Evaluate opportunities to improve riparian buffers on City-owned property.	■			City	Operational Change / Financial Investment
1.4.5	Consider and evaluate modifications to the City's development ordinances to establish riparian buffers and low impact development as part of new development in sensitive areas.	■			City / Development Community	Regulation
1.4.6	Consider and evaluate opportunities to modify the City's zoning, subdivision, and other development regulations to encourage or incentivize further protection of sensitive natural resources (e.g., stream or riparian corridors, steep slopes, mature trees, etc.) as part of new development.	■			City	Regulation

Table 2. Progress on the 2018 Master Plan action recommendations (Half, 2018)

5 Boerne One Water Roadmap

The City of Boerne One Water Roadmap entails the following vision, goals, strategies, and actions, forming a comprehensive and integrated approach to water management. Together, these elements create a cohesive and actionable roadmap that guides the City's efforts in managing all its water resources sustainably.

5.1 One Water Vision

The One Water vision articulates the long-term aspirations for a sustainable and resilient water future, setting the stage for all subsequent planning and implementation efforts. Three vision statements are provided below. The original One Water vision was developed through a stakeholder engagement process and was incorporated into the Resolution No. 2023-R84. A revised and abbreviated version of the One Water vision was subsequently developed based on input from the City leadership assessment and visioning workshop described in Section 3.5.

Original One Water Vision (*Adopted in Resolution No. 2023-R84*)

“One Water” is defined as an integrated approach to water management that views all water in our community—drinking water, wastewater, stormwater, greywater—as a single resource to be managed holistically and sustainably, for the benefit of strong economies, vibrant communities, and healthy environments.

Revised One Water Vision

One Water is an integrated and comprehensive approach to water management that views all water within our community—drinking water, wastewater, stormwater, and greywater—as a connected and finite resource. This approach emphasizes forethought and planning to manage water sustainably and efficiently, ensuring the protection of supply and quality for future generations. By fostering education and knowledge, we aim to promote conservation and reuse, enhancing the resiliency and vibrancy of our communities. Through effective regulation and enforcement, we strive to balance supply and demand, recognizing water as an essential and resourceful element for strong economies and healthy environments.

Abbreviated version of Revised One Water Vision

One Water is a comprehensive, efficient, and sustainable approach to managing all water resources as a connected and finite whole, ensuring resilient, vibrant communities and healthy environments.

Goals, strategies, and actions were developed, as described in Section 5.2, to translate this vision into specific actionable targets.

5.2 One Water Goals, Strategies & Actions

One Water goals translate the vision in Section 5.1 into specific, actionable targets, addressing key areas such as water quality, conservation, infrastructure improvement, and community engagement. Strategies provide a detailed blueprint on how to achieve these goals, leveraging best practices, innovative technologies, and collaborative efforts among stakeholders. These strategies ensure that resources are used efficiently and that actions are aligned with the overall vision. Actions are the concrete steps and initiatives that bring the strategies to life, ranging from policy changes and infrastructure projects to public education campaigns and stakeholder partnerships.

The outcome of the workshop was the establishment of the following One Water goals:

1. Expand Reclaimed Water Use and Promote Conservation
2. Enhance Public Education and Community Engagement
3. Protect Water Quality and Stream Health
4. Improve Communication and Collaboration
5. Ensure Balanced and Inclusive Water Management

Each goal includes a series of strategies and example actions. Some of these strategies and example actions are synthesized from the City’s previous planning efforts such that Table 3 represents a comprehensive and holistic One Water Roadmap.

Table 3. City of Boerne One Water Roadmap – Goals, strategies, and actions

Strategies	Current Practices / Example Actions
Goal 1: Expand Reclaimed Water Use and Promote Conservation	
Increase the use of reclaimed water and advocate for increased water conservation practices.	
1.1. Promote enhanced water conservation.	1.1.1. Provide rainwater harvesting and irrigation system education supporting the \$150 rainwater harvesting incentive and \$150 irrigation consultation rebate. 1.1.2. Monitor adoption of irrigation system sensors for rain and freeze conditions supporting the \$100 rebate. 1.1.3. Develop list of native drought-tolerant and climate-resilient plants and offer plants at an annual Earth Day event. 1.1.4. Adopt rebate or incentive for climate-resilient landscaping.
1.2. Provide education, encouragement, and enforcement to support implementation of LID.	1.2.1. Encourage voluntary compliance of LID by offering resources, recognition (award program), or assistance. 1.2.2. Offer an in-person and online LID Maintenance Certification Program. 1.2.3. Enforce LID by applying a penalty or corrective action for non-compliance (e.g., fee). 1.2.4. Review redevelopment of existing properties to potentially lower threshold of redevelopment guidance / ordinances.
1.3. Increase use of reclaimed water for irrigation.	1.3.1. Require / encourage new developments, where infrastructure and capacity are available, to connect to the reclaimed water system. 1.3.2. Apply for additional state, federal, or private grants to fund the expansion of reclaimed water infrastructure and related programs.
1.4. Monitor water usage related to the Conservation and Emergency Drought Management Ordinance.	1.4.1. Implement a system for tracking water usage during a water shortage to understand compliance with the restrictions (e.g., smart meters, water billing records, or field inspections). 1.4.2. Establish enforcement mechanisms (e.g., warnings and/or fines) for non-compliance with water use restrictions. Consider exemptions for hospitals, essential businesses, or vulnerable populations.

Strategies	Current Practices / Example Actions
Goal 2: Enhance Public Education and Community Engagement	
Develop robust public education programs and foster community support and engagement for water management initiatives.	
2.1. Develop a One Water education program.	2.1.1. Identify the target audiences (e.g., students, customers, businesses, policymakers, and greater community). 2.1.2. Consolidate list of rebates, incentives, and resources the City provides for customers. 2.1.3. Develop educational content, for example, create a video to educate anyone living within the greater community and watershed on how to reduce water use and protect the watershed. 2.1.4. Share the One Water education program through a series of community presentations and workshops.
2.2. Increase community support and engagement.	2.2.1. Define preferred engagement levels with customers (e.g., HOAs) vs. community (e.g., Kendall County, Cibolo Center for Conservation, Chamber of Commerce) vs. stakeholders (e.g., Cibolo Center for Conservation, Hill Country Alliance, The Mitchell Foundation, Sierra Club, developers). 2.2.2. Engage with customers on all projects early and often. Depending on the project provide opportunity for weekly and or monthly meetings with customers. 2.2.3. Encourage customer involvement during city council and committee meetings. 2.2.4. Continue customer survey through City Manager’s Office every 2 years. Consider incorporating additional questions specific to awareness and engagement of One Water initiatives. 2.2.5. Continue social media engagement and provide content and monthly updates related to One Water initiatives. 2.2.6. Distribute water-saving kits or contests, such as conditioners, timers, sensors, to encourage conservation.
2.3. Elevate understanding of City of Boerne’s One Water progress through annual events.	2.3.1. Create a City of Boerne One Water campaign and use existing events to share progress such as the Floodplain Administrator of the Year Award, WCP/DCP Risk and Resiliency Assessments, TWDB flyers, Earth Day, Water Day, Education Table at City Events, and Brew City of Texas.
Goal 3: Protect Water Quality and Stream Health	
Implement measures to safeguard water quality and protect streams from pollution and degradation.	
3.1. Incentivize adoption of water conditioners.	3.1.1. Adopt rebate or incentive for installation of water conditioners. 3.1.2. Elevate awareness and provide education to support conversion from water softeners to water conditioners.

Strategies	Current Practices / Example Actions
3.2. Implement a Nutrient Management Program.	3.2.1. Evaluate cost and benefits of improving Esser WWTP with nutrient removal or diverting flows to Old San Antonio Road Wastewater Treatment and Recycling Center (WWTRC). 3.2.2. Review wastewater treatment plant expansion plans. 3.2.3. Consider adoption of fertilizer and water softening ordinances. 3.2.4. Consider projects, program, and policies to improve Cibolo Creek stream health. 3.2.5. Septic tank regulation analysis. Coordinate with Kendall County to limit septic tank installation
3.3. Improve watershed protection through Wildlife Management.	3.3.1. Investigate waterfowl contribution to water quality. 3.3.2. Collaborate with TxDOT to implement solutions (e.g., installing netting at bridges was not approved).
3.4. Continue Floodplain Management Program.	3.4.1. Increase City's Community Rating System (CRS), voluntary incentive program, rating. 3.4.2. Consider revisions, if needed, to Drainageway Protection Zones.
3.5. Reduce stormwater runoff.	3.5.1. Consider projects to reduce stormwater contamination into groundwater. 3.5.2. Implement stormwater management BMPs (e.g., bioswales, constructed wetlands). 3.5.3. Incentivize private landowners along Cibolo Creek to repair riparian corridors in collaboration with the Cibolo Center for Conservation and Texas Agri-Life. Exotic and invasive plant species impact the stability of the banks.
3.6. Subdivision/development regulations.	3.6.1. Consider additional water quality protections, development controls, as needed.
Goal 4: Improve Communication and Collaboration	
Establish effective communication strategies to share achievements and enhance collaboration among stakeholders for multi-benefit projects.	
4.1. Strengthen communication, coordination, and collaboration within and between the City of Boerne, GBRA, SARA, SAWS, TWDB, TWC, and Region L to employ and implement integrated water management processes and to better understand each entity's regulatory and policy dynamics.	4.1.1. Schedule an annual or biannual meeting for management representatives from each of these organizations to meet and collaborate on ongoing projects, policy developments, and other initiatives to achieve Hill Country One Water goals. 4.1.2. Review and evaluate amendments to achieve multi-benefit solutions in existing contracts or permits (e.g., Canyon Lake Contract, Cow Creek Permit, and Watermaster Withdrawal Permit).

Strategies	Current Practices / Example Actions
4.2. Strengthen coordination between City departments including but not limited to Utilities, Parks and Recreation, Engineering and Mobility, Communications, and Finance.	4.2.1. Schedule an annual or biannual meeting for management representatives from each of these departments to meet and collaborate on ongoing projects, policy developments, and other initiatives to achieve Hill Country One Water goals. 4.2.2. Identify cross department programs, such as Asset Management, to facilitate coordinated approaches to achieve multi-benefit solutions. 4.2.3. Apply a One Water approach for all new City infrastructure projects (e.g., the fire station).
4.3. Engage elected officials and governing boards.	4.3.1. Provide a briefing of the One Water Roadmap to newly elected or appointed City of Boerne officials. Schedule refresher briefings on an annual basis.
Goal 5: Ensure Balanced and Inclusive Water Management	
Strive for balanced water management that includes community outreach, actionable strategies, and a clear vision for sustainable water use.	
5.1. Implement integrated watershed, stream management, water supply, and water management practices in land use planning, zoning codes, and agency operations.	5.1.1. Proactively evaluate and implement Boerne’s growth program in the context of smart growth principles (Halff, 2018). 5.1.2. Continue to evaluate opportunities for potential strategic annexation as part of the City’s growth and expansion strategy (Halff, 2018). 5.1.3. Ensure that all departments are open and transparent about their development related data (Halff, 2018). 5.1.4. Refine the fiscal impact analysis process to potentially include a tool used in the assessment of property annexation and planned unit development proposals (Halff, 2018). 5.1.5. Continue to weigh the costs versus benefits and long-term effectiveness of allowing other utility suppliers to serve in-City utility needs before expanding to additional areas (Halff, 2018).
5.2. Utilize City's existing Drought Management Plan to fund new sources of water supply and capital improvements.	5.2.1. Continue to evaluate and anticipate the need for expansion of the City’s water treatment to accommodate population growth projections (Halff, 2018) 5.2.2. Evaluate options to increase groundwater recharge via spreading or direct injection into aquifer. 5.2.3. Evaluate potable reuse opportunities.

Note

Boerne Master Plan (Halff, 2018): <https://www.ci.boerne.tx.us/1839/Boerne-Master-Plan>. Accessed July 16, 2024.

Collectively, these vision, goals, strategies, and actions create an integrated approach to water management that is both forward-thinking and grounded in the realities of current challenges. The One Water Roadmap not only addresses immediate needs but also lays the foundation for a sustainable and resilient water future, ensuring that water resources are managed in a way that benefits both current and future generations.

5.3 One Water Community Education & Outreach Program

An important component of the One Water Roadmap is a community education and outreach program. The Assessment and Visioning Workshop included a goal to identify key stakeholders, develop One Water messages, and discuss and select various tools for community outreach. Potential community outreach tools discussed included:



Figure 18. Example of community engagement, a One Water strategy

- Community focus groups
- Public workshops
- Website and social media
- Individual interviews with community leaders

In addition, protocols for communication briefings with the City, elected officials, and other identified stakeholders were established. Prioritization of next steps and key communication objectives were developed and synthesized into the One Water Community Education and Outreach Plan (Plan), included as Appendix B.

The Plan will serve as a guide for fostering community support for Boerne’s future as it relates to water management, as well as building relationships with interested stakeholders. The Plan will help increase community awareness and support of the benefits of a One Water approach through public outreach, education, and multi-media campaigns.

The Boerne community is generally unaware of the City’s progress regarding water services. By expanding community understanding of water supply challenges and regularly publicizing past, current, and future water-related projects, the community can become active partners and advocates for the implementation of One Water strategies and actions.

The Plan is a living document that can be updated to adapt to new and changing circumstances.

6 Boerne's One Water Future

Boerne's One Water Roadmap provides a vision, goals, strategies, and specific actions to guide continued and future collaboration and implementation of all water management projects, programs, and policies for the City and its watershed. City leaders, elected officials, management, staff, and the community can use the One Water Roadmap as a guide for developing, applying, and enhancing water policies, projects, and partnering decisions.

The One Water Roadmap can be used to support planning at the local, county, and regional level, in support of regional partnerships with neighboring communities and entities that help manage water resources across the Hill Country. The One Water Roadmap's identified vision, goals, and strategies will guide Boerne to better manage water and land use to address existing and future challenges.



Figure 19. With a One Water lens for Boerne's future, the community will benefit from reliable and safe water.

Appendix A: Boerne One Water Resolution

RESOLUTION NO. 2023-R84

A RESOLUTION OF THE CITY OF BOERNE, SUPPORTING INNOVATIVE ONE WATER STRATEGIES AND DIRECTING STAFF TO EXPLORE SUCH STRATEGIES IN PUBLIC AND PRIVATE DEVELOPMENT PROJECTS

WHEREAS, the City of Boerne has three primary sources for its potable water supply, including surface water from Canyon Lake and Boerne City Lake as well as groundwater from the Trinity Aquifer; and

WHEREAS, the City's water sources are vulnerable to conditions that could limit their availability including drought, reduced recharge, water quality impairments, and heightened demand on regional supplies; and

WHEREAS, without a renewed approach to water supply management, the City could face water shortages in the future; and

WHEREAS, the City of Boerne has already demonstrated its commitment to water conservation and resilience through its capital investments in the creation of retail reclaimed water distribution system, automated meter reading, water main replacement, and aggressive leak detection and repair to curb water loss; and

WHEREAS, acquiring additional water rights and supplies would be very expensive; and

WHEREAS, our region has a history of and reputation for innovative water conservation strategies that produce results, including a tradition of rainwater harvesting and public education campaigns related to groundwater recharge and water conservation; and

WHEREAS, a commitment to water conservation is only one of the necessary steps to water security and resiliency in the future; and

WHEREAS, the City has a responsibility to ensure water supplies in the future can meet demand, and to employ innovative strategies to that end, when necessary; and

WHEREAS, there is a growing suite of water infrastructure and management strategies known as "One Water" that is proving its effectiveness in several Texas communities and across the country; and

WHEREAS, "One Water" is defined as an integrated approach to water management that views all water in our community—drinking water, wastewater, stormwater, greywater—as a single resource to be managed holistically and sustainably, for the benefit of strong economies, vibrant communities, and healthy environments; and

WHEREAS, One Water strategies can include recycling wastewater to offset potable water demand, investing in green infrastructure to ensure stormwaters soak into the ground, capturing water at the building-scale through onsite rainwater harvesting systems or AC-condensate collection, and optimizing potable water supplies through efficiency and conservation; and

WHEREAS, there are a number of organizations and institutions in our region who are available to provide expertise on One Water strategies, including but not limited to the Hill Country Alliance, The Meadows Center for Water and the Environment at Texas State University, the National Wildlife Federation, the Greater Edwards Aquifer Alliance, and Texas Water Trade, as well as a growing professional community of engineers and planners versed in One Water design and implementation.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF BOERNE, TEXAS:

by action of the Boerne City Council at a duly noticed and held public meeting and as reflected in the minutes of the Council, be it resolved that the city staff shall study opportunities to deploy One Water strategies in the city, with an assessment of the costs and benefits associated with doing so. These shall include considerations for public infrastructure and facilities, as well as private developments and buildings.

PASSED and APPROVED this the 14th day of November, 2023.

APPROVED:



Mayor

ATTEST:



City Secretary

Appendix B: One Water Community Education & Outreach Plan



Community Education and Outreach Plan

One Water

September 2024

Prepared by

HDR Engineering, Inc.
4401 West Gate Blvd., Suite 400
Austin, TX 78745



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1. Purpose of a Community Education and Outreach Plan

The community and education outreach plan serves as a roadmap for community outreach, guiding the creation of public awareness materials regarding One Water initiatives and documenting actions the City of Boerne has taken that currently align with One Water principles. The community outreach plan is a proposed stakeholder engagement strategy approach, educating the public and identifying goals, action items, and recommendations for future consideration.

While public education about One Water will be at the forefront, gauging the level of public participation needed—should the city create a more formal One Water program—will be sought throughout the implementation of this project. This plan will define and guide the public education and involvement approach the team will take to:

- Purposefully involve the public throughout the process.
- Provide early, continuous access to information and perform decision-making processes in a transparent and effective manner.
- Use best practices and a range of strategies to involve and inform the public.
- Be reflective of stakeholder needs.

2. Public Education and Involvement Objectives

The primary purpose of the community education and outreach plan is to educate the public, elected officials, staff, and community leaders about managing all of the City's water resources — drinking water, reclaimed water, wastewater, and stormwater — under the concept of One Water to address present and future water needs. Building good relationships with key and interested stakeholders will result in an increased level of trust and confidence in the City's planning process.

The objectives of the public education and involvement process are to:

1. Proactively reach out to the community and educate them about One Water concepts and benefits.
2. Facilitate a collaborative process to share information and collect input.
3. Maintain transparency and keep the public updated throughout the decision-making process.
4. Provide meaningful opportunities for engagement to educate and gather input.
5. Incorporate public input in the development and refinement of One Water strategies.
6. Include measures for seeking input from and consider the needs of traditionally underserved individuals and households, as defined in Title VI of the Civil Rights Act of 1964 and other applicable civil rights/nondiscrimination laws.

3. Key Messages

Key messages are statements that engage an audience by encouraging follow-up questions and interest in the One Water concept. They are the main points of information you want your audience to hear, understand, and remember. These key messages, developed with the City staff, will assist

the project team in maintaining consistent communications throughout the One Water education campaign.

The following are examples of the high-level key messages that would be incorporated into written and spoken communication and outreach materials and will be supported with factual statements.

- The City is currently reviewing and evaluating the need to incorporate One Water strategies within the city.
- One Water is defined as a city that “holistically manages all water systems to meet the needs of all people and the environment, today and in the future,” according to the Water Research Foundation.¹
- The City’s water resources are vulnerable to conditions that could limit their availability, including drought, reduced groundwater, water quality decline, and increased population demand on regional water supplies. Without a renewed approach to water supply management, the city could face challenges in the future.
 - *Supporting facts:*
 - The City has three primary sources for its potable water supply, including surface water from Canyon Lake and Boerne City Lake, as well as groundwater from the Trinity Aquifer.
 - The urban water cycle includes stormwater, surface water, wastewater, groundwater, and recycled water.
 - The City has already demonstrated a commitment to water conservation through its capital investments in the creation of a retail reclaimed water distribution system, water main replacement, and aggressive leak detection and repair to curb water loss.
 - The City will need sustainable, cost effective, and long-term water planning solutions to meet the increasing demand for water, changing climate, and prolonged drought conditions.
- The City is committed to an open and inclusive process for stakeholders and the public.
 - *Supporting facts:*
 - The public, businesses, and other interested stakeholders will have an opportunity to learn about One Water and provide input and feedback.
 - Engagement will help inform stakeholders about the city’s water resources, current initiatives, and infrastructure issues, and it will provide the project team with a clearer understanding of stakeholder interests and ideas.
 - Stakeholders may be contacted by email, direct mail, and/or social media regarding opportunities to learn about One Water and provide feedback.
 - Various interactive solutions, such as online public meetings, will be implemented to reach the broader community.

¹ One Water Cities: Development of Guidance Documents and Assessment Metrics, 2023. Water Research Foundation Project #4969.

4. Stakeholders

Public education and involvement will encompass a full range of community interests. A comprehensive list of stakeholders will be identified and engaged to verify the city reaches and receives input from different types of stakeholder groups and individuals. A preliminary list of stakeholders include:

General and Special Interest – Members of the public and special interest groups will be engaged early and often throughout the project to allow the team to provide information and to solicit feedback in a format best suited for each group.

- Community coalition representatives.
- First responders.
- General public.
- Homeowners and neighborhood groups.
- Local and regional non-governmental organizations, e.g., visitor bureaus, economic development corporations, etc.
- Media.
- Other individuals or groups that may be interested in the project.

Local/State Government – These stakeholders will be involved early to collaborate on multi-beneficial policies, programs, and projects, and leverage economies of scale, as well as coordinate on outreach opportunities.

- All City of Boerne departments.
- Kendall County.
- Local public officials.
- State government officials.
- Surrounding communities (outside city limits).
- Texas Commission on Environmental Quality.
- Texas Department of Transportation.
- Texas Parks and Wildlife Department.

4.1 Outreach Tools and Tactics

The community education strategies and outreach tools for this project will vary. Materials designed to share information with the public will be created in a concise and easy-to-understand format and will be updated as new information is available. The following activities, outreach methods, tools, and materials are planned to be used for this project, if appropriate.

Outreach Tools and Tactics	
WEBPAGE: One Water information added to ci.boerne.tx.us, public meeting materials, photos, etc. Information may also be shared on other informational platforms.	STAKEHOLDER EMAIL UPDATES: Updates on project status, public meetings, etc. distributed to the stakeholder database.
EMAIL: Responses provided by the city staff or project team within 72 hours of receipt.	MEDIA: Provide project updates, news releases, b-roll opportunities, and support for PIO distribution.
MAPS/GRAPHICS: Utilize illustrations and maps for fact sheets, flyers, social media, and public meeting materials.	PUBLIC MEETINGS: Update the community about One Water activities/strategies via open houses or presentations, including virtual meetings.
SOCIAL MEDIA: Messaging on public meetings, project status, and updates across multiple platforms (Facebook, Twitter, NextDoor); additional focus on tags, interactions, and message sharing.	STAKEHOLDER OUTREACH: Methods could include email, mailers, door hangers, phone calls, small group presentations, newspaper advertisements, or a series of one-on-one meetings.
STAKEHOLDER DATABASE: Maintain an Excel spreadsheet mailing list database of elected and local officials, external stakeholders, and the public.	SUMMARY REPORTS: Prepare written summaries of meetings held with the public, including public meetings and individual meetings with stakeholders.

The project team (to be determined by the city) would prepare meeting materials for the City of Boerne to share and distribute, as necessary. In addition, project-related content will be provided for the city to share on its website and social media platforms as appropriate. All public-facing materials can be translated into Spanish and other languages, as needed. Prior to the public meeting(s), the project team would also provide to the city the following for review and comment:

- Meeting plan outlining the logistics, staffing, materials, and talking points.
- Draft notification letter or postcard.
- Draft newspaper ad and fact sheet pursuant to all city requirements.
- Draft materials including overview handout, possible One Water initiatives, presentation, and comment forms.
- Public-friendly content with easy-to-understand graphics to convey the project process.
- Webpage content mirroring the in-person public meetings.
- Interactive, GIS-based comment map for the public to identify issues and provide feedback.

5. Public Involvement and Outreach Methods

Receiving input from participants and incorporating it into the decision-making process is the cornerstone of a successful public involvement program. The project team proposes to plan, coordinate, and conduct stakeholder meetings for each of the outreach activities listed below. Both in-person and online comment methods will be available to engage public and private sector stakeholders and the general public.

5.1 Public Meetings

The project team will conduct public meetings in an open house format, either in-person or virtually, to educate the public and gather community comments on the One Water process. The open house format allows attendees to come-and-go at their convenience, view project materials at their own

pace, and visit one-on-one with team members with questions about the One Water concept and its benefits.

In collaboration with the City of Boerne, the project team will organize and facilitate a public open house meeting, including two identical meetings on alternative days/times, for convenience. The purpose of these meetings will be two-fold—to educate the public about the One Water concept and initiatives currently undertaken by the city, and to solicit public input about One Water goals, strategies, and actions. Comments received from the public will help shape the project’s direction and ensure that it reflects the values and priorities of the people it serves.

The project team will develop a meeting summary report after each public meeting documenting comments received.

5.2 Stakeholder Presentations

Listening to and documenting individual questions and concerns allows the team to develop a relationship built on trust by initiating an early collaborative process.

In collaboration with the City of Boerne, the project team will offer interested groups an opportunity to host a presentation by the city/project team about the One Water vision, goals, and strategies, provide input, and collaborate on multi-beneficial projects, programs, and policies. The project team will coordinate these requests for small group meetings with city staff and the interested stakeholder parties. The project team will also develop meeting materials for review by the city and provide a project representative to document proceedings for these small group meetings.

5.3 Webpage

The project webpage will provide direct access to important project information. Providing a space that is available to stakeholders allows for a more involved and informed community. The project team will provide content to the City of Boerne communications staff to post to ci.boerne.tx.us. The webpage will house One Water information including an overview of the One Water concept, vision and goals, dates, times, and locations of public meetings, progress updates, fact sheets, and information on how to share comments. Information may also be shared on other platforms.

6. Information and Notification Methods

Obtaining input from participants is the cornerstone of a successful public involvement program. Multiple opportunities will be presented to stakeholders to provide feedback throughout the development of the project, including but not limited to public meetings, individual stakeholder meetings, surveys, and/or online public meetings/webinars.

6.1 Email

It is important to communicate with stakeholders in a consistent manner and provide them an opportunity to stay engaged throughout the process. As such, the project team will develop standard responses for common questions and provide them to city staff for use in email responses. The project team will prepare email content for city staff to distribute prior to open house meetings and other outreach opportunities, as well as to share information about the progress of the project. The updates will be emailed to contacts identified in the stakeholder database.

6.2 Stakeholder Database

The project team will create a database of stakeholders, including residents, elected and local officials, community and civic organizations, businesses, special interest groups, and other interested parties. The database will be maintained throughout the process as new stakeholders are identified and will serve as the project mailing list.

6.3 Media Relations

The City of Boerne Communications Department will serve as the official project spokespersons and will manage any media inquiries related to the One Water vision, goals, and strategies, as well as any projects, programs, and policies that are the result. The project team, with input from the city, will aid with content creation—including public meeting news releases, strategy, talking points, and media responses, as requested.

7. Preliminary Timeline

Implementing this community outreach plan will be a combined effort between the City of Boerne and the project team. A proposed timeline follows:

Activity	Schedule*
Prepare Materials and Notices for Public Meetings	TBD
Stakeholder/One-on-One Coordination Meetings	TBD
Public Meetings	TBD
Meeting Summary Reports	TBD

*This timeline is yet to be determined.

8. Evaluation

To verify a high level of public engagement is achieved in the most effective and efficient manner, the project team will monitor and measure the effectiveness of the public involvement effort. The project team will analyze a set of key success indicators to determine the effectiveness of the information dissemination effort.

The outreach process may be evaluated through the following metrics:

- **Meetings:** Document the number of participants at meetings and compare them to the average number of participants at other City of Boerne-initiated public meetings.
- **Web:** Evaluate/document the number of web hits and review web analytics to determine if there was an uptick in the number of web views and screen time on project pages on ci.boerne.tx.us.
- **Surveys:** Review and evaluate results of surveys to find out individuals' thoughts on the participation process, ease of commenting, value of information obtained, and more.

- **Social Media:** Monitor/document social media statistics after the public meeting and/or outreach activity to see if project mentions, likes, shares, retweets, or hashtags increase, as well as review the general tone of message (positive, neutral, negative).
- **Comments:** Compare the number and types of comments received against goals.

Modifications to this plan will be considered, as needed, to achieve the objectives of this plan.

9. Protocols

9.1 Media Request Protocol

The media may seek information from multiple sources. These potentially include the City of Boerne, project team members, neighborhoods, businesses, or other stakeholders within the city and surrounding area. Media requests for information internal to the project team must be immediately directed to Chris Shadrock, City of Boerne communications director, at cshadrock@boerne-tx.gov.

Approval Process for Communication Products – Any communication product (i.e., fact sheet, news releases) created by the project team must go through the following approval process:

- Internal QA/QC review with City of Boerne staff (names/titles).
- Concurrent review by _____ (name/title).
- PowerPoint presentations must be reviewed by _____ (name/title).

9.2 City of Boerne Branding

All materials created will be within current City of Boerne brand guidelines.

10. Project Team

Primary Project Contacts

To be determined as the City of Boerne determines staff assignments.

Reminder: This community education and outreach plan is a living document that is subject to change, based on the City of Boerne and public needs. The plan may be updated at any time to add, revise, or remove objectives, stakeholders, strategies, or methods as needed to adapt to new and changing circumstances.

Appendix C: Boerne's Water Supply and Reclaimed Water Sources

This appendix summarizes the City's water supply and reclaimed water sources.

Table C-1 City of Boerne traditional water supply sources

Supply	Contractual/ Permitted	Current Allocation	Firm Yield	Max Day Prod. Capacity
Canyon lake (GBRA)	3,611	2,125	3,611	3.22
Trinity Aquifer	1,850	1,850	200/1,110	1.74
Boerne City Lake	833	833	833	1.3
Total Potable	6,294	4,808	4,644/ 5,554	6.26

The City's potable sources are supplemented by the City's reclaimed water system. The newest source of water reduces demand on the potable system by providing a non-potable source of water for residential outdoor watering and commercial uses.

There have been two water supply and demand planning studies performed over the last couple of years, as mentioned in Section 3.1. Figure C-1 is the most recent set of supply and demand projections for the next 15 years. Based on the projected supplies, there is enough to meet annual demands based on the assumptions used in the analysis. An analysis was also performed to determine the City's ability to meet projected increasing peak demands. Whereas the City has the ability to meet annual demands through the upcoming planning period, there is a point at which their ability to meet peak demand exceeds their supply capacity.

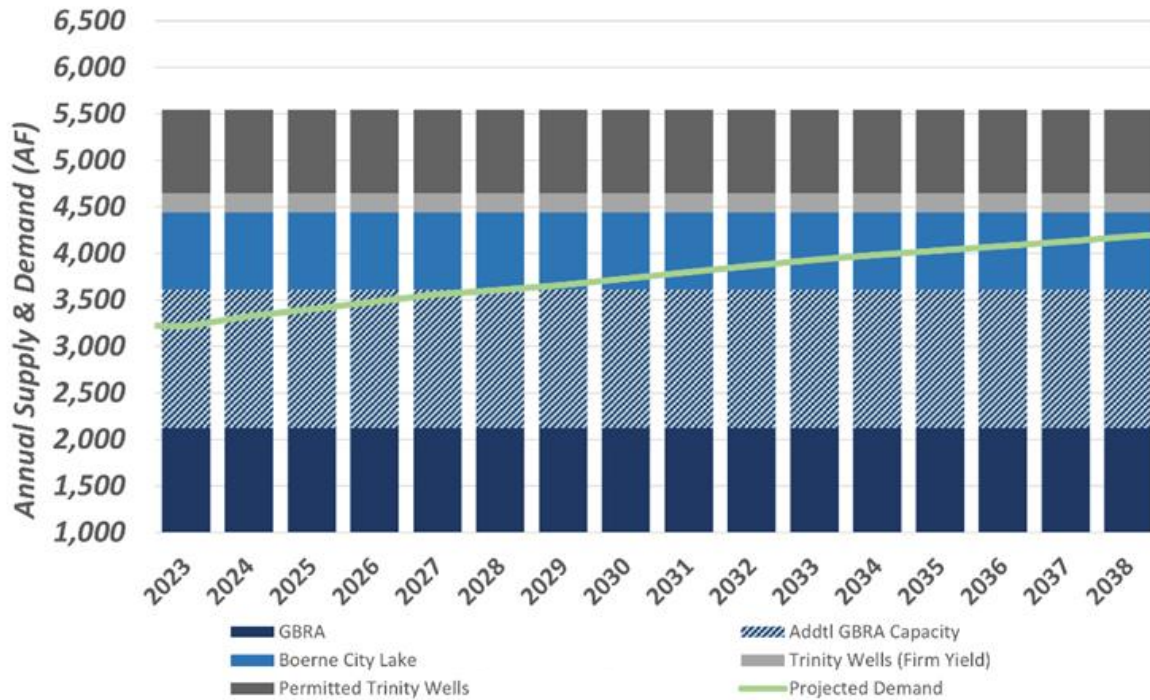


Figure C-1. Firm yield of City water supply sources and future demand projections

Future plans for meeting water supply and demand projections are to continue implementing the City’s water conservation plan and watering restrictions, manage the City’s exiting water supplies, and expand the City’s treatment capacity at Boerne City Lake to meet growing peak demands in the lates 2020s and early 2030s.

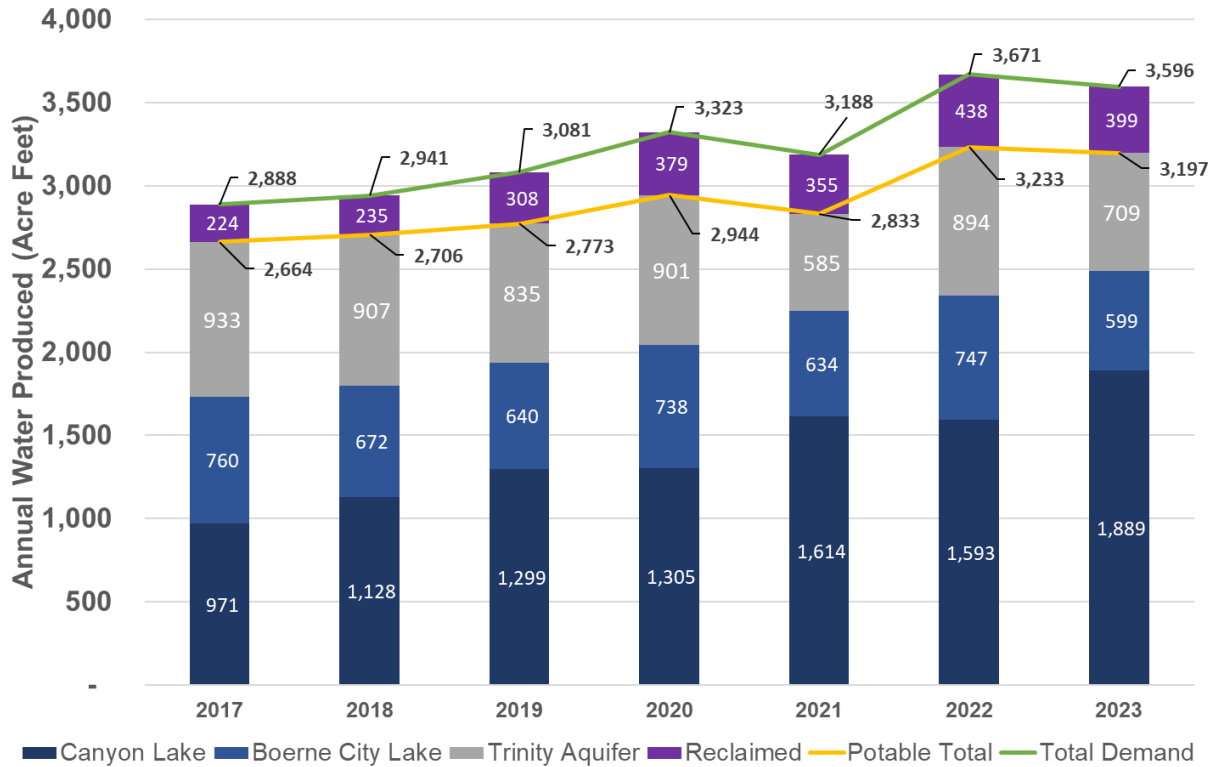


Figure C-2. Annual production of traditional water supply sources and reclaimed supply

Reclaimed Water Supply

Continued growth in reclaimed water customers over the last six years. As new developments continue to expand, demand on the reclaimed water program will continue to increase. Figure C-3 shows the growth in reclaimed water customers and increase in monthly demand. Since demand is primarily driven by drier weather conditions, swings in demand will be seen on a year-to-year basis

with the overall base usage increasing. As the City's overall potable demand grows over time, more reclaimed water will be become available to meet growing customer demands.

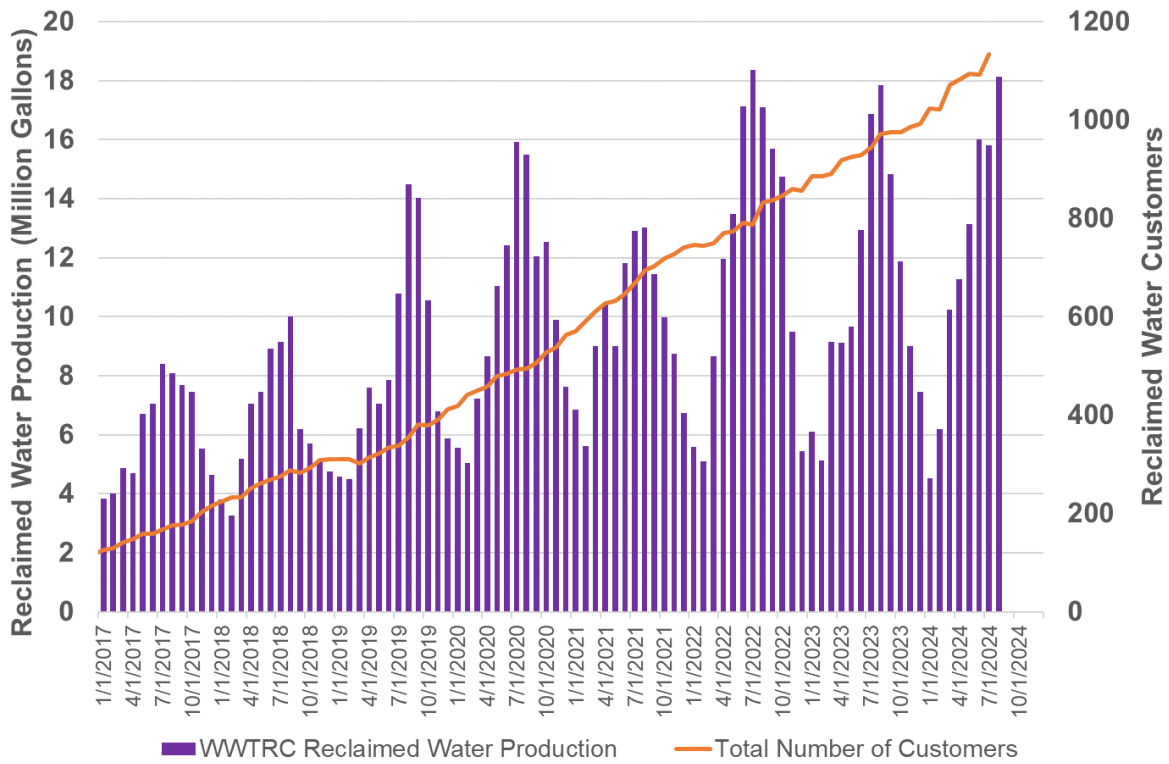


Figure C-3. Reclaimed Water Production