



BOARD OF TRUSTEES PUBLIC MEETING MINUTES

Meeting date: July 6, 2022
Time: 6 p.m.
Location: 533 E Waterworks Dr., St. George UT 84770
Participants: Board members including Ed Bowler, Kress Staheli and Adam Bowler (virtual). District staff including Zach Renstrom, general manager; Mindy Mees, secretary; and Jodi Richins, general counsel. Other meeting attendees are noted on the attached sign-in sheet.

Consideration of approval of P-Card for Mindy Mees.

Mindy Mees is the new Board Secretary and will need a P-Card to make purchases for Board-related business.

Chris Hart moved to approve a P-Card for Mindy Mees. The motion was seconded by Kress Staheli and all voted aye.

Consideration of approval of district insurance policy bid

The district secured competitive insurance bids, and recommended Glatfelter Public Practice with an annual premium of \$158,554. Zach requested that the board accept the insurance bid given the company is one of not very many companies that will insure dams.

Kress Staheli moved to approve the district insurance policy bid. The motion was seconded by Chris Hart and all voted aye.

Family Health Care impact fee discussion

Family Health Care is a medical facility that provides healthcare, medical, dental and pharmacy services for uninsured and low-income individuals. The facility has requested a discounted or waived impact fee. The district has historically not offered a reduction or discount to non-profit organizations and is concerned with establishing a precedent of doing so now.

Chris Hart asked if the impact fee could be set up into a payment plan. The board decided they would need more information and more discussion before they could make a decision.

Consideration of approval of purchase of 116.90 acres of land in La Verkin Creek from Kent Heideman

The district has the option to buy Kent Heideman's property in La Verkin Creek for \$5,000 an acre for a total cost of \$435,000. The district consulted with Ron Thompson and Steve Meisner and both recommended the purchase given the property is located near the creek and allows for water collection and delivery.

Kress Staheli moved to approve the purchase of 116.90 acres of land in La Verkin Creek from Kent Heideman. The motion was seconded by Chris Hart and all voted aye.

Resolution Appointing a New Secretary, Treasurer and Assistant Treasurer

With Roberta McMullin retiring, her jobs have been assigned as follows: Mindy Mees as Secretary of the board of trustees and assistant treasurer and Jenny Maxwell as Treasurer.

Chris Hart moved to appoint Mindy Mees as new secretary to the board and assistant treasurer and appoint Jenny Maxwell as treasurer. The motion was seconded by Kress Staheli and a roll call vote was taken as follows:

Chris Hart Yes

Kress Staheli Yes

Adam Bowler Yes

Ed Bowler Yes

Resolution updating Personal Policy & Procedures regarding employment selection policies

As per the district's employment and volunteer selection procedures, an applicant may be required to get a drug test. The district's HR department reached out to employee council, and they recommended testing volunteers. The district has volunteers that work at the gardens, and interns at the water treatment plant.

Chris Hart moved to approve the resolution and the motion was seconded by Adam Bowler. A roll call vote was taken as follows:

Chris Hart Yes
Kress Staheli Yes
Adam Bowler Yes
Ed Bowler Yes

Consideration of a Public Entity Resolution Authorizing Zach Renstrom and Jenny Maxwell as authorized individuals for District's PTIF accounts

Zach Renstrom and Jenny Maxwell need to replace retired Ron Thompson and Roberta McMullin as authorized individuals for the district's PTIF accounts.

Kress Staheli moved to approve the resolution and was seconded by Chris Hart. A roll call vote was taken as follows:

Chris Hart Yes
Kress Staheli Yes
Adam Bowker Yes
Ed Bowler Yes

Consideration of approval of Lake Powell Pipeline appraisal service agreement

A contract with Morley and McConkie was approved at the June 7, 2022 board meeting. It was reported in that meeting that the cost would be \$300 per appraisal but it is actually \$300/hr per appraisal, and \$100/hr for research. An approval is needed to proceed forward with this rate clarification.

Adam Bowler moved to approve the approval of Lake Powell Pipeline appraisal services agreement. The motion was seconded by Kress Staheli and all voted aye.

Consideration of approval of agreement for Engineering Services with Bowen Collins Engineering for Quail Creek Water Treatment Plant to Cottam System Pump stations and Pipeline Project

Four firms submitted bids for this project, including Bowen Collins & Associates, Alpha Engineering, AE2S Engineering and Horrocks Engineering. Bowen Collins & Associates was recommended for \$694,358 to design and construct multiple pumpstations and a pipeline to pump and convey Quail Creek Water Treatment Plant water to the Cottom system. This is a critical project for La Verkin and Leeds.

Kress Staheli moved to approve agreement for engineering services with Bowen Collins & Associates for Quail Creek Water Treatment Plant to Cottam System Pump stations and pipeline project, the motion was seconded by Chris Hart and all voted aye.

Consideration of approval of Memorandum of Understanding for Leeds Domestic Water Association cost sharing for Leeds Replacement Lines

The district is replacing a failing water line through Leeds that will consist of replacing roughly 10,000 feet of 14-inch HDPE pipe with 24-inch Ductile Iron Pipe. Leeds Domestic Water Association (LDWA) also needs to perform repairs in the area so the district will coordinate and share cost with LDWA to reduce cost and minimize construction activity.

Chris Hart moved to approve MOU for Leeds Domestic Water Association cost sharing for Leeds Replacement Lines, the motion was seconded by Adam Bowler and all voted aye.

Presentation and review of Draft IFFP/IFA Master Plan

A brief overview of the district's master plan was prepared by Bowen Collins & Associates and presented by Zach Renstrom. A copy of the slides are attached to the meeting minutes.

Project Status Reports:

- Ash Creek Project is on budget; the district will be getting additional bids for more pipe work
- Design work and property acquisition is underway for Toquer Reservoir..
- Cottam Tank is progressing on schedule
- The local BLM office has finalized the Warner Valley land exchange package; it is now being reviewed by the United States attorney's office.

Manager's report

Virgin River gauge reports the area is still in a drought. Water conservation remains a top priority.

Chris Hart had a question regarding will-serve letters for the cities; the district has been in discussion with the cities and SUHBA (Southern Utah Home Builders Association); more information will be forthcoming.

There is a meeting on August 9th with the city mayors on reuse water.

Consideration of Approval of June 7, 2022, board meeting minutes.

Chris Hart made a motion to approve the Board of Trustee Meeting Minutes form the June 7, 2022. Kress Staheli seconded the motion and all voted aye.

The meeting was adjourned upon motion.

Mindy Mees, Secretary

PREMIUM SUMMARY

WASHINGTON COUNTY WATER CONSERVANCY DISTRICT (UT) C33337

	<u>Premium</u>
Property.....	\$32,771
Crime.....	\$1,963
Inland Marine.....	\$3,612
Auto.....	\$17,369
General Liability	\$64,547
Law Enforcement Activity Liability	Not Quoted
Public Officials and Management Liability	\$6,965
Educators Legal Liability	Not Quoted
Cyber Liability and Privacy Crisis Management Expense.....	Included
Excess Liability	\$31,327
Total Estimated Annual Premium	\$158,554

**A RESOLUTION OF THE WASHINGTON COUNTY WATER CONSERVANCY
DISTRICT BOARD OF TRUSTEES APPOINTING A NEW SECRETARY,
TREASURER AND ASSISTANT TREASURER**

WHEREAS, the Administrative Policy of the Washington County Water Conservancy District provides that the Board of Trustees shall elect a Secretary to perform the duties set forth in the policy (Sections 2.16, 2.17);

WHEREAS, the Administrative Policy provides that the Secretary shall serve as Treasurer of the District unless otherwise provided for by the Board and that an Assistant Treasurer may also be appointed to assist the Treasurer and to function in the absence of the Treasurer (Section 2.18);

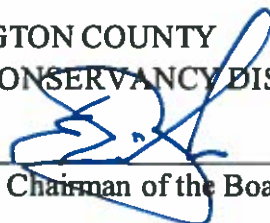
WHEREAS, a vacancy in the Secretary and Treasurer positions is occurring with the retirement of long-time district employee and respected public servant, Roberta McMullin;

NOW THEREFORE, be it resolved that the Board of Trustees of the Washington County Water Conservancy District hereby appoints:

1. District employee Mindy Mees to serve as Secretary of the Board of Trustees and as Assistant Treasurer of the District; and
2. District employee Jenny Maxwell to serve as Treasurer of the District.

DATED this 6th day of July, 2022.

WASHINGTON COUNTY
WATER CONSERVANCY DISTRICT:



Ed Bowler, Chairman of the Board

ATTEST:



Mindy Mees, Secretary

VOTING:

Ed Bowler	Yea ☒	No ☐
Adam Bowler	Yea ☒	No ☐
Chris Hart	Yea ☒	No ☐
Victor Iverson	Yea ☐	No ☐
Michele Randall	Yea ☐	No ☐
Kress Staheli	Yea ☒	No ☐
Kevin Tervort	Yea ☐	No ☐

**WASHINGTON COUNTY WATER CONSERVANCY DISTRICT
A RESOLUTION UPDATING PERSONNEL POLICY & PROCEDURES
REGARDING EMPLOYMENT SELECTION POLICIES**

WHEREAS, Washington County Water Conservancy District Personnel Policy & Procedures provides a policy related to Employment Selection Policies;

NOW THEREFORE, be it resolved that the following section of the Personnel Policy & Procedures shall be amended to include the underlined language:

Drug Testing and Criminal Background Check

As part of District's employment and volunteer selection procedures, an applicant may be required to undergo an employment drug screening and a criminal background check that are conducted by agencies designated by the District after the offer of employment or volunteer engagement. Further employment or engagement by the District is contingent upon, among other things, satisfactory completion of these screenings. The District's Drug and Alcohol-Free Workplace Policy is described further in this policy.

ADOPTED by the Board of Trustees this 6th day of July, 2022.

WASHINGTON COUNTY
WATER CONSERVANCY DISTRICT:



Ed Bowler, Chairman of the Board

ATTEST:



Mindy Mees, Secretary

VOTING:

Ed Bowler	Yea ☒	No ☐
Adam Bowler	Yea ☒	No ☐
Chris Hart	Yea ☒	No ☐
Victor Iverson	Yea ☐	No ☐
Michele Randall	Yea ☐	No ☐
Kevin Tervort	Yea ☐	No ☐
Kress Staheli	Yea ☒	No ☐



Office of the
State Treasurer

Public Entity Resolution

1. Certification of Authorized Individuals

I, Zachary Renstrom (Name) hereby certify that the following are authorized: to add or delete users to access and/or transact with PTIF accounts; to add, delete, or make changes to bank accounts tied to PTIF accounts; to open or close PTIF accounts; and to execute any necessary forms in connection with such changes on behalf of Washington Co Water Conservancy District (Name of Legal Entity). Please list at least two individuals. Each individual must have a unique email.

Name	Title	Email	Signature(s)
Zachary Renstrom	General Manager	zach@wcwcd.org	
Jenny Maxwell	Treasurer	jenny@wcwcd.org	

The authority of the named individuals to act on behalf of Washington Co Water Conservancy District (Name of Legal Entity) shall remain in full force and effect until written revocation from Washington Co Water Conservancy District (Name of Legal Entity) is delivered to the Office of the State Treasurer.

2. Signature of Authorization

I, the undersigned, General Manager (Title) of the above named entity, do hereby certify that the forgoing is a true copy of a resolution adopted by the governing body for banking and investments of said entity on the 6th day of July, 2022, at which a quorum was present and voted; that said resolution is now in full force and effect; and that the signatures as shown above are genuine.

Signature	Date	Printed Name	Title
	July 6, 2022	Zachary Renstrom	General Manager

STATE OF UTAH)
COUNTY OF Washington) §

Subscribed and sworn to me on this 6th day of July, 2022, by
Zachary Renstrom (Name), as General Manager (Title) of
Washington Co Water Conservancy District (Name of Entity), proved to me on the basis of
satisfactory evidence to be the person(s) who appeared before me.

(seal)



Signature

**EXHIBIT B
FEE PROPOSAL**

Utah: \$300 per hour for the appraiser's time with - \$100 per hour for research assistance.

Mohave & Coconino: \$300 per hour for the appraiser's time with - \$100 per hour for research assistance.

MEMORANDUM OF UNDERSTANDING
(Leeds Pipeline Replacement Cost Share)

Effective [date], this Memorandum of Understanding (MOU) is made between Washington County Water Conservancy District (District) and Leeds Domestic Water Association (Requester).

I. BACKGROUND

The District is replacing a failing waterline that goes through the town of Leeds (Project). The initial phase of the Project consists of replacing roughly 10,000 feet of 14 inch HDPE pipe with 24 inch Ductile Iron Pipe. Requester would like to replace approximately 4,950 feet of its own pipe that runs near the Project. This purpose of this MOU is to coordinate and share the cost for the two replacement projects.

II. REQUEST

The Requester has asked the District to include in the Project replacement of approximately 4,950 feet of Requester's existing 6 inch pipeline with a proposed 8 inch or 10 inch pipeline, depending on the required flow analysis provided by Requester's engineer, Jones and DeMille Engineering. The intent of this MOU is to provide a partnering effort between Requester and the District for cost share on engineering, design, and construction.

III. ACTION STEPS

To fulfill the Request described above, the Parties respectively agree to pursue in good faith the following action steps:

- A. Requester. In consideration for the fulfillment of the Request, the Requester agrees to:
1. Pay the District for its portion of the engineering, design, and construction as outlined in the Professional Services Proposal as may be amended from time to time, attached hereto and incorporated herein as Exhibit A, and as determined by Requester, Civil Science and the District.
- B. Washington County Water Conservancy District. Provided that the Requester complies with all its action steps listed above, pays the compensation required by this MOU, and complies fully with all other requirements of the MOU, the District agrees to:
1. Pay all invoices submitted by vendors procured by the District for the two replacement projects, as described in section II. REQUEST.

V. GENERAL

1. Term. This MOU will terminate when each of the parties has fulfilled their respective commitments described above.
2. Termination. This MOU may be terminated with cause by either party, in advance of the specified termination date, upon written notice being given to the other party. The party

in violation will be given ten (10) working days after notification to correct and cease the violations, after which the MOU may be terminated for cause. Such termination is to be without prejudice to any claim for damages or other remedy for such breach.

3. Conditions Precedent. Requester obtaining funding for its portion of the Project shall be a condition precedent to any rights, duties, claims, or interests of either party as set forth in this MOU.
4. Integration, Amendment and Waiver. This MOU constitutes the entire understanding of the Parties relating to the subject matter of this MOU. This MOU may only be amended through written agreement of all parties. The waiver by any party to this MOU of a breach of any provision of this MOU shall not be deemed to be a continuing waiver or a waiver of any subsequent breach, whether of the same or any other provision of this MOU. Any waiver shall be in writing and signed by the waiving party.
5. Indemnification. The Requester agrees to defend, indemnify, save harmless and release the District and all its officers, agents, volunteers, and employees from and against any and all loss, injury, damages, debts, obligations, claims, demands, encumbrances, deficiencies, costs, penalties, suits, proceedings, liability and expenses whether accrued, absolute, contingent or otherwise, including, without limitation, attorney fees and costs (whether or not suit is brought) and other liabilities of every kind, nature and description arising out of performance of this MOU which are caused in whole or in part by the negligence of the Requester's officers, agents, volunteers, or employees, but not for claims arising from the District's sole negligence. This obligation shall survive any termination of this MOU. The right of indemnification provided herein shall be in addition to any rights to which the District may otherwise be entitled. The District shall give notice to the Requester to provide indemnification promptly after receiving actual knowledge of any claim for which indemnity may be sought, provided that the failure of the District to give the required notice shall not relieve the Requester of its obligations under this MOU unless the failure to give notice is materially prejudicial to the Requester's ability to defend the action. The District shall be entitled to approve counsel who shall conduct the defense of the claim or litigation (whose approval shall not unreasonably be withheld), and may, at its own expense, participate in the defense. Notwithstanding the foregoing, however, (i) if the District reasonably determines that there may be a conflict between the positions of the Requester and of the District in connection with the defense of an action, suit, investigation, inquiry or other proceeding, or that there may be legal defenses available to the District different from or in addition to those available to the Requester, then counsel for the District shall be entitled to conduct a defense to the extent it reasonably determines necessary to protect the interest of the District and be reimbursed for expenses by the Requester, and (ii) in any event, the District shall be entitled to have counsel of its choice participate in the defense. The Requester, in the defense of any claim or litigation, shall not, except with the consent of the District, consent to entry of any judgment or enter into any settlement that does not include as an unconditional term the giving by the claimant or plaintiff to the District a release from all liability in respect to the claim or litigation.

6. No Third-Party Beneficiaries. Nothing in this MOU is intended to create any rights, duties, or obligations by the Parties to any person or entity not a party, and this MOU shall not be deemed to give rise to any right by any person or entity not a party against any Party to this MOU. Nothing in this MOU is intended to nor shall be deemed to relieve or discharge the obligation or liability of any person or entity not a party to this MOU.
7. District Authorities Not Altered. Nothing in this MOU alters, limits, or supersedes the authorities and responsibilities of the District on any matter within its jurisdiction. Nothing in this MOU shall require the District to perform beyond its respective authority.
8. Availability of Funds. Implementation of this MOU shall be subject to the availability of appropriated funds. Either party may cancel or suspend this MOU without penalty if adequate funds are not appropriated or received.
9. Laws and Regulations. Any and all actions performed pursuant to this MOU will comply fully with all applicable Federal, State and local laws and regulations.
10. Utah Law to Govern. This MOU has been drawn and executed in the State of Utah. All questions concerning the meaning, intention, and enforcement of any of its terms, or its validity shall be determined in accordance with the laws of the State of Utah. In any dispute jurisdiction and venue shall be in Utah.
11. Sovereign Immunity. Nothing in this MOU shall be construed to waive the sovereign immunity of the District.
12. Counterparts. This MOU may be executed in counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.
13. Paragraph Headings. The paragraph and subparagraph headings used herein are for convenience only and shall not be considered in the interpretation of this MOU.
14. Points of Contact. Each Party designates below a primary point of contact ("POC") to coordinate all matters concerning the carrying out of activities under this MOU. Any modifications to the POC will be provided in writing to the other parties. The contacts for work related to the project are:

Party	Point of Contact	Address	Telephone	e-mail
WCWCD	Whit Bundy	533 East Waterworks Dr. St. George, UT 84770	435.673.3617	whit@wewcd.org
LDWA	Kurt Allen	545 N Main Street, Suite #7 Leeds, UT 84746	435.879.0278	ldwa-kurt@infowest.com

15. Exhibits. The following exhibits attached hereto are incorporated herein by this reference. If there is any conflict or inconsistency between the terms of this MOU and the Exhibits, this MOU governs.

Exhibit A: Civil Science Professional Services Proposal

Each individual signing this MOU represents and warrants that the individual has been duly authorized to sign this MOU in the capacity and for the party where the individual signs:

Washington County Water Conservancy District



Zachary Renstrom, General Manager

Leeds Domestic Water Users Association

Kurt Allen



Procurement Memo

To Zachary Renstrom, General Manager
From Randy Johnson, Project Manager
Date July 6th, 2022
Subject Procurement of Design and Construction Management Services for Quail to Cottam Pumpstations and Pipeline Project

Type of Procurement: Design Professional Procurement for Engineering and Construction Management

Item Description: Design and Construction Management services for the Quail to Cottam Pumpstations and Pipeline Project.

Reason for Procurement: The Project Development Department of the Washington County Water Conservancy District (District) needs to procure this service because engineering services are needed to design and construct multiple pumpstations and a pipeline to pump and convey Quail Treatment Plant water to the Cottam System.

Review of Design Professionals: The following design professionals submitted statements in response to the District's Request for Statements of Qualifications. Bowen Collins and Associates was the highest scoring design professional with which a satisfactory contract was negotiated at a price fair and reasonable to the District.

1. Bowen Collins and Associates This design professional was determined to best meet the needs of the District because they received the highest score when evaluated on the basis of qualifications, knowledge and experience, management plan, and references. A satisfactory contract- was negotiated with this design professional at a price fair and reasonable to the District.
2. Alpha Engineering: This design professional did not score as high as the successful design professional.
3. AE2S Engineering: This design professional did not score as high as the successful design professional.
4. Horrocks Engineering: This design professional did not score as high as the successful design professional.

Purchase Amount: \$694,358

Contract Type(s): Fixed Price

Approved:

A handwritten signature in dark ink, appearing to read 'Zachary Renstrom', is written over a horizontal line.

Zachary Renstrom, General Manager

WCWCD Service Area

- All of Washington County
- Analysis focused on RWSA partner cities
- Includes high level evaluation of other communities

The map displays the Washington County Water Conservation District (WCWCD) Service Area. The service area is outlined in blue and includes Washington County, Oregon, and parts of Harney County, Oregon, and Grant County, Oregon. The map shows various cities and towns, including Medford, Grants, and Ashland. The map also includes a legend for land use (Forest, Agriculture, Urban, etc.), a scale bar, and a north arrow. The service area is outlined in blue, and various cities and towns are labeled.

WCWCD Facilities

County Growth Projections



**Kem C. Gardner
POLICY INSTITUTE**
THE UNIVERSITY OF UTAH
DAVID ECCLES SCHOOL OF BUSINESS

- Growth projections for Washington County
- No subcounty (individual city) growth projections
- Estimates made by identifying growth hotspots in the county and coordination with RWSA partners
- Build-out: Population expected to exceed 1 million

Kem C. Gardner Growth Projections - 2020 through 2065



Year	Green Line (Projected)	Red Line (Projected)	Blue Line (Projected)	Dark Blue Line (Projected)
2020	200,000	200,000	200,000	200,000
2025	220,000	215,000	210,000	205,000
2030	240,000	235,000	230,000	220,000
2035	260,000	255,000	250,000	240,000
2040	280,000	275,000	270,000	260,000
2045	300,000	295,000	290,000	280,000
2050	320,000	315,000	310,000	300,000
2055	340,000	335,000	330,000	320,000
2060	360,000	355,000	350,000	340,000
2065	380,000	375,000	370,000	360,000

1

Determining Current Equivalent Residential Connection (ERC) Counts

		Meter Size									Total
		3/4"	1"	1.5"	2"	3"	4"	6"	8"		
		Meter Conversion Ratios									
City		1	2.5	6.2	10.3	16	25	50	80		
St. George City	Culinary Water Meters	27,985	1,004	442	693	17	7	4	0	30,152	
	ERC Count	27,985	2,510	2,740	7,138	272	175	200	0	41,000	
Washington City	Culinary Water Meters	11,843	175	75	91	20	7	4	0	12,215	
	ERC Count	11,843	438	465	937	320	175	200	0	14,378	
Hurricane City	Culinary Water Meters	7,610	108	52	71	3	6	7	6	7,863	
	ERC Count	7,610	270	322	731	48	130	350	480	9,962	
Irvin City	Culinary Water Meters	3,636	13	10	31	4	5	0	0	3,699	
	ERC Count	3,636	33	62	319	64	125	0	0	4,239	
Santa Clara City	Culinary Water Meters	2,800	18	13	7	1	0	0	0	2,839	
	ERC Count	2,800	45	85	72	16	0	0	0	3,014	
La Verkin City	Culinary Water Meters	1,529	14	5	7	2	0	0	0	1,557	
	ERC Count	1,529	35	31	72	32	0	0	0	1,699	
Toquerville City	Culinary Water Meters	664	0	0	1	0	0	0	0	665	
	ERC Count	664	0	0	10	0	0	0	0	674	
Total RWSA	Culinary Water Meters	56,067	1,332	597	901	47	25	15	6	58,990	
	ERC Count	56,067	3,330	3,705	9,280	752	625	750	480	74,986	

- Meter inventory from each municipality
- Calculate ERC equivalency based on average water use for different meter sizes
- AWWA meter conversion ratios for larger meters with limited data available



5

Calculating the Source Sizing Standard for the RWSA Service Area

- ERC
 - Water use for a typical single family residential customer
 - Water use data collected and evaluated for about 20,000 single family homes
 - Excluded secondary homes and homes that use secondary irrigation



6

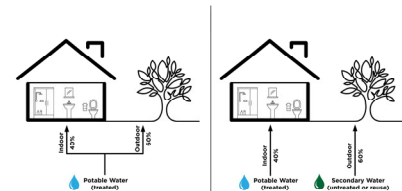
Calculating Source Sizing Standard Summary

- Existing Source Sizing Standard per ERC
 - 254,000 gallons/year, **0.78 AF/year**
 - 1,406 gallons/day peak day demand
- Proposed Source Sizing Standard for New Construction
 - Determined based on conservation goals
 - 195,000 gallons/year, **0.59 AF/year**
 - 1,079 gallons/day peak day demand
- This is a *gross* source sizing standard

7

Calculating Source Sizing Standard Accounting for Secondary Water Use

- Approximately 4,000 homes in the RWSA service area have access to secondary water
- Need to account for secondary irrigation
- Water use is estimated to be approximately 40% indoor and 60% outdoor



8

Secondary Water Use in the Future

- Each city has identified areas to be serviced by secondary irrigation
- Dry irrigation lines are in place in many locations
- Storage for secondary/reuse water is critical and dictates the timing of secondary water system expansion



9

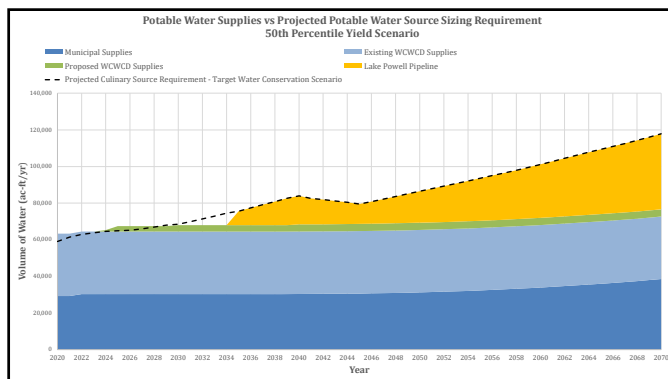
Inventory of Existing Water Supplies

Reliable yield based on potential future climate change scenarios

- Detailed inventory of WCWCD and municipal supplies
 - Categorized as potable and secondary supplies
 - Water right evaluation
 - Estimated reliable yield of each source based on climate change scenarios
 - Additional supply scenarios based on studies conducted by Reclamation at the Virgin River USGS Stream gage
 - Effort to determine the long-term reliability of water supplies

Water Provider	Reliable Potable (acre-feet)	Reliable Secondary (acre-feet)
WCWCD	35,668	991
St. George	16,456	14,138
Washington	3,694	1,087
Hurricane	3,478	1,636
Ivins	995	162
Santa Clara	2,566	436
La Verkin	693	2,452
Toquerville	541	0
Total RWSA Supply	64,091	20,902

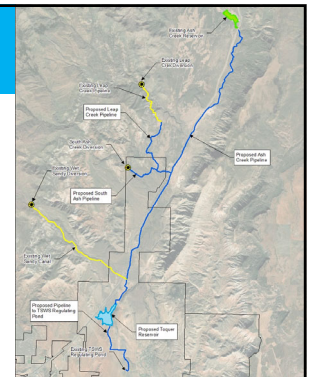
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11

Ash Creek Pipeline & Toquer Reservoir

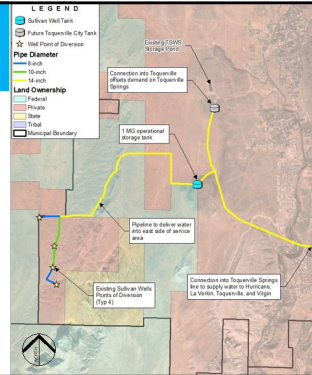
- Pipeline from Ash Creek Reservoir to Toquer Reservoir
- Picks up water from other drainages west of I-15
- Estimated reliable yield of 1,582 ac-ft/year



12

Sullivan Wells

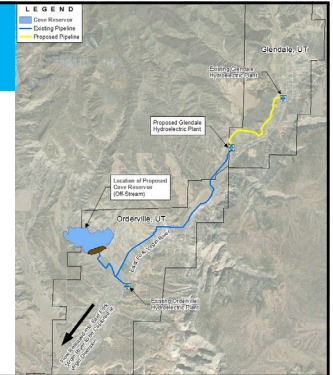
- 3 new potable water wells to serve county east side
- 1,448 ac-ft per year
- 1,200 gpm



13

Cove Reservoir

- Reservoir in Kane County
- Flow released from Cove Reservoir and captured at Virgin Diversion
- 600 ac-ft per year



14

Diamond Valley Well

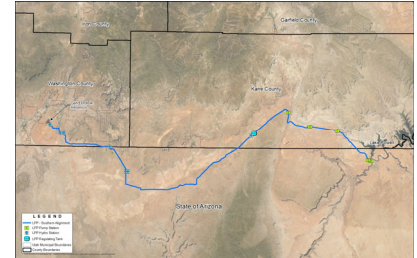
- Estimated reliable yield of 388 ac-ft/year
- 500 gpm



15

Lake Powell Pipeline

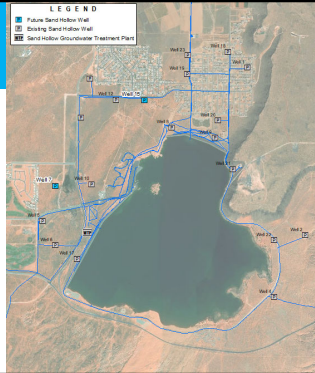
- Pipeline from Lake Powell to Sand Hollow Reservoir
- Up to 83,756 ac-ft/year



16

Sand Hollow Well Field Expansion

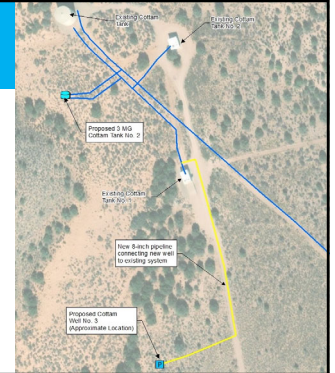
- 2 additional wells
- Upgrades to groundwater treatment plant
- Estimated 1,750 gpm



17

Cottam Well 3

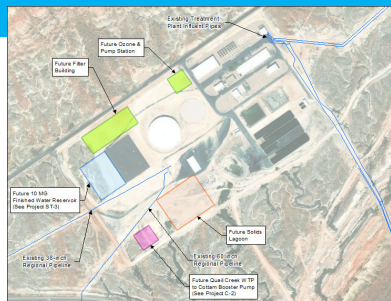
- Third well at Cottam Well site
- Maximizes system peaking capacity
- Increases system resiliency
- Estimated 600 gpm



18

Quail Creek WTP Expansion

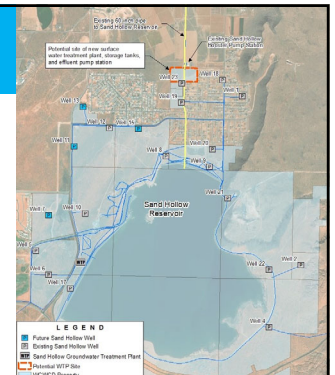
- Upgrade plant capacity from 60 to 80 MGD
- Ozone treatment process
- New solids lagoon
- 10 MG storage reservoir



19

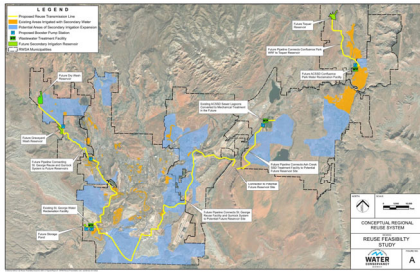
Sand Hollow Surface Water Treatment Plant

- Located near Sand Hollow Reservoir
- Planned to be constructed in phases
- Up to 50 MGD for demands through 2070



20

Conceptual Regional Reuse System



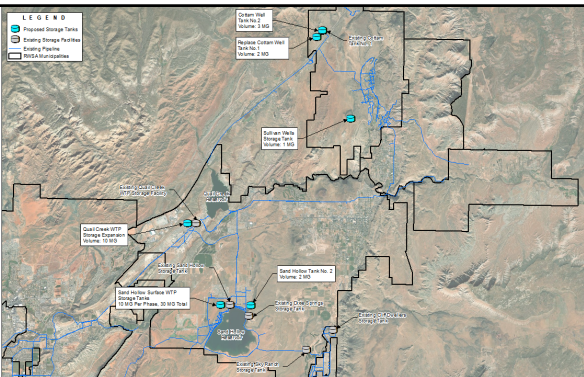
21

Existing Finished Water Storage Facility Summary

Storage Facility	Total Storage Volume (MG)	Fire Flow Storage Requirement (gallons)	Total Equalization Storage Available (gallons)
Quail Creek WTP	24	180,000	23,820,000
Cottam Tank	0.36	180,000	180,000
1 MG Sand Hollow Tank	1	0	1,000,000
2 MG Sand Hollow Tank	2	0	2,000,000
Warner Valley Tank	3	180,000	2,820,000
Sky Ranch Tank	0.13	120,000	10,000 ⁴
Cliff Dwellers Tank	0.13	0	130,000
Total	30.62	660,000	29,960,000



22



23

Major Water Conveyance Components

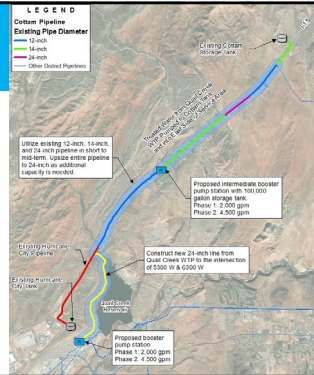
- Quail Pipeline
- Regional Pipeline
- Sand Hollow Regional Pipeline
- Cottam Pipeline
- Santa Clara Irrigation Line



24

Quail to Cottam Pipeline

- 24-inch pipeline and 2 pump stations
- Up to 4,500 gpm



25

Dixie Springs to SHRP Pipeline

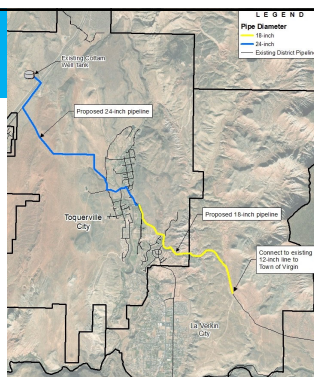
- 24-inch pipeline around North Dam of Sand Hollow Reservoir
- Dedicated feed from 2 MG tank



26

Cottam Well Transmission Line Upgrade

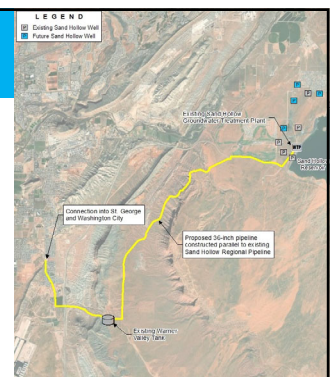
- 18-inch and 24-inch pipeline from Cottam Wells to Virgin
- Increases conveyance capacity into Toquerville, La Verkin, Hurricane and Virgin



27

Sand Hollow Regional Pipeline – Phase 2

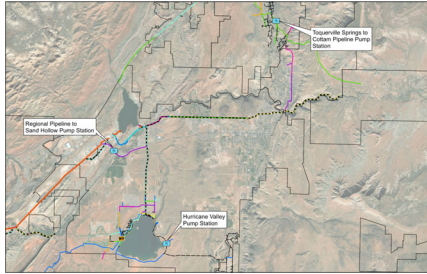
- Parallel 36-inch pipeline
- Adds capacity into west side of the service area



28

Pump Stations

- Regional Pipeline to Sand Hollow
- Toquerville Springs to Cottam Line
- Hurricane Valley



29

Recommended 10-Year Capital Improvements

Project	Description	Estimated Cost (Today's Dollars)
S-1	Cottam Well No. 3	\$1,977,000
S-2	Sand Hollow Well 7	\$1,815,000
S-3	Sand Hollow Well 15	\$1,815,000
S-4	Ash Creek Pipeline/Toquer Reservoir Project	\$72,000,000
S-5	Sullivan Wells Project	\$14,700,000
S-6	Cove Reservoir Project	\$10,000,000
S-7	Quail Creek WTP 80 MGD Expansion	\$130,000,000
S-8	Lake Powell Pipeline	\$1,800,000,000
ST-1	Cottam Wells 3 MG Tank	\$5,700,000
ST-2	Sand Hollow 2 MG Tank	\$6,000,000
ST-3	Quail Creek 10 MG Storage Tank	\$26,000,000
ST-4	Sullivan Well 1 MG Tank	\$3,000,000
C-1	Sand Hollow North Dam to West Dam Pipeline	\$3,700,000
C-2	Quail Creek to Cottam Pipeline and Pump Stations, Phase 1	\$12,000,000
C-3	Regional Pipeline to Sand Hollow Pump Station	\$2,500,000
C-4	Toquerville Springs to Cottam Pipeline Pump Station	\$1,000,000
C-5	Hurricane Valley Pump Station	\$750,000
R-1	Dry Wash Reservoir	\$15,500,000
Total Improvements		\$2,108,457,000

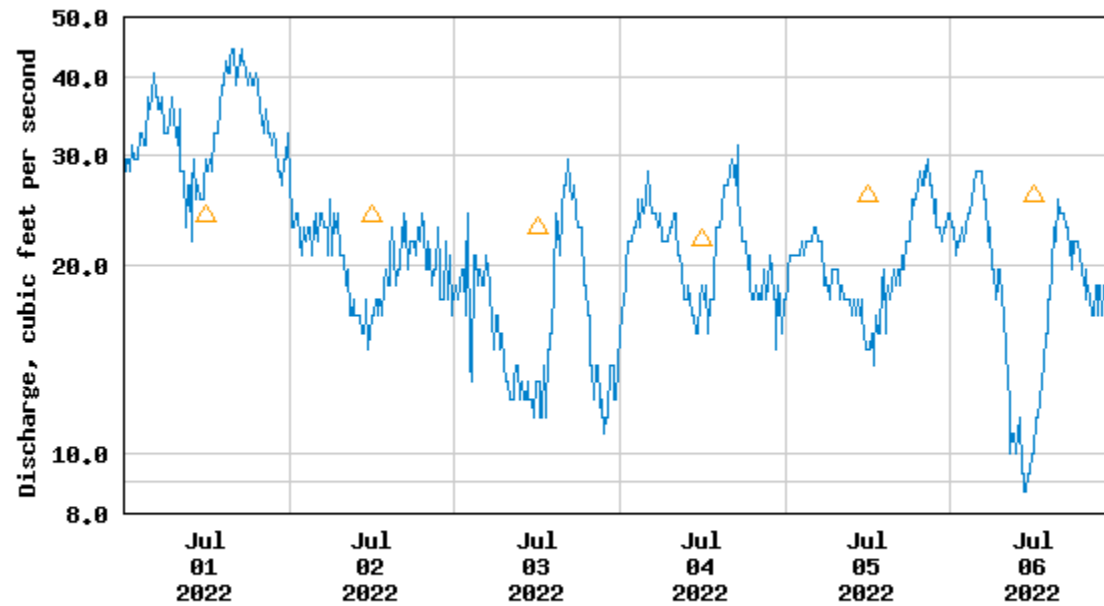
30

Q&A

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31

USGS 09413500 VIRGIN RIVER NEAR ST. GEORGE, UT



----- Provisional Data Subject to Revision -----

△ Median daily statistic (36 years) — Discharge