



**WASHINGTON COUNTY REGIONAL
REUSE SYSTEM: PLANNING**

February 27, 2023

Washington County Water Conservancy District
533 E. Waterworks Dr., St. George, UT 84770

Morgan Drake, Project Manager
533 E. Waterworks Dr., St. George, UT 84770
morgan@wcvcd.org
435-673-3617

Prepared by:
Stantec/Bowen Collins & Associates

Table of Contents

TABLE OF CONTENTS	II
ACRONYMS / ABBREVIATIONS	III
TECHNICAL PROPOSAL AND EVALUATION CRITERIA	T-1
Executive Summary	T-1
Project Location	T-2
Project Description.....	T-2
Applicant Category	T-2
Eligibility of Applicant.....	T-2
Goals	T-4
Approach	T-4
Responses to Evaluation Criteria	T-6
Evaluation Criterion 1—Project Planning and Analysis.....	T-6
Evaluation Criterion 2— Stretching Water Supplies	T-15
Evaluation Criterion 3— Environment and Water Quality.....	T-17
Evaluation Criterion 4—Department of the Interior Priorities	T-18
Evaluation Criterion 5—Watershed Perspective and Stakeholder Involvement.....	T-20
PROJECT BUDGET	B-1
Funding Plan	B-1
Budget Proposal	B-1
Budget Narrative	B-2
Letters of Funding Commitment.....	B-2
PERMITS, LETTERS, AND STATEMENTS	O-1
Required Permits or Approvals.....	O-1
Official Resolutions	O-1
Letters of Support.....	O-1
Overlap or Duplication of Effort Statement.....	O-2
Uniform Audit Reporting Statement.....	O-2
Conflict of Interest Disclosure Statement	O-2

Table of Tables

Table 1. Washington County, Utah Water Supplies	T-9
Table 2. Projected Potable and Secondary Irrigation Water Supply Needs	T-9
Table 3. Potential Uses of Reuse Water.....	T-11
Table 4. Reuse Source Water Facilities	T-11
Table 5. Reuse Strategies to be Considered in Feasibility Study	T-12
Table 6. Potential Advanced Water Treatment Technologies	T-13
Table 7. Washington County Regional Reuse System Projects	T-14
Table 8. Summary of Non-Federal and Federal Funding Sources.....	B-2
Table 9. Total Project Cost Table	B-2
Table 10. Summary of Permitting Requirements for the Regional Reuse System.....	O-1

Table of Figures

Figure 1. Washington County Water Conservancy District Service Area.....	T-3
Figure 2. Virgin River Basin Features in Washington County	T-7
Figure 3. Projected Climate Change Impacts on Monthly Streamflow at Virgin River at Virgin, UT Gage.....	T-8
Figure 4. Projected Water Supply Needs under a Hotter, Drier Climate.....	T-10
Figure 5. Water Supply Benefit of Phase 1 of Regional Reuse System	T-13
Figure 6. Preliminary Schedule of Washington County Regional Reuse System Implementation	T-15
Figure 7. Existing Reliable Potable Supply for Washington County under Climate Change by 2070.....	T-19

Appendices

- Appendix A: Budget Details and Narrative Tables
- Appendix B: Letters of Support

Acronyms / Abbreviations

ACSSD	Ash Creek Special Service District
AWT	advanced water treatment
EA	Environmental Assessment
ERC	Equivalent Residential Connection
LPP	Lake Powell Pipeline
M&I	municipal and industrial
MGD	million gallons per day
Reclamation	U.S. Bureau of Reclamation
ROW	right-of-way
RWSA	Regional Water Supply Agreement
SWIP	Statewide Water Infrastructure Plan
TSWS	Toquerville Secondary Water System
WCWCD	Washington County Water Conservancy District
WRF	water reclamation facility

Technical Proposal and Evaluation Criteria

Executive Summary

Washington County Regional Reuse System
February 27, 2023
Washington County Water Conservancy District
St. George, Washington County, Utah

The Washington County Regional Reuse System will help maximize local reliable water supplies that are under increasing pressure from climate change and economic growth. A potable and secondary irrigation reuse source will be integrated into Washington County's water supply portfolio to help meet water demands. The Regional Reuse System will ultimately include multiple water treatment facilities, pipelines, and storage reservoirs to reuse approximately 47,000 acre-feet of water each year by 2050. The Washington County Water Conservancy District proposes in this application to complete design data studies, preliminary design and cost estimating activities, baseline environmental and cultural resources studies, and initiate environmental compliance and permitting. The planning and preconstruction activities proposed in this application will start after pre-award clearances are complete and end 24 months later (approximately Fall 2025). The System would not involve a Federal facility, but will involve obtaining right-of-way on Federally-managed land.

Project Location

The Regional Reuse System is located in Washington County in the southwest corner of Utah. The Regional Reuse System will provide municipal and industrial (M&I) reuse water to portions of the Washington County Water Conservancy District (WCWCD) service area. The WCWCD service area (Figure 1) encompasses all of Washington County, Utah, but WCWCD does not currently provide water to all communities within the county. In 2006 (and later updated in 2019), WCWCD adopted the Regional Water Supply Agreement (RWSA) with the following municipalities:

- St. George City
- Washington City
- Hurricane City
- Santa Clara City
- Ivins City
- La Verkin City
- Toquerville City

WCWCD acquires, constructs, and operates its water system to meet anticipated municipal demand, while the individual cities maintain their existing water infrastructure systems and fully utilize their respective municipal supplies. Reuse water supply will be delivered to RWSA municipalities within the WCWCD service area (Figure 1).

Project Description

This section describes the activities being proposed for funding under Notice of Funding Opportunity (NOFO) No. R23AS00076. For a brief description of the proposed Regional Reuse System, see the response to Question No. 3 under Subcriterion No. 1b.

APPLICANT CATEGORY

WCWCD is seeking funding for Funding Group II.

ELIGIBILITY OF APPLICANT

WCWCD is a political subdivision of the state of Utah. WCWCD is charged with conserving, developing, managing, and stabilizing water supplies within Washington County in an ongoing effort to provide a safe, sustainable water supply for current and future generations. WCWCD has the powers conferred to local districts by Utah Code Annotated § 17B-1-101 *et seq.* and to water conservancy districts by Utah Code Annotated § 17B-2a-1001 *et seq.*

The Regional Reuse System is anticipated to cost greater than \$500,000,000.

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

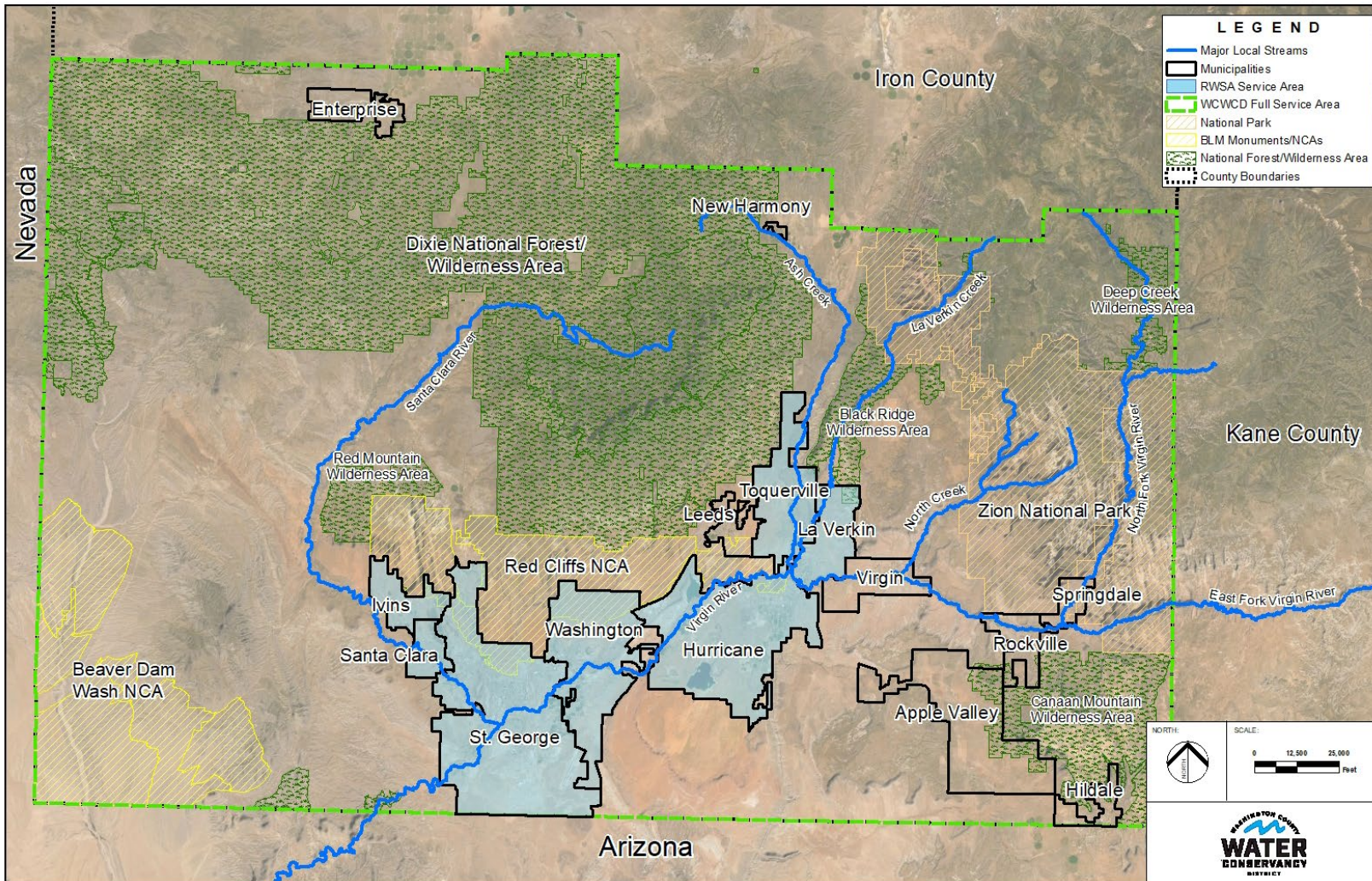


Figure 1. Washington County Water Conservancy District Service Area

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

GOALS

WCWCD proposes in this application to complete planning and pre-construction activities for a Regional Reuse System. The ultimate goal is to integrate a potable and secondary irrigation reuse source into Washington County's water supply portfolio to help meet water demand for the area's expanding economy and growing population through 2070 and beyond. Specific activities proposed in this application are as follows:

- Complete site-specific geotechnical and survey studies to gather design data
- Refine preliminary project designs and cost estimates
- Initiate environmental compliance and other related permitting activities
- Compile and/or complete baseline environmental and cultural resources studies

The development of a large-scale reuse feasibility study meeting the requirements of WTR 11-10 and WTR TRMR-128 is not proposed as an activity under this application. WCWCD is currently developing such a feasibility study for the Regional Reuse System under Funding Group II and intends to submit the study to the U.S. Bureau of Reclamation (Reclamation) for review and approval in Spring 2023. Costs to develop this project's feasibility study cannot be considered for reimbursement under this Notice of Funding Opportunity (NOFO) because those costs will be incurred prior to notification of selection.

APPROACH

The Regional Reuse System comprises multiple phases of treatment, conveyance, and storage projects, as described in Question No. 3 under Subcriterion No. 1b. The Regional Reuse System will implement potable reuse and supplement secondary irrigation systems to allow secondary water supplies to meet potable demands.

Phase 1 treatment and conveyance reuse projects include the following:

- Existing St. George Reuse Facility (SGRF) upgrade to 14 MGD
- SGRF onsite reuse pond for treatment operations (100 acre-feet)
- Ash Creek Special Service District (ACSSD) mechanical Type 1 reuse treatment facility
- Advanced water treatment (AWT) facility (21 MGD)
- Pipelines from SGRF to AWT forebay and existing Ivins Reservoir
- Pipeline from AWT forebay to New System Storage
- Pipeline from existing Confluence Park Water Reclamation Facility to Toquerville Secondary Water System (TSWS)

The activities and approach proposed under this NOFO are to complete the following planning and pre-construction studies for Phase 1 treatment and conveyance projects during the 24 months

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

after notification of award. Planning and pre-construction studies for Phase 1 reuse storage facilities have already been completed and are not proposed activities in this application.

Design Data Studies

Site-specific design data investigations for the Regional Reuse System include topographic surveys, geotechnical evaluations, and the development of facility planning reports. Topographic surveys will establish property and/or needed easement boundaries, refine facility layouts and pipeline alignments, and evaluate site civil conditions. Survey information will be used to refine pipeline profiles or hydraulic profiles for storage or treatment facilities. Geotechnical site evaluations will include investigated borings and soil assessments along proposed pipeline alignments and below treatment or storage facilities to refine pipeline excavation and bedding quantities, and site foundation design. The State of Utah Department of Environmental Quality requires a facility planning report for any new water or wastewater treatment infrastructure. This report will provide a summary of objectives, design criteria and conditions, alternative development and costs, a recommended preferred alternative, and a discussion of how this alternative will meet State requirements.

Preliminary Designs and Cost Estimates

This proposed activity will bring feasibility-level designs and cost estimates for Phase 1 treatment and conveyance projects to a pre-final design level (Class 3 or up to a 30% design level).

Environmental Compliance/Permitting

Environmental compliance for the Phase 1 treatment and conveyance projects will be initiated, and may include NEPA, Section 404 permits, Section 7 consultation, Section 106 consultation, and water quality permits. The extent and duration of environmental compliance and permitting will depend on the type and number of alternatives, and potential impacts. The needs analysis and alternatives formulation will be informed by the approved Regional Reuse System Feasibility Study. After notification of award, WCWCD will work with Reclamation to develop work plans and schedules to complete environmental compliance activities for Phase 1 projects. Early and regular engagement with Reclamation and other agencies will achieve common understanding and agreement on several key issues such as impacts analytical methods and significance criteria.

Baseline Environmental and Cultural Resources Studies

WCWCD will determine the applicability of available information and identify data gaps. Through this review, existing project data may be validated or found to be invalid, inaccurate, incomplete, or outdated. This approach will identify the data needs for the highest priority resource issues. WCWCD will coordinate with Reclamation and other agencies in reviewing existing project-specific data. It is anticipated that biological and cultural desktop and field surveys for Phase 1 projects will be identified as a high priority data gap. Costs to complete these surveys are explicitly proposed in this application. Costs to fill data gaps for other resource areas are implicit in costs proposed in this application to complete NEPA compliance.

Responses to Evaluation Criteria

EVALUATION CRITERION 1—PROJECT PLANNING AND ANALYSIS

Subcriterion No. 1a—Water Recycling Needs and Opportunities

1) Describe the problems and needs in the project area.

The Virgin River begins in southwestern Utah and ends in Lake Mead. Similar to other desert rivers, the Virgin River is characterized by large flow fluctuations (0 to 20,000 cubic feet per second or cfs) and high salinity, temperature, and turbidity. Streamflow is generally highest during spring runoff and large summer flash flood events. Summertime base flows are typically much lower and can be extremely low during dry years.

The Virgin River Basin is the only source of water supply for most of Washington County and is reaching its full developmental capacity. The primary municipal diversion is at the Quail Creek Diversion Dam (Figure 2), which pipes water to the Sand Hollow and Quail Creek off-stream reservoirs. Existing and future diversions from the Virgin River are constrained by the following:

- The Virgin River is a flashy desert stream and high flow events can fill the channel with sediment and debris. Under these conditions, WCWCD often shuts down the Quail Creek Diversion Dam to protect infrastructure. An on-stream reservoir could capture more high flows on river, but such a project is infeasible because of the presence of designated critical habitat and proximity to existing communities and Zion National Park (Figure 2).
- The naturally occurring La Verkin hot springs (Figure 2) discharges 10-12 cfs of water with approximately 10,000 milligrams per liter (mg/L) of salt into the Virgin River^{1,2}, thus rendering all downstream water unsuitable for potable use. Agricultural diversions downstream from the hot springs at the Washington Fields Diversion have a salt concentration of approximately 2,000 mg/L.
- Agricultural water at the Washington Fields Diversion cannot be diverted at the Quail Creek Diversion Dam for potable use (thereby avoiding the hot springs contamination) because of the designated critical habitat for listed fish species between the Washington Field Diversion and diversion dam (Figure 2). It is anticipated that the U.S. Fish and Wildlife service would not permit further diversions upstream from this habitat.
- Virgin River streamflow is projected to decrease under hotter, drier climate conditions³, which will decrease local supply. Figure 3 shows streamflow under baseline conditions (1950-1999), recent conditions (2000-2020), a median future climate (50th percentile), and a hotter, drier future climate (10th percentile). Recent streamflow is already trending between the projected median and hotter, drier climate in several months.

¹ U.S. Bureau of Reclamation. 1981. La Verkin Springs Unit: Concluding Report. December 1981.

² U.S. Geological Survey. 2018. Effects of Groundwater Withdrawals from the Hurricane Fault Zone on Discharge of Saline Water from Pah Tempe Springs, Washington County, Utah. SIR 2018-5040.

³ U.S. Bureau of Reclamation. 2014. Virgin River Climate Change Analysis: Statistical Analysis of Streamflow Projections. Katrina Grantz, March 26, 2014.

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

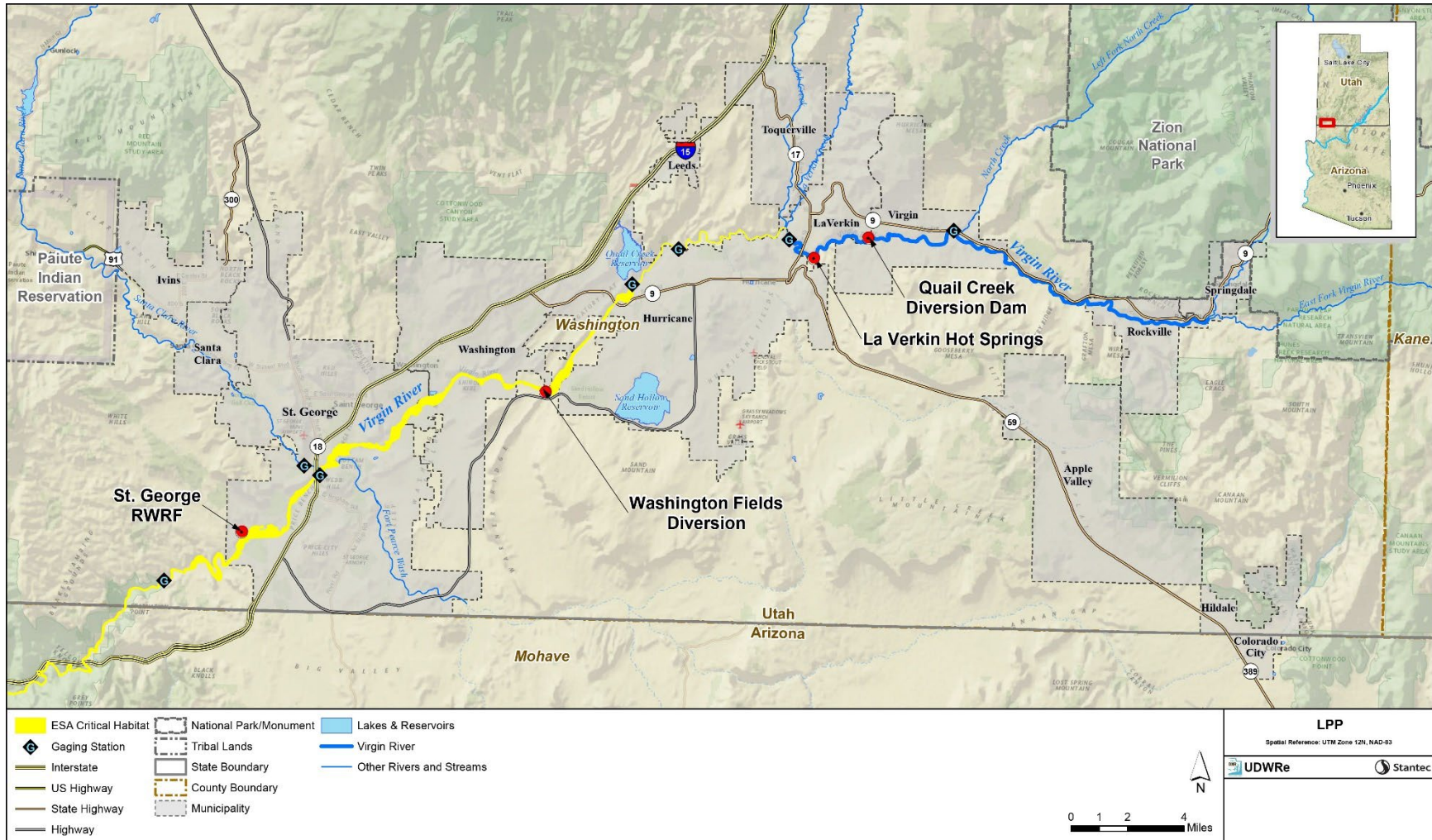


Figure 2. Virgin River Basin Features in Washington County

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

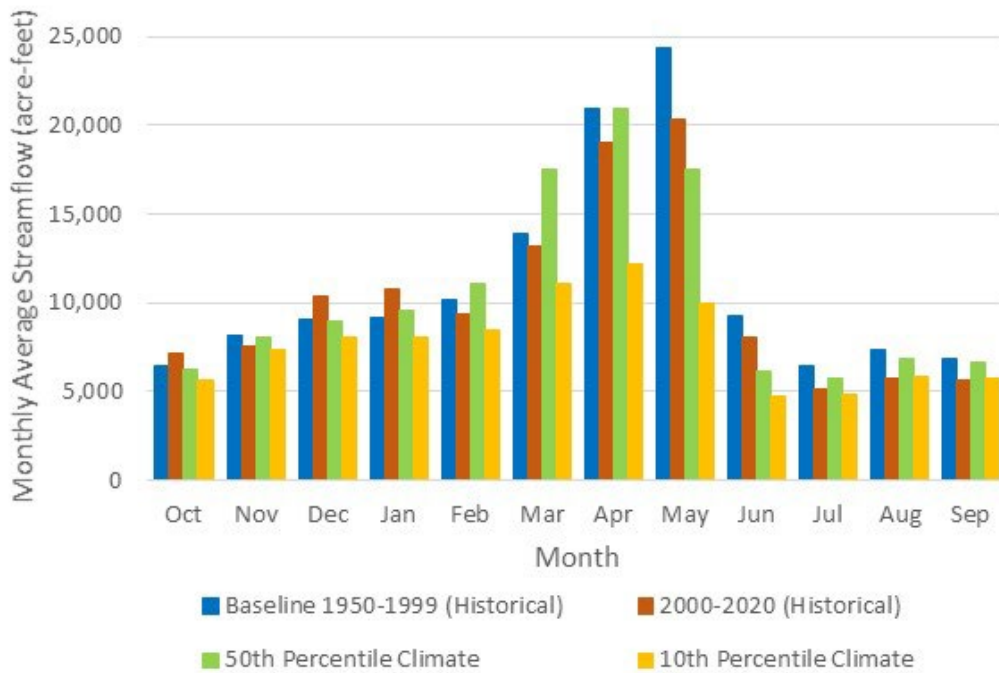


Figure 3. Projected Climate Change Impacts on Monthly Streamflow at Virgin River at Virgin, UT Gage

2) Describe the current and projected water supplies and demands in the project area; include a discussion on supply and demand imbalances.

Water Supply

Washington County water supplies include supply owned by WCWCD and the local municipalities (Table 1). The municipalities are required to fully utilize their own sources and WCWCD is responsible for developing new sources of reliable water to meet the growing demands of the county.

Water Demands

To help ensure that water providers can meet water demands, the State of Utah requires water systems to establish a “source sizing standard” to determine the volume of water that needs to be available to users (Utah Code Section 19-4-114). The source sizing standard is typically evaluated in terms of source capacity needed per “Equivalent Residential Connection” (ERC). The ERC is a water planning metric that represents the water use for a typical single family residential connection. Upon determining the amount of water used by a typical home, the water use of other user types (multi-family, commercial, institutional, industrial, etc.) can be converted into an equivalent number of single-family residences, providing a streamlined method of accounting for water users within a system.

Table 2 provides the projected M&I water supply needs for the WCWCD service area. The demand projections include two key assumptions:

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

1. WCWCD has a conservation goal to reduce water use per ERC to 0.59 acre-feet/year (approximately 24%) by the year 2070, which is reflected in the demand projections.
2. Many cities have plans to expand their secondary irrigation systems. The secondary irrigation water needs in the table are based on each individual city's respective plans for secondary irrigation water. As these plans are implemented, a portion of potable demand is shifted to secondary irrigation demand.

Table 1. Washington County, Utah Water Supplies

Supply	Existing/ Planned	Potable/ Secondary	Baseline Reliable Yield (acre-feet/year)	Hotter, Drier Climate Reliable Yield (acre-feet/year)
Municipality Supply	Existing/Planned	Potable	37,197	29,535
	Planned/Planned	Secondary	23,671	18,729
Washington County Water	Existing	Potable	38,925	11,988
		Secondary	1,048	753
Conservancy District Supplies	Planned	Potable	4,187	1,928
		Secondary	8,596	6,172
		Total	113,624	69,105

Table 2. Projected Potable and Secondary Irrigation Water Supply Needs

Year	ERCs Serviced by WCWCD	Potable Water Supply Need (acre-feet/year)	Secondary Irrigation Water Supply Need (acre-feet/year)	Total Water Supply Need (acre-feet/year)
2025	93,284	65,447	15,519	80,966
2030	109,964	68,928	16,301	85,229
2035	128,913	75,954	17,372	93,326
2040	148,086	84,408	19,665	104,073
2045	167,686	79,294	36,280	115,574
2050	188,080	86,400	40,152	126,552
2055	209,283	93,401	44,748	138,149
2060	231,420	100,931	49,378	150,309
2065	254,651	109,224	53,890	163,114
2070	277,079	117,574	57,845	175,419

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

Supply and Demand Imbalances

Figure 4 compares projected water needs for areas served by WCWCD under a high population growth and hotter, drier climate scenario. Without climate change, the gross volume of municipal supply in the WCWCD service area would grow as new municipalities and their supply portfolios are accounted for. At the same time, municipal supply is predominately groundwater and is expected to decline under a hotter, drier climate change due to reduced precipitation and streamflow recharge. These two factors create a flat net municipal supply volume over time in Figure 4. The existing and planned WCWCD potable supplies, which are predominately surface water, are projected to decrease under hotter, drier climate change. As the climate becomes hotter and drier, the WCWCD service area demand will exceed supply after 2030.

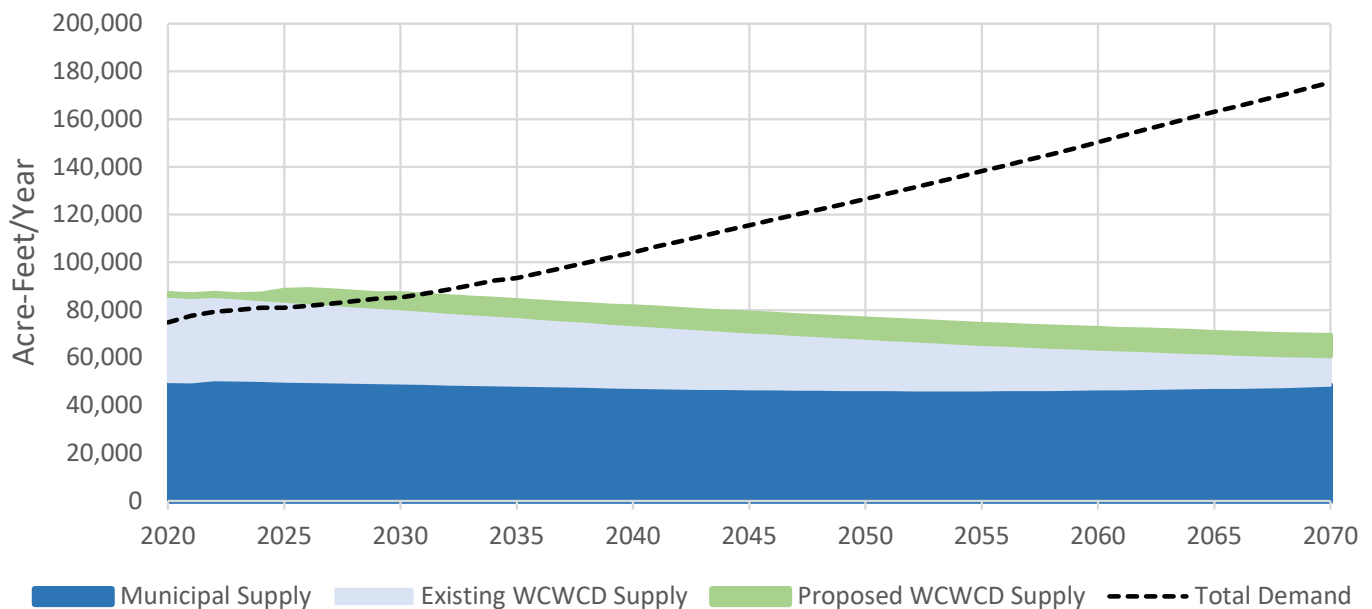


Figure 4. Projected Water Supply Needs under a Hotter, Drier Climate

3) Describe how the planning activities will investigate potential uses and markets.

The primary reuse market is the municipal and industrial sector. Reclaimed water can be treated to Type 1 effluent standards for secondary irrigation use (per Utah Administrative Code, R317-1-4), or to potable standards for the uses outlined in Table 3. For secondary irrigation uses, the following markets will be evaluated:

- Communities currently using secondary irrigation water
- Cities with a dry secondary irrigation system already in place
- Cities near an existing secondary irrigation system or potential source of secondary irrigation/reuse water.

Expected utilization of secondary irrigation water by 2070 is about 58,000 acre-feet per year. Increasing secondary irrigation supply with reuse water frees up other supplies for potable use.

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

The State of Utah does not have regulations to implement direct or indirect potable reuse. WCWCD and other stakeholders will work with the State of Utah on implementing regulations and guidance for indirect and direct potable reuse. Expected potable water demands by 2070 is about 117,000 acre-feet per year.

Table 3. Potential Uses of Reuse Water

Potential Secondary Irrigation Reuse Users	Potential Potable Reuse Users
Residential/commercial/highway landscapes	Residential/commercial potable use
Golf courses, parks, schools, cemeteries	Recreation on water supply reservoirs
Industrial cooling water	
Construction industry (e.g., dust control)	
Agricultural irrigation in exchange for surface water to potable use	

4) *Describe the source water that will be considered for the project.*

Reuse source waters are described in Table 4.

Table 4. Reuse Source Water Facilities

Source Water	Location	Current Capacity (MGD)	Current Average Flow (MGD)	Current Treatment Process	Potential Reuse Produced by 2070 (MGD)
St. George WRF	3780 Treatment Plant Rd, St. George	17	12	Secondary treatment/UV disinfection	40
ACSSD Lagoon System	1350 Sand Hollow Rd, Hurricane	3.4	2.2	Aerated/facultative lagoons	9
ACSSD Confluence Park WRF	400 W 900 N, La Verkin	1.5	0.5	Granular activated sludge/UV disinfection	3

Subcriterion No. 1b— Evaluation of Project Alternatives

1) *Describe the objectives that all alternatives will be designed to meet. What other water supply alternatives and project alternatives will be investigated?*

The proposed reuse system and other water supply alternative must achieve the following prudent planning objectives, consistent with WCWCD’s mission:

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

- 1) Securing long-term water resource reliability considering climate variability;
- 2) Diversifying the region’s water sources and delivery systems;
- 3) Improving operational dependability and flexibility; and
- 4) Providing drought resiliency.

Multiple reuse strategies will be evaluated as part of this investigation (Table 5). The various strategies will be evaluated and screened to form initial reuse alternatives. The alternatives may include components of one or more strategies, including systems that meet various combinations of potable and secondary irrigation demand using multiple treatment technologies, plant site locations, conveyance alignments, and storage reservoirs. For comparison purposes, the Lake Powell Pipeline (LPP) will be used as a non-reuse water supply alternative in this investigation (see Question No. 1 under Criterion No. 2 for a description of the LPP).

Table 5. Reuse Strategies to be Considered in Feasibility Study

Potable Reuse Strategies	Secondary Irrigation Reuse Strategies
<i>Raw Water Augmentation</i> – AWT then delivery to drinking water treatment facility and distribution system	<i>Direct Reuse Delivery</i> – Type 1 treatment then delivery to secondary demands
<i>Surface Water Augmentation</i> – AWT then delivery to potable supply reservoir (i.e., Quail Creek Reservoir)	<i>Secondary Supply Storage</i> – Type 1 treatment then delivery to secondary supply reservoir(s)
<i>Groundwater Augmentation</i> – AWT then groundwater recharge via injection or basin (i.e., Sand Hollow Reservoir)	<i>Secondary Supply Exchange</i> – Type 1 treatment then exchange with higher quality secondary irrigation supply for use in potable system

- 2) *Describe how the planning activities will develop project alternatives (water supply sources, reuse strategies, or treatment technologies) that have been or will be investigated.*

All water supply sources described in Table 4 will be used to formulate the reuse strategy from options outlined in Table 5. Criteria used to select a single or combination reuse strategy include overall potable and secondary supply benefit, costs, and implementation schedule. The selected reuse strategy will then guide the formulation (sizing and location) of conveyance features and advanced water treatment sites.

The selected reuse strategy, along with treated water quality goals, will drive the selection of treatment technologies for advanced water treatment components. WCWCD and other stakeholders will work with the State of Utah to develop the appropriate rules for multi-barrier microbial and chemical protection. This multi-barrier protection approach will guide selection of an appropriate mix of technologies outline in Table 6.

Table 6. Potential Advanced Water Treatment Technologies

Treatment Technology	Target		Treatment Mechanisms
	Microbial	Chemical	
Coagulation/ Flocculation/ Sedimentation		✓	Adsorption & Separation
Membrane Filtration	✓		Separation
Membrane Bioreactor	✓	✓	Biological, Separation
Reverse Osmosis	✓	✓	Separation
Ozonation	✓	✓	Oxidation
Granular Activated Carbon		✓	Adsorption
Biologically Active Filtration		✓	Biological
Ultraviolet Light Disinfection	✓		Photolysis
Ultraviolet – Advanced Oxidation Process	✓	✓	Photolysis & oxidation
Chemical Disinfectant	✓		Oxidation

3) *Provide a general description of the selected project, including project features, benefits, anticipated costs, and analyses conducted.*

WCWCD and other stakeholders are currently conducting feasibility level planning analyses to select the Regional Reuse System projects. At the time of this application, the selected reuse strategy for the Regional Reuse System includes surface water augmentation involving an AWT facility for potable reuse, and secondary irrigation reuse production for delivery to secondary supply reservoir. Phase 1 of this strategy would produce up to approximately 47,000 acre-feet per year by 2050 (Figure 5). This strategy would be implemented by the projects outlined in Table 7.

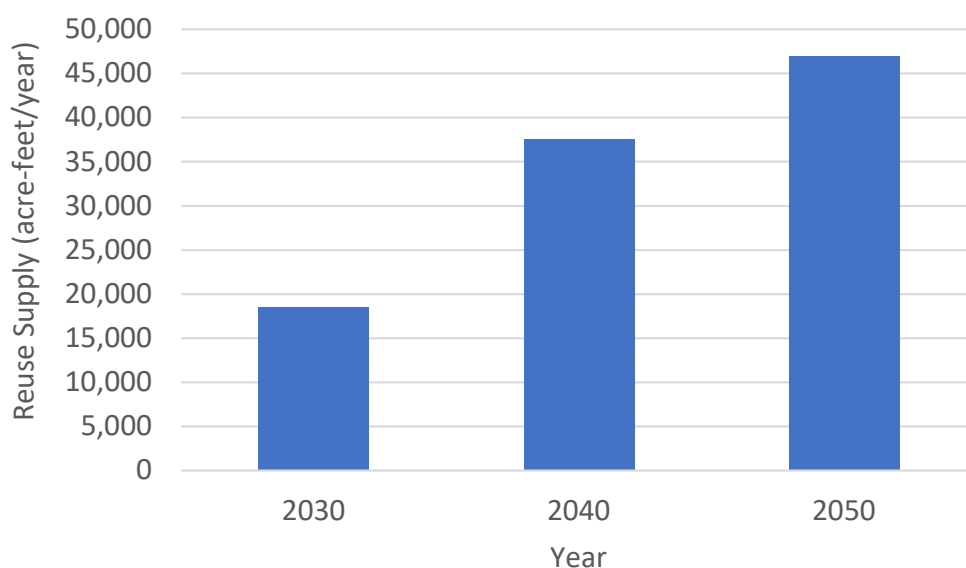


Figure 5. Water Supply Benefit of Phase 1 of Regional Reuse System

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

Table 7. Washington County Regional Reuse System Projects

Reuse Component	Project	Description	Phase/ Priority	Anticipated Capital Costs¹
Treatment	SGRF Upgrade (14 MGD)	Upgrade SGRF Type 1 technology to allow 14 MGD	Phase 1	\$8,000,000
	SGRF Onsite Reuse Pond	Construct 100 acre-foot pond for treatment operational flexibility	Phase 1	\$9,000,000
	SGRF Expansion (26 MGD)	Expand SGRF Type 1 to 40 MGD total	Phase 2	\$90,000,000
	ACSSD Type 1 Reuse (7 MGD)	Convert existing sewer lagoons to mechanical Type 1 treatment	Phase 1	\$112,000,000
	ACSSD Type 1 Reuse Expansion (2 MGD)	Expand ACSSD Type 1 facility to 9 MGD total	Phase 2	\$12,000,000
	Advanced Water Treatment (21 MGD)	Treat SGRF and ACSSD Type 1 water for indirect potable reuse	Phase 1	\$400,000,000
	Advanced Water Treatment Expansion (28 MGD)	Expand AWT facility to 49 MGD total	Phase 2	\$500,000,000
Conveyance	SGRF to AWT Forebay Pipeline	Convey reuse water to forebay, ~27 miles	Phase 1	\$90,000,000
	SGRF to Ivins Reservoir Pipeline	Convey Type 1 reuse water to reservoirs, ~14 miles	Phase 1	\$50,000,000
	AWT Forebay to New System Storage Pipeline	Convey Type 1 reuse water to New System Storage, ~4 miles	Phase 1	\$15,000,000
	Confluence Park to TSWS Pipeline	Convey Type 1 reuse water to reservoirs, ~4 miles	Phase 1	\$12,000,000
Storage	Graveyard Wash Reservoir/Dry Wash Reservoir	1,500 acre-foot secondary irrigation reservoirs	Phase 1	\$42,000,000
	New System Storage	30,000 acre-feet of secondary irrigation reuse water storage	Phase 1	\$120,000,000
Phase 1 – Treatment/Conveyance				\$696,000,000
Phase 1 – Storage				\$162,000,000
Phase 2 - Treatment				\$602,000,000
Total				\$1,460,000,000

Notes:

¹ Costs are preliminary and based on industry averages or similar facilities.

Washington County Regional Reuse System: Planning
 Technical Proposal and Evaluation Criteria

- 4) *Include a preliminary schedule showing major tasks, milestones, and dates for the planning, design, and construction activities related to the project.*

The preliminary schedule to implement the phases of the Regional Reuse System are in Figure 6.

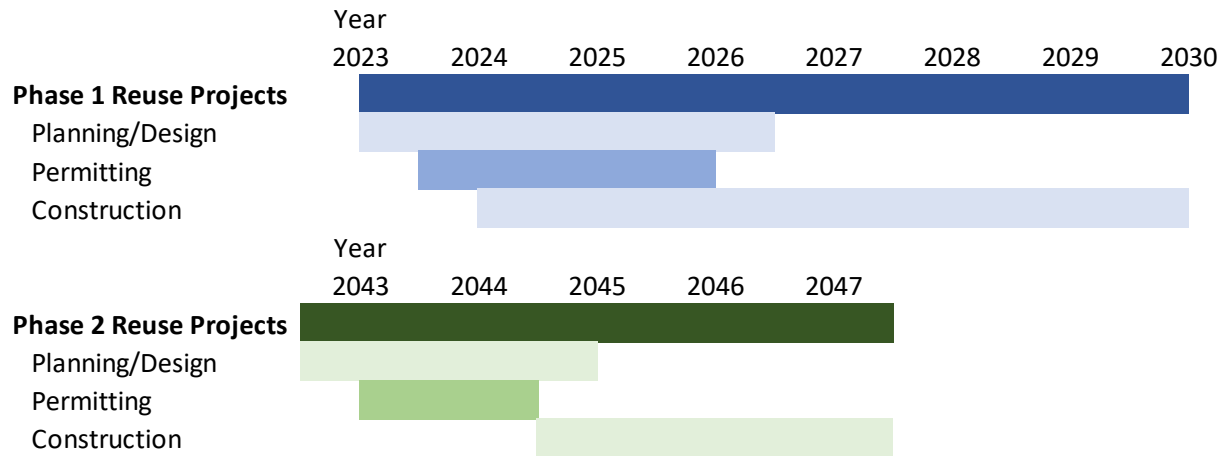


Figure 6. Preliminary Schedule of Washington County Regional Reuse System Implementation

EVALUATION CRITERION 2— STRETCHING WATER SUPPLIES

- 1) *Describe the potential for the project to reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies.*

The Regional Reuse System will lessen the quantity and urgency of imported water projects, such as the LPP. The LPP is a planned 140-mile-pipeline to import water from the Colorado River to Washington County. Future hydrology on the Colorado River and agreements with the Basin states are uncertain, and while the LPP remains a component of WCWCD’s long-term water resources plan, it is recognized that the project’s timing and scope may have to change. At this time, development of the few remaining local projects, including reuse, offers a more reliable supply for WCWCD. Without the initial phases of the Regional Reuse System being implemented in the next 10-15 years, the county would be at risk of perpetual shortages (see Figure 4), and WCWCD would need to accelerate plans for the LPP.

- 2) *Describe the potential for the project to alleviate pressure on existing water supplies and/or facilities. Please describe the existing water supplies, identify the supplies and/or facilities that will be impacted and explain how they will be impacted by the Project, including quantifications where applicable.*

The Regional Reuse System will postpone pressure on existing agricultural water supplies. Currently, agriculture has about 44,000 acre-feet of depletion water rights in the county, but only

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

38,890 acre-feet are considered reliable (i.e., have a 1900 or earlier priority date)⁴. Preliminary climate changes analysis by WCWCD indicates that only agricultural water rights with a priority date of 1890 or earlier will be reliable in the future, resulting in approximately 16,000 acre-feet.

There is generally a State and local desire to maintain a healthy agricultural economy and culture⁵. As agricultural land in Washington County is developed, some reliable agricultural water supply will be converted to municipal use. If the Regional Reuse System is not built, there will be added pressure to convert more agricultural supplies sooner and not give the county adequate time to avoid or mitigate the negative environmental and socioeconomic consequences.

3) *Describe the potential for the project to make water available to address a specific concern. Explain the specific concern and its severity. Also explain the role of the project being investigated in addressing that concern and the extent to which the project will address it.*

Meet Statutory Source Sizing Standard

The new WCWCD source sizing standard, as described in Question No. 2 under Subcriterion No. 1a, is 0.59 acre-feet/year per ERC. Even with this conservation-based standard, Washington County will not meet source sizing requirements and will have a 100,000 acre-foot deficit by 2070 under a hotter, drier climate (see Figure 4). The Regional Reuse System will contribute about 47,000 acre-feet by 2050 to help meet the WCWCD total source sizing requirement.

Reduce Groundwater Depletion

The Virgin River Basin (Utah Division of Water Rights Area 81) is currently closed for additional groundwater appropriation, but to date a Groundwater Management Plan has not been required to repair or prevent Virgin River Basin overdraft. Groundwater and natural springs are the predominate potable water supply for many Washington County communities (Table 1). Studies have shown, however, that the average natural recharge to the local aquifer is likely much less than the total water rights allocated for the basin⁶. The Regional Reuse System will support a more sustainable use of local groundwater resources. Without the project to support future demands, these groundwater supplies could be used more heavily and may necessitate a Groundwater Management Plan to manage potential future overdraft.

Reduce Competition for Water Supplies

The Regional Reuse System will lessen the speed of converting existing agricultural supply to municipal use, as described in Question No. 2 under Criterion No. 2.

Protect Drought Resiliency

Without the Regional Reuse System, WCWCD will need to rely more heavily upon banked groundwater reserves below Sand Hollow Reservoir to meet potable demands. This reserve supply (currently about 160,000 acre-feet) is intended to meet demands during short-term, acute

⁴ Olds, J.D. 2021. Evaluation of the Potential Conversion of Irrigation Water to Municipal Use in the Virgin River Basin, Washington County, Utah. September 2021.

⁵ Utah Division of Water Resources. 2021. Utah State Water Plan. December 2021.

⁶ Marston, T.M., and Heilweil, V.M., 2012, Numerical simulation of groundwater movement and managed aquifer recharge from Sand Hollow Reservoir, Hurricane Bench area, Washington County, Utah: U.S. Geological Survey Scientific Investigations Report 2012-5236, 34 p.

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

drought periods. Relying on these reserves for multiple years under non-drought emergency conditions weakens the region's drought resiliency.

Mitigate Natural Disasters

The majority of WCWCD's surface water supply originates from the upper Virgin River watershed in and near Zion National Park, whereas the county's groundwater supplies occur further downstream in the watershed. Both the surface water and groundwater supplies are subject to localized wildfire, flooding, and other infrastructure risks. Infrastructure to reuse either supply would diversify the supply portfolio and thereby alleviate pressure during an emergency outage in the watershed.

Augments Water-Based Recreation

Sand Hollow State Park in Washington County has consistently been the most visited park in Utah for several years, with Quail Creek State Park being in or near the top ten⁷. Storing and managing potable reuse water supply in these reservoirs will increase water levels that would otherwise be further depleted under climate change and demand growth. Maintaining the quality and quantity of these recreational sites in Washington County helps relieve pressure on surrounding congested recreational areas, such as Zion National Park.

- 4) *Describe the potential for the project to help create additional flexibility to address drought. Will water made available by the project being investigated continue to be available during periods of drought? To what extent is the water made available by the project being investigated more drought resistant than alternative water supply options? Explain.*

In addition to protecting overuse of WCWCD's drought emergency supply (see Question No. 3 under Criterion 2 above), water reuse facilities will enhance and diversify the county's water supply portfolio by creating a drought resilient water supply. When drought contingency plans are enacted during dry periods, emphasis will be given to maintaining indoor residential use, thereby preserving the raw water supply (i.e., sewer return flows) for reuse facilities. Reusing indoor water use supplied by local Virgin River Basin sources will also be more drought resistant than importing Colorado River water in the LPP.

EVALUATION CRITERION 3— ENVIRONMENT AND WATER QUALITY

- 1) *Describe the potential for the project to improve the quality of surface water or groundwater.*

Currently wastewater effluent disposal from Washington County treatment facilities consists of holding ponds and land application (ACSSD) or river discharge with seasonal and partial flow reuse for irrigation (SGRF). The treatment process alternatives considered for the Regional Reuse System each include filtration and advanced water treatment processes that would improve the quality of effluent that contacts surface water or groundwater. Expected water quality improvements include lower suspended solids or turbidity, less dissolved solids (salts) for alternatives that include reverse osmosis, removal or reduction of contaminants of emerging concern, and removal of viruses and bacteria.

⁷ See <https://stateparks.utah.gov/resources/park-visitation-data/>

Washington County Regional Reuse System: Planning
Technical Proposal and Evaluation Criteria

- 2) *Describe the potential for the project to improve effluent quality beyond levels necessary to meet State or Federal discharge requirements.*

The treatment processes considered for the Regional Reuse System exceed current State or Federal wastewater discharge requirements. Resulting water quality is near drinking water standard and designed to not impair the quality to groundwater or surface water. For potable reuse applications, State or Federal standards are not yet fully developed to address water quality or treatment process requirements. However, the treatment processes under consideration for the project will produce water quality that meets or exceeds any known standards.

- 3) *Describe the potential for the project to improve flow conditions in a natural stream channel.*

Under low flow or high temperature conditions in the Virgin River, WCWCD is able to pump water from Sand Hollow Reservoir upstream to the Hurricane Hydropower Plant for releases to the river. This pump-back operation is coordinated under the Virgin River Program for the benefit of Federally-listed fish. Storing and managing potable reuse water supply in Sand Hollow Reservoir would increase flexibility in meeting pump-back targets and has potential to improve flow conditions in approximately 15 miles of designated critical habitat in the Virgin River.

- 4) *Describe the potential for the project to restore or enhance habitat for non-listed fish and wildlife species.*

Sand Hollow and Quail Creek reservoirs provide large areas of habitat for waterfowl, migratory birds, bats, and other non-listed wildlife species in a desert region. Both reservoirs also support game fish populations. Storing and managing potable reuse water supply in these reservoirs will increase water levels that would otherwise be further depleted under climate change and demand growth. Maintaining higher water levels will continue to enhance habitat for these species.

- 5) *Describe the potential for the project to provide water or habitat for federally listed threatened or endangered species.*

The Regional Reuse System may improve designated critical habitat for the Virgin River chub (*Gila seminuda*) and woundfin (*Plagopterus argentissimus*). See the response to Question No. 3 under Criterion No. 3 for discussion of improved streamflows.

EVALUATION CRITERION 4—DEPARTMENT OF THE INTERIOR PRIORITIES

- 1) *Describe in detail how the proposed project supports a priority: Climate Change.*

Existing potable water supplies are expected to decrease up to 45% (Figure 7) due to climate change impacts on Virgin River streamflow and groundwater recharge (also see Questions No. 1 and No. 2 under Subcriterion No. 1a). Regional planning processes have identified a diverse portfolio of future practices and projects, including reuse, which can meet future needs under limited local water supplies threatened by climate change. The Regional Reuse System could provide a reliable water supply of approximately 47,000 acre-feet per year by 2050 under a hotter, drier climate. Reusing local supplies will partly mitigate decreasing water supply due to climate change.

Washington County Regional Reuse System: Planning Technical Proposal and Evaluation Criteria

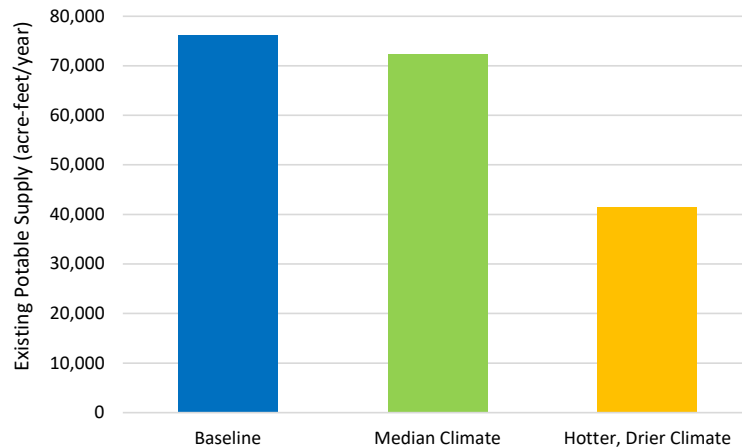


Figure 7. Existing Reliable Potable Supply for Washington County under Climate Change by 2070

2) *Describe in detail how the proposed project supports a priority: Disadvantaged or Underserved Communities.*

There are 94 census blockgroups in Washington county, most of which are or will be served by WCWCD. Several blockgroups are home to disadvantaged and underserved communities⁸, as follows:

- Twelve blockgroups have more than 10% of families below the poverty level; five blockgroups have more than 20% of families below the poverty level.
- Sixteen blockgroups have minority populations of more than 20%.
- Five blockgroups have Native American populations of more than 5%.

The Regional Reuse System will help protect disadvantaged and underserved communities from drought and climate change impacts, and provide sustained economic opportunities.

3) *Describe in detail how the proposed project supports a priority: Tribal Benefits.*

The 2001 Settlement Agreement⁹ between the Shivwits Band of Paiutes, WCWCD, and other parties gives the Tribe the right in perpetuity to 2,000 acre-feet per year of reuse water supply from the existing SGRF. The Regional Reuse System will expand reuse treatment, storage, and conveyance capacity in the western portion of the county and will help WCWCD and St. George continue to fulfill its contractual obligations to deliver water annually to the Tribe.

⁸ U.S. Census, 2020 American Community Survey, www.data.census.gov

⁹ Shivwits Band of the Paiute Indian Tribe of Utah. 2001. Water Rights Settlement Agreement. January 18, 2001.

EVALUATION CRITERION 5—WATERSHED PERSPECTIVE AND STAKEHOLDER INVOLVEMENT

1) *Will the proposed project implement a regional or state water plan or an integrated resource management plan? Explain.*

The Regional Reuse System will implement needed actions identified in State of Utah water plans. In 2013, Utah’s Governor asked the Utah Division of Water Resources and water conservancy districts to develop a statewide “road map” for Utah’s municipal water needs. The first Utah Statewide Water Infrastructure Plan or SWIP quantified the state’s future water demands and outlined specific conservation, rehabilitation, and new infrastructure needs. Multiple projects were explicitly identified as needed actions in the Virgin River Basin, including additional reuse. This requirement for additional water reuse investment in the Virgin River Basin was reiterated in the 2020 SWIP¹⁰ and the state’s 2021 Water Resources Plan¹¹.

2) *Will the proposed project help meet the water supply needs of a large geographic area, region, or watershed? Explain.*

The Regional Reuse System will serve the seven largest communities in Washington County, Utah, encompassing 139,615 acres or 218 square miles (see Figure 1). As WCWCD expands its services to most of Washington County, the reuse system could serve approximately 2,400 square miles in the upper and middle Virgin River watershed.

3) *Will the proposed project promote collaborative partnerships to address water-related issues? Explain. Describe stakeholder involvement in the project planning process.*

WCWCD has formed partnerships with Washington County municipalities as part of its RWSA, and operates its water system in coordination with these cities. In 2022 and 2023, WCWCD held workgroup meetings with the RWSA municipal partners to discuss the county’s integrated water management plan. Reuse is a major topic in these ongoing meetings. The Regional Reuse System will also promote ongoing collaboration between WCWCD and the main wastewater service providers, ACSSD and City of St. George, to develop and operate the planned infrastructure.

4) *Will the proposed project include public outreach and opportunities for the public to learn about the project? Explain.*

Public outreach has been performed for the Regional Reuse System over the past two decades. Dry Wash and Graveyard Wash Reservoirs underwent NEPA analysis in 2004. A public information workshop and public comment period were held. It is anticipated other features of the Regional Reuse System will undergo further NEPA public processes. The State of Utah does not have public outreach guidance regarding direct or indirect potable reuse. It is anticipated that public outreach requirements will be similar to surrounding state guidance documents, and include a public information repository and public mailings and/or meetings prior to project start-up.

¹⁰ Utah Division of Water Resources (Prepare60). 2020. Statewide Water Infrastructure Plan, 2nd Edition.

¹¹ Utah Division of Water Resources. 2021. Utah State Water Plan. December 2021.

Project Budget

Funding Plan

Describe how the non-Federal share of project costs will be provided. Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources.

The Federal cost share for Funding Group II under this NOFO is limited to 25% of total planning and preconstruction activities. This requirement will limit the federal cost share to a maximum of \$1,352,638 (Table 8). The remaining amount (\$4,057,914) up to the full amount (\$5,410,553), depending on the Federal contribution, will be the sole responsibility of WCWCD.

WCWCD has developed a general capital funding strategy that will phase-in water rates, impact fees, and ad valorem (property) tax increases to produce sufficient revenue streams for its future water supply projects, including the Regional Reuse System. This project funding strategy, as outlined in the 2019 Applied Analysis economic study¹², would produce the following revenue capacity for WCWCD funding:

- \$2.96 billion in impact fees
- \$1.75 billion in water rate increases
- \$1.41 billion in property taxes

The funding source for planning and preconstruction activities for the Regional Reuse System will be obtained from these revenues (Table 8).

Budget Proposal

Clearly identify all project costs, including those that will be contributed as non-Federal cost share by the applicant, third-party in-kind contributions, and those that will be covered using the funding requested from Reclamation, and any requested pre-award costs.

The Regional Reuse System budget proposal for planning activities is summarized in Table 8 and Table 9. Details for the budget are in the Budget Detail and Narrative Tables (Appendix A).

¹² Applied Analysis. 2019. Washington County Water Conservancy District Economic Analysis. January 2019.

Washington County Regional Reuse System: Planning
Project Budget

Table 8. Summary of Non-Federal and Federal Funding Sources

Funding Sources	Amount
Non-Federal Entities	
1. Washington County Water Conservancy District	\$4,057,914
Non-Federal Subtotal	\$4,057,914
Requested Reclamation Funding	\$1,352,638

Table 9. Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funding	\$1,352,638
Costs to be paid by the applicant	\$4,057,914
Value of third-party contributions	\$0
Total Project Cost	\$5,410,553

Budget Narrative

Provide a discussion of, or explanation for, items included in the budget proposal.

Details of the budget narrative, along with cost estimate back-up and a letter certifying labor rates, are in the Budget Detail and Narrative Tables (Appendix A).

Letters of Funding Commitment

No other non-Federal entities will be funding the planning and preconstruction activities for the Regional Reuse System proposed in this application. Therefore, no letters of commitment are provided.

Permits, Letters, and Statements

Required Permits or Approvals

State in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Requirements and status for Regional Reuse System permits are listed in Table 10. All completed permits are available for review by Reclamation.

Table 10. Summary of Permitting Requirements for the Regional Reuse System

Jurisdiction	Permit	Purpose	Status
Bureau of Land Management	ROW Grant	ROW	To be completed
Bureau of Land Management	Section 106 Consultation	Cultural resources impacts	To be completed
US Army Corps of Engineers	404 Permit(s)	Jurisdictional waters impacts	To be completed
US Fish and Wildlife Service	Section 7 Consultation	Threatened and endangered species	To be completed
Utah Division of Water Rights	Stream Alteration Permit	Alteration of natural streams	To be completed
Utah Division of Water Quality	401 Certification	Water quality impacts	To be completed
Washington County	Conditional Use Permit	ROW	Contractors will acquire

Official Resolutions

Include an official resolution adopted by the applicant's board of directors or governing body to commit the applicant to the financial and legal obligations associated with receipt of a financial assistance award.

The official resolution of the WCWCD Board for the Regional Reuse System will be submitted to Reclamation within 30 days of this application submittal.

Letters of Support

Include letters from interested stakeholders supporting the proposed project.

Letters of support for the Regional Reuse System are in Appendix B.

Overlap or Duplication of Effort Statement

State if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal.

On October 17, 2022, WCWCD and St. George submitted applications for funding under the Southern Utah Reuse ARPA Grant program. The program is a competitive grant program for wastewater reuse projects in Southern Utah. The Utah Department of Environmental Quality Water Quality Board is administering the funding. WCWCD submitted for the Dry Wash Reservoir. St. George submitted for the Graveyard Wash Reservoir. Funding was announced on December 14, 2022. WCWCD was awarded \$2,369,800 and St. George was awarded \$1,934,000. The funding for Dry Wash and Graveyard Wash Reservoirs will be used for construction, as planning and design have been completed for the reservoirs.

Uniform Audit Reporting Statement

Applicants must state if their organization was or was not required to submit a single audit report for the most recently closed fiscal year.

The WCWCD was not required to submit a single audit report for the most recently closed fiscal year.

Conflict of Interest Disclosure Statement

Per the Financial Assistance Interior Regulation (FAIR), 2 CFR §1402.112, applicants must state in their application if any actual or potential conflict of interest exists at the time of submission.

No actual or potential conflict of interest exists at this time.

WASHINGTON COUNTY REGIONAL
REUSE SYSTEM: PLANNING

February 27, 2023

Appendix B:
Letters of Support

DISTRICT OFFICES

420 EAST SOUTH TEMPLE STREET, #390
SALT LAKE CITY, UT 84111
(801) 364-5550

253 WEST ST. GEORGE BOULEVARD, #100
ST. GEORGE, UT 84770
(435) 627-1500



Congress of the United States
House of Representatives
Washington, DC 20515-4402

CHRIS STEWART
2ND DISTRICT, UTAH

PERMANENT SELECT COMMITTEE ON
INTELLIGENCE
RANKING MEMBER
STRATEGIC TECHNOLOGIES AND ADVANCED
RESEARCH SUBCOMMITTEE

COMMITTEE ON
APPROPRIATIONS

SUBCOMMITTEE ON
INTERIOR, ENVIRONMENT, AND RELATED AGENCIES

SUBCOMMITTEE ON
FINANCIAL SERVICES AND GENERAL GOVERNMENT

COMMITTEE ON
THE BUDGET

February 24, 2023

Commissioner Camille Calimlim Touton
United States Bureau of Reclamation
1849 C. Street NW, Room 7657
Washington, D.C. 20240

Re: Letter of Support, Reclamation WaterSMART Water Recycling and Desalination Planning

Application for Washington County, Utah Regional Reuse System

Dear Commissioner Touton,

We are writing to urge full and fair consideration of the Washington County Water Conservancy District's (District) 2023 WaterSMART Water Recycling and Desalination Planning grant application. As one of the fastest-growing regions, the proposed Washington County Regional Reuse System is critical to diversifying the county's water supply as well as increasing drought resiliency and water sustainability in the region.

Washington County is moving aggressively to increase conservation and develop local resources. The Regional Reuse System is a critical component in these efforts. By preserving higher quality water for potable uses and introducing potable reuse, the Regional Reuse System's water recycling program will improve efficiency, provide flexibility during water shortages, and diversify the county's water supply.

The state of Utah and Washington County have demonstrated their commitment to this innovative project through significant financial contributions. Extensive investment in infrastructure systems is required to ensure a safe and reliable drinking water supply. The support of the Bureau of Reclamation's

WaterSMART Water Recycling and Desalination Planning grant will help Washington County increase

drought resiliency and water sustainability for the ultimate benefit of all who share the resources of the Colorado River basin. We respectfully request your support of the district's grant application as it seeks federal funding for this important project.

Thank you for your consideration of the Washington County Water Conservancy District's application to the WaterSMART Water Recycling and Desalination Planning grant program. If you have any questions, please contact Celeste Maloy from Representative Chris Stewart's office at celeste.maloy@mail.house.gov.

Sincerely,



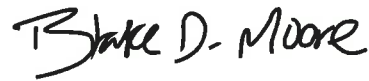
Chris Stewart
Member of Congress



John Curtis
Member of Congress



Burgess Owens
Member of Congress



Blake Moore
Member of Congress



Mike Lee
United States Senator



Mitt Romney
United States Senator



February 22, 2023

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Maribeth Menendez
P.O. Box 25007, 86-63000
Denver, CO 80225

Re: Letter of Support, Reclamation WaterSMART Water Recycling and Desalination Planning Application
for Washington County Regional Reuse System

Dear Ms. Menendez,

Thank you for your consideration of the Washington County Water Conservancy District's 2023 WaterSMART Water Recycling and Desalination Planning grant application. St. George City is pleased to support the planning and design of the Regional Reuse System.

Washington County is one of the nation's fastest-growing regions. Current projections estimate the county's population will increase up to 200% by 2060. The county's population depends almost entirely on the Virgin River basin for its water. The Virgin River is a small, drought-prone tributary of the Colorado River that has been fully developed. In the face of mounting growth, declining water supply, and ongoing water shortages, recycling local water resources is essential to protect the county's existing and projected economy and population.

Washington County is moving aggressively to increase conservation and develop local resources. The Regional Reuse System is a critical component in these efforts. By preserving higher quality water for potable uses and introducing potable reuse, the Regional Reuse System's water recycling program will improve efficiency, provide flexibility during water shortages, and diversify the county's water supply.

Extensive investment in infrastructure systems is required to ensure a safe and reliable drinking water supply. The support of the Bureau of Reclamation's WaterSMART Water Recycling and Desalination Planning grant will help Washington County increase drought resiliency and water sustainability for the ultimate benefit of all who share the resources of the Colorado River basin.

The City of St. George is in full support of the Washington County Water Conservancy District's 2023 WaterSMART Water Recycling and Desalination Planning grant application.

Sincerely,

Michele Randall, Mayor
City of St. George

CITY OF ST. GEORGE



February 15, 2023

Bureau of Reclamation
Water Resources and Planning Office
Attn: Ms. Maribeth Menendez
P.O. Box 25007, 86-63000
Denver, CO 80225

Re: Letter of Support, Reclamation WaterSMART Water Recycling and Desalination Planning Application for Washington County Regional Reuse System

Dear Ms. Menendez,

Thank you for your consideration of the Washington County Water Conservancy District's 2023 WaterSMART Water Recycling and Desalination Planning grant application. Ash Creek Special Services District is pleased to support the planning and design of the Regional Reuse System.

Washington County is one of the nation's fastest-growing regions. Current projections estimate the county's population will increase up to 200% by 2060. The county's population depends almost entirely on the Virgin River basin for its water. The Virgin River is a small, drought-prone tributary of the Colorado River that has been fully developed. In the face of mounting growth, limited water supply, and long-term drought cycles, recycling local water resources is essential to protect the county's present and future.

Washington County is moving aggressively to increase conservation and develop local resources. The Regional Reuse System is a crucial component of those efforts. By preserving higher quality water for potable uses and introducing potable reuse, the Regional Reuse System's water recycling program will improve efficiency, provide flexibility during water shortages, and diversify the county's water supply.

Extensive investment in infrastructure systems is required to ensure a safe and reliable drinking water supply. The support of the Bureau of Reclamation's WaterSMART Water Recycling and Desalination Planning grant will help Washington County increase drought resiliency and water sustainability for the ultimate benefit of all who share the resources of the Colorado River basin.

Sincerely,

A handwritten signature in black ink that reads "Michael A. Chandler".

Mike Chandler, P.E.
Superintendent
Ash Creek Special Service District

1350 South Sandhollow Road, Hurricane, UT 84737
phone: 435.635.2348
email: ashcreek@infowest.com