

Drinking Water Board Packet

July 8, 2016

Agenda



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

Drinking Water Board
Paul Hansen, P.E., *Chair*
Betty Naylor, *Vice-Chair*
Brett Chynoweth
Tage Flint
Roger G. Fridal
Alan Matheson
David L. Sakrison
David Stevens, Ph.D.
Mark Stevens, M.D.
Kenneth H. Bousfield, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING

July 8, 2016 – 1:00 pm
Vernal City Hall
374 East Main Street
Vernal, Utah 84078

Ken Bousfield's Cell Phone #: (801) 674-2557

1. Call to Order – Chairman Hansen
2. Roll Call – Ken Bousfield
3. Approval of the Minutes:
 - A. May 13, 2016
4. Financial Assistance Committee Report
 - A. Status Report – Michael Grange
 - B. Project Priority List – Michael Grange
 - C. SRF Applications
 - i. STATE:
 - a) Big Plains SSD – Rich Peterson
 - b) Koosharem – Nathan Hall
 - ii. FEDERAL:
 - a) Virgin Town – Nathan Hall
 - b) Irontown – Nathan Hall
 - c) Glen Canyon/Big Water – Gary Kobzeff
 - iii. Other:
5. House Bill 305 Related Rules – Ken Bousfield
6. Rule 309-105-12 – Ken Bousfield
7. Authorization to begin Rulemaking to Amend R309-540, Facility Design and Operation: Pumping Facilities – Bernie Clark

8. Rural Water Association Report – Dale Pierson
9. Directors Report
 - A. Report before a Legislative Interim Committee on December 2014 Legislative Audit
 - B. Report before a Legislative Interim Committee on DDW's fees
 - C. Division of Water Resource's H2Oath: Utah's Water-Wise Pledge

10. Other

11. Next Board Meeting:

Date: Tuesday, August 30, 2016
Time: 1:30 pm
Place: Davis Conference Center – Zephyr Room
1651 North 700 West
Layton, Utah 84041

12. Adjourn

In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Dana Powers, Office of Human Resources, at: (801) 499-2117, TDD (801) 903-3978, at least five working days prior to the scheduled meeting.

Agenda Item

3(A)



State of Utah

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DRINKING WATER BOARD MEETING
May 13, 2016 – 1:00 pm
Multi Agency State Office Building – Room 1015
195 North 1950 West
Salt Lake City, Utah 84116

DRAFT MINUTES

1. **Call to Order – Chairman Hansen**

Paul Hansen, Board Chairman, called the meeting to order at 1:00 pm.

2. **Roll Call – Ken Bousfield**

Board Members present: Paul Hansen, Betty Naylor, Brett Chynoweth, Tage Flint, Roger Fridal, Brad Johnson, David Sakrison, David Stevens, and Mark Stevens.

Division Staff present: Ken Bousfield, Michael Grange, Julie Cobleigh, Bernie Clark, Heather Bobb, and Marianne Booth.

3. **Approval of the Minutes:**

A. **March 3, 2016**

B. **April 25, 2016**

- Tage Flint moved to approve both sets of minutes. David Stevens seconded. The motion was carried unanimously by the Board.

4. **Financial Assistance Committee Report**

A. Status Report – Michael Grange

Michael Grange, Construction Assistance Section Manager with the Division of Drinking Water (DDW, the Division) began by reporting that currently in the State SRF program there is approximately \$3.9 million, and over the course of the next year the Division is

expecting another \$4.8 million to come into the fund; for a total of \$8.7 million to be available by May 2, 2017 for the funding of projects. It was noted that Trenton Town, who was coming before the Board today for additional funding, would need to be accounted for.

Michael then moved onto the Federal SRF program, reporting that currently there is approximately \$12 million and over the course of the next year the Division is expecting an additional \$16 million to come into the fund; for a total of \$28.2 million to be available by May 2017 for the funding of projects.

Michael then updated the Board on the following:

- Taylor West Weber: loan authorized January 2016, closed on March 10, 2016.
- White Hills Water Company: loan authorized May 2015, closed April 20, 2016.
- Plymouth Town: loan authorized May 2015, closed April 21, 2016.
- Hanksville: planning loan authorized July 2014, project completed.
- Huntsville: planning loan authorized almost 2 years ago, requested update from Gary Kobzeff.
- Cove Special Service District: loan authorized November 2014, new agreement as of 2 weeks ago.
- Kane County Water Conservancy District: loan authorized March 2011, currently under construction and nearing completion.

B. Project Priority List – Michael Grange

Michael Grange proposed that four new projects be added to the project priority list:

- Springdale with 72.3 points and a project consisting of a new treatment plant.
- Wellington City with 43.5 points and a project consisting of a new tank.
- Corinne City with 20.6 points and a project consisting of radium filtration for their well, spring rehabilitation, and new transmission line.
- Echo Mutual Water Company with 7.9 points and a project consisting of spring redevelopment.

There was discussion between Michael and the Board regarding the adding of Sterling to the project priority list. It was determined that as that was a last minute add on to the agenda, the points had not yet been calculated, but the Board could consider it along with the other four projects for approval.

- Paul Hansen moved to approve the updated project priority list with the addition of Sterling. Roger Fridal seconded. The motion was carried unanimously by the Board.

C. SRF Applications

i. STATE:

a) Trenton Town – Julie Cobleigh

Representing Trenton Town (Trenton) was Clair Christiansen of Newton Town, Ed Cottle of Trenton, Brian Goodsell of Clarkston Town, and Scott Archibald of Sunrise Engineering.

Julie Cobleigh, Environmental Engineer with the Division, reminded the Board that last November they authorized a loan of \$632,000 at 1% for 30 years with a grant of \$631,000 to Trenton in order to redevelop their North Fork and Big Birch Springs which are shared by Trenton, Clarkston, and Newton; however, the bids for the project have come in higher and they are now requesting \$200,000 in additional funding with the same loan/grant ratio as the prior authorization which would increase their water bill from \$63 to \$64 per connection. Julie reminded the Board that as part of the authorization there were inter-local agreements established between the three towns to repay their portions to Trenton, who would hold the loan. Division staff recommends that the Board authorize an increase in financial assistance to Trenton to a \$732,000 construction loan at 1% interest for 30 years and a grant of \$731,000.

There was discussion between the Board, Division Staff, and those representing Trenton, regarding the inter-local agreements and they have already been drafted and signed by all parties and that the increases in the bids were, in part, due to the spring collection area being larger than anticipated.

- Brett Chynoweth moved to authorize an increase in financial assistance to Trenton Town to a \$732,000 construction loan at 1% interest for 30 years and a grant of \$731,000. David Sakrison seconded. The motion was carried unanimously by the Board.

b) Sterling Town – Michael Grange

Representing Sterling Town (Sterling) was Randall Cox, Mayor, and Lynn Wall of Wall Engineering.

Michael Grange informed the Board that Sterling was requesting \$258,000 in financial assistance to redevelop three of their springs. He then informed the Board that the total project cost is estimated at \$300,000 but Sterling has qualified for \$42,000 in Community Development Block Grant (CDBG) funding contingent upon the remaining funding being secured this month. The local MAGI for Sterling is \$40,435 which is 95% of the State MAGI. Their current average water bill is approximately \$38, or 1.12 % of their local MAGI. The water bill after funding would be \$58, or 1.72% of their local MAGI, therefore Sterling does not qualify for additional subsidization. Division Staff recommends the Board authorize a \$258,000 construction loan at 2.52% per annum for 20 years to Sterling Town for spring redevelopment.

There was discussion between the Board, Division Staff, and those representing Sterling regarding the scope of the project. There was also discussion regarding how loan periods are determined; they are based on the applicants qualifying for additional subsidization but can change based on the Board's discretion; as well as discussion on how any remaining funds after project completion are handled; the town can be authorized to use it toward another project by the Board, or the money is returned and taken off the back end of the loan thus shortening the term.

- Tage Flint moved to authorize \$258,000 construction loan at 2.52% interest for 20 years to Sterling Town. Mark Stevens seconded. The motion was carried unanimously by the Board.

ii. FEDERAL:

a) Echo Mutual – Julie Cobleigh

Representing Echo Mutual Water Company (Echo) was Kory Staples, President of Echo, and Scott Kettle of Horrocks Engineers.

Julie Cobleigh informed the Board that Echo is currently under a Corrective Action Plan with the Division and is requesting \$35,857 to address the deficiency issues with spring boxes, overflow, drain discharges, and some deep rooted vegetation in the spring collection areas of five of their springs. The local MAGI for Echo is \$49,195 which is 122% of the State MAGI. The average water bill after project completion with a loan would be \$19, or 47% of local MAGI, this is lower than the current water bill and due to their annual O&M costs being less than typical and also because they collect revenue through their water bill to anticipate future needs. Due to the small size of the project, the health risks associated with the springs being compromised, the high cost of bonding, and the length of time needed for loan closing, the Financial Assistance Committee (FAC) recommends that the Board authorize a hardship grant of \$35,857 to Echo Mutual Company.

- David Stevens moved to authorize \$35,857 hardship grant to Echo Mutual Water Company. David Sakrison seconded. The motion was carried unanimously by the Board.

b) Corinne City – Michael Grange

Representing Corinne City (Corinne) was Brett Merkley, Mayor, Jess Nicholas, and Chris Wight of Hansens and Associates.

Michael Grange informed the Board that Corinne is requesting \$555,500 in financial assistance to install a radium filter in order to rehabilitate a spring and install a transmission line. The local MAGI for Corinne is \$41,329 which is 99% of the State MAGI. The average water bill after project completion would be \$61.36, or 1.79% of local MAGI which does qualify them for additional subsidization. The FAC recommends that the Board authorize \$555,500 at 2.85% interest for 20 years with \$113,500 in principal forgiveness to Corinne City.

There was discussion between the Board, Division Staff, and those representing Corinne regarding the period of the loan, that radium is naturally occurring, the complexity of the radium system they are installing and how it can be added to for future growth as needed.

- David Sakrison moved to authorize \$555,500 in financial assistance at 2.85% interest for 20 years with \$113,500 in principal forgiveness to Corinne City. Roger Fridal seconded. The motion was carried unanimously by the Board.

c) Springdale Town – Julie Cobleigh

Representing Springdale (Springdale) Town was Stan Smith, Mayor, Rick Wixsom, Town Manager, and Dustyn Shaffer of Sunrise Engineering.

Julie Cobleigh informed the Board that Springdale is requesting \$5,508,350 in financial assistance to construct a new surface water treatment plant and refinance an outstanding Division of Water Resources loan; and that Springdale will contribute an additional \$145,650 towards the project. The local MAGI for Springdale is \$30,483 which is 75% of the State MAGI. Their average water bill after project completion, including irrigation, would be \$89, or 3.49% of local MAGI, which does qualify them to be considered for additional subsidization. The FAC recommended the Board authorize \$5,508,350 at 1.5% for 30 years with \$1,652,350 in principal forgiveness, however since that time Springdale has committed to collaborating with Rockville Pipeline Company, which would make them eligible for an additional interest rate reduction to 1.25% for regionalization.

There was discussion between the Board, Division Staff, and those representing Springdale regarding the regionalization, that this project would ensure redundancy in their water system which they currently lack, and the impacts they have from tourism as they are the gateway to Zion's National Park.

- Brett Chynoweth moved to authorize \$3,856,000 in financial assistance at 1.25% interest or fee per annum for 30 years with \$1,652,350 in principal forgiveness to the Town of Springdale contingent upon regionalization with Rockville. Paul Hansen seconded. The motion was carried unanimously by the Board.

iii. Other:

5. Information about future rulemaking related to design and construction standards – Bernie Clark

- A. R309-540, *Pump Stations***
- B. R309-505, *Minimum Treatment Requirements***
- C. R309-525, *Conventional Surface Water Treatment***
- D. R309-530, *Alternative Surface Water Treatment Methods***
- E. R309-535, *Miscellaneous Treatment Methods***

Bernie Clark, Environmental Scientist with the Division, reported to the Board on the next set of rules the Engineering Section will be updating. Bernie explained that for R309-540 *Pump Stations*, last amended in February 2009, Engineering Staff have completed a draft and after internal and external review will bring it before the Board in July for authorization to begin

the rulemaking process. He then explained that the remaining four rules all dealt with drinking water treatment and Engineering Staff intend to work on those as a group and therefore they don't anticipate those coming back before the Board until 2017. Bernie also informed the Board that the rule revisions are intended to make the rules more useful to both water systems and the engineers.

6. **Rural Water Association Report – Dale Pierson**

Dale Pierson, Executive Director of the Rural Water Association of Utah (RWAU), passed out an organization chart for and reported on the following sections of RWAU.

- Field Staff: visit water systems and provides hands on assistance.
- Office Staff: provide support to employees, materials, marketing, etc.
- DDW Crew: provide administrative assistance directly within the Division.
- Training Staff: provide Operator and Cross Connection Certification training and testing.

Terry Smith, Management Technician with RWAU, went over, in more detail what each of the Field Staff employees duties are.

- Circuit Writer I, II & Wastewater: offer hands on assistance with fire hydrants, control valves and other hardware, onsite trainings and regulations, and visual inspections.
- Source water: assists with source water protection and planning.
- On-Site training regarding EPA's regulations.

Dale Pierson also iterated how important he feels the working relationship between RWAU and DDW are, that it is unique to the State of Utah, and benefits the State's water systems.

7. **Directors Report**

A. SDWA Retrospective

Ken Bousfield, Division Director of DDW, informed the Board that he included this article from the American Water Works Association (AWWA) as it gives a historical look at the Safe Drinking Water Act (SDWA), the costs and benefits of it, and future challenges that the author believes are a result of 9/11.

Paul Hansen noted that this article addresses the cost of compliance and expressed his appreciation to Division Staff for looking at rules and also taking that into consideration when revising them.

B. The Division's Planning Retreat, May 19, 2016

Ken then informed and invited the Board members to attend the Division's Planning Retreat on May 19, 2016 in room 1019B of the Multi Agency State Office Building (MASOB).

Division of Natural Resources, Agriculture, and Environment Interim Committee

Ken next informed the Board that he will be taking part in the Division of Natural Resources (DNR), Agriculture, and Environment Interim Committee that will take place on May 18,

2016. He will be talking on two topics, Collection and Use of Accurate Water Use Data and the Division's Minimum Source Sizing Requirements as a result of Legislative audits.

Tage Flint noted his support of the improved Water Use Data reporting.

Legislative Audit Report

Lastly Ken gave an update on the Legislative audit that related to the Division's Minimum Source Sizing requirements. He informed the Board that the Division has been directed to use \$1 million of the Federal SRF funds and \$.5 million from the State SRF funds in order to build the infrastructure necessary to do a statewide water use study.

8. Other

Betty Naylor, Board Vice Chairman, informed the Board that she will be retiring from the City of West Jordan after 38 years. Betty is not sure if this will affect her position on the Board and will research that and let Ken Bousfield know before the July 8, 2016 meeting.

9. Next Board Meeting:

Date: Friday, July 8, 2016
Time: To be Determined
Place: To be Determined

Optional locations for the Board to consider:

Greendale Water Company
Gunnison Town
Taylor West Weber

Michael Grange informed the Board that the options for the next meeting were locations that had completed projects that were funded through the SRF programs. Greendale Water Company was a new treatment plant, Gunnison Town was a treatment plant and arsenic removal system, and Taylor West Weber was wells, tanks, and pipeline.

After discussion the Board determined that it would like to tour the Greendale Water Company. Michael Grange stated that he would work on the arrangements for the tour and Board meeting.

10. Adjourn

- Paul Hansen moved to adjourn the meeting. The motion was carried unanimously by the Board.

The meeting adjourned at 2:45 pm.

In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Dana Powers, Office of Human Resources, at: (801) 499-2117, TDD (801) 903-3978, at least five working days prior to the scheduled meeting.

Agenda Item

4(A)

DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF May 31, 2016

SUMMARY		
	Total State Fund:	\$6,696,686
	Total State Hardship Fund:	\$710,202
	Subtotal:	\$7,406,888
LESS AUTHORIZED	Less:	
	Authorized Loans & Closed loans in construction:	\$2,378,000
	Authorized Hardship:	\$1,384,685
	Subtotal:	\$3,762,685
	Total available after Authorized deducted	\$3,644,203
PROPOSED	Proposed Loan Project(s):	\$165,404
	Proposed Hardship Project(s):	\$40,000
	Subtotal:	\$205,404
AS OF:		
May 31, 2016	TOTAL REMAINING STATE LOAN FUNDS:	\$4,153,282
	TOTAL REMAINING STATE HARDSHIP FUNDS:	(\$714,483)

(see Page 2 for details)

(see Page 2 for details)

Total Balance of ALL Funds: \$3,438,799

Projected Receipts Next Twelve Months: and Sales Tax Revenue	
Annual Maximum Sales Tax Projection	\$3,587,500
Less State Match for 2016 Federal Grant	(\$1,734,800)
Less Appropriation to DDW	(\$800,000)
Less Wtr Use Study Appropriation	(\$500,000)
Less Administration Fees	(\$150,800)
SUBTOTAL Sales Tax Revenue including adjustments:	\$401,900
Payment:	
Interest on Investments (Both Loan and Hardship Accounts)	\$43,200
Principal payments	\$3,442,654
Interest payments	\$934,176
Total Projections:	\$4,821,930

Receive 80% in January

Total Estimated State SRF Funds Available through 6-02-2017	\$8,260,729
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**DIVISION OF DRINKING WATER
STATE LOAN FUNDS
PROJECTS AUTHORIZED BUT NOT YET CLOSED
AS OF May 31, 2016**

Community	Loan #	Cost Estimate	Date Authorized	Date Closed/Anticipated	Authorized Funding		
					Loan	Grant	Total
Trenton Town 1.0% int, 30 yrs	3S234	1,263,000	Nov-15	Jun-16	731,000	0	731,000
Sterling City 2.52% int, 20 yrs	3S239	258,000	May-16		258,000		258,000
Subtotal Loans and Grants Authorized					989,000	0	989,000
PLANNING LOANS / GRANTS IN PROCESS							
Huntsville	3S202P	39,000	Sep-14		39,000		39,000
Eagle Mountain	3S228P	30,000	Aug-15		30,000		30,000
Hatch Town	3S232P	25,000	Aug-15	Sep-15	25,000		25,000
Springdale Town	3S214P	40,000	Jan-15	Mar-15		22,645	22,645
Cedarview-Montwell SSD	3S219P	65,000	May-15	Jun-15		27,085	27,085
LaVerkin City	3S223P	40,000	Jun-15	Jun-15		19,955	19,955
Parowan	3S227P	40,000	Jul-15	Sep-15		40,000	40,000
Weber County General	3S225P	40,000	Jun-15	Sep-15		40,000	40,000
Cove SSD	3S208P	40,000	Nov-14	Jun-16		40,000	40,000
					94,000	189,685	283,685
CLOSED LOANS (partially disbursed)							
Helper City 0% int 30 yrs	3S230	3,500,000	Jul-15	Oct-15	1,295,000	555,000	1,850,000
Daggett Co - Dutch John 0% int 30 yrs	3S216	1,020,000	Jan-15	Feb-16	0	640,000	640,000
							0
Subtotal Planning Loans/Grants Auth					1,295,000	1,195,000	2,490,000
Total authorized or closed but not yet funded					\$2,378,000	\$1,384,685	\$3,762,685
PROPOSED PROJECTS for MAY 2016							
Koosharem	3S238	40,000				40,000	40,000
Glen Canyon/Big Plains	3S240	165,404			165,404		165,404
							0
							0
Total Proposed Projects					165,404	40,000	205,404

**DIVISION OF DRINKING WATER
STATE LOAN FUNDS
AS OF May 31, 2016**

	5235	5240	
	Loan	Interest	
	Funds	(use for Grants)	Total
Cash:	\$6,696,686	\$710,202	\$7,406,888
Less:			
Loans & Grants authorized but not yet closed (schedule attached)	(1,083,000)	(189,685)	(1,272,685)
Loans & Grants closed but not fully disbursed (schedule attached)	(1,295,000)	(1,195,000)	(2,490,000)
Proposed loans & grants	(165,404)	(40,000)	(205,404)
Administrative quarterly charge for entire year	(150,800)		(150,800)
Appropriation to DDW	(800,000)		(800,000)
Appropriation to DDW - Wtr Use Study	(500,000)		(500,000)
FY 2016 Federal SRF 20% match of \$8,500,000	(1,734,800)		(1,734,800)
	967,682	(714,483)	253,199
Projected repayments during the next twelve months			
Thru 06-02-2017			
Principal	3,442,654		3,442,654
Interest		934,176	934,176
Projected annual investment earnings on invested cash balance		43,200	43,200
Sales Tax allocation thru Jun-02-2017	3,587,500		3,587,500
Total	\$7,997,836	\$262,893	\$8,260,729
* All interest is added to the Hardship Fee account.			

DIVISION OF DRINKING WATER
FEDERAL SRF
AS OF May 31, 2016

FIRST ROUND FUND		FEDERAL SECOND ROUND FUND		Hardship Fund
1997 thru 2015 SRF Grants		Principal Repayments	Earnings on Invested Cash Balance	Total:
Net Federal SRF Grants:	\$151,240,641	Principal (P):	\$43,396,475	Total: \$1,161,048
Total State Matches:	\$33,374,100	Interest (I):	\$12,116,381	
Closed Loans:	-\$184,614,741	Total P & I:	\$55,512,856	Total: \$2,849,224
Total Grant Dollars:	\$0			

SUMMARY		
	Total Federal State Revolving Fund:	\$56,673,904
	Total Federal Hardship Fund:	\$2,849,224
	Subtotal:	\$59,523,128
LESS AUTHORIZED & PARTIALLY DISBURSED	Less:	
	Authorized & Partially Disbursed Closed Loans:	\$42,735,267
	Authorized Federal Hardship:	\$3,680,018
	Subtotal:	\$46,415,285
		(see Page 2 for details)
PROPOSED	Proposed Federal Project(s):	\$2,932,000
	Proposed Federal Hardship Project(s):	\$39,000
	Subtotal:	\$2,971,000
		(see Page 2 for details)
AS OF:	TOTAL REMAINING LOAN FUNDS:	\$11,006,637
May 31, 2016	TOTAL REMAINING HARDSHIP FUNDS:	-\$869,794

Total Balance of ALL Funds after deducting proposed actions: \$10,136,844

Projected Receipts thru June 1, 2017	
2016 Fed SRF Grant	\$5,903,760
2016 State Match	\$1,734,800
Interest on Investments	\$339,600
Principal Payments	\$6,256,246
Interest	\$1,381,205
Hardship & Technical Assistance fees	\$352,681
Total:	\$15,968,292

} Receive 60% in January

Total Estimated Federal SRF Funds Available through: 06/01/2017 **\$26,105,136**

DIVISION OF DRINKING WATER FEDERAL STATE REVIVING FUND									
PROJECTS AUTHORIZED BUT NOT YET CLOSED AS OF May 31, 2016									
COMMUNITY	Project			Authorized Date	Closing Date Scheduled	Authorized From Loan Funds (1st or 2nd Round)			Hardship Fund
	Total Project	Terms	Loan #			Loan	Forgiveness	Total	
West Erda Improvement District	1,622,600	0% int, 30 yr	3F233	Nov-14	Jul-17	811,000	811,600	1,622,600	
Liberty Pipeline Company	699,000	2.83% 20 years (LOF \$6,990)	3F236	May-15		699,000		699,000	
Fillmore City	2,552,000	2.45%, 20 yrs (LOF \$21,520)	3F239	Sep-15		2,152,000		2,152,000	
Fairfield Culinary Wtr System	1,180,000	0% int, 30 yrs	3F252	Jan-16		580,000	580,000	1,160,000	
Eagle Mountain City	3,366,805	1.8% int/hgf, 20 yrs	3F254	Jan-16	May-17	2,895,000		2,895,000	
Juab Co 2.5% hgf, 30 yrs	27,210,000	2.5% int/hgf, 30 yrs	3F259	Mar-16		21,210,000		21,210,000	
North Fork SSD 2% int 20 yrs	2,397,000	2% int, 20 yrs	3F260	Mar-16		2,199,000		2,199,000	
Corinne City	561,000	2.85% int/hgf, 20 yrs	3F266	May-16		448,000	113,000	561,000	
Springdale	5,654,000	1.25% int, 30 yrs	3F264	May-16	Apr-17	3,856,000	1,652,350	5,508,350	
Wellington	1,063,000	2.62% int/hgf, 30 yrs	3F265			851,000	212,000	1,063,000	
Greenwich Water Company	130,000	65K loan at 0%, 30 yrs/ 65K pf	3F258	Mar-16				0	65,000
Cedar Point - Big Plains	83,000	0.0% 5 yrs \$42,000 PF Aquafer study	3F224P	May-14				0	83,000
Central Iron County WCD	100,000	0.0% 5 yrs \$50,000 PF Aquafer study	3F230	Nov-14				0	100,000
Bear River WCD	200,000	Master Plan	3F253P	Jan-16	Jul-16			0	200,000
Trenton Town	732,000	state grant w/731,000 loan	3S234	Nov-15				0	732,000
Echo Mutual Wtr System	36,219	100% pf	3F267	May-16				0	35,857
Water Use Study	1,000,000	Legislature Appropriated		Mar-16	Jul-16				1,000,000
TOTAL CONSTRUCTION AUTHORIZED:						\$ 35,701,000	\$ 3,368,950	\$ 39,069,950	\$ 2,215,857
COMMITTED PLANNING ADVANCES / AGREEMENTS or PARTIALLY DISBURSED CLOSED 2ND ROUND AGREEMENTS:									
					Date Closed				
Rural Water Assn of Utah	124,758	5 yr contract for Development Specialist	Ongoing	Nov-12	Jan-13			0	0
Eureka	694,095	100% Principal Forgiveness	3F235	May-15	Jun-15			0	276,893
Joseph Town	40,000	pl 100% pf	3F245P	Sep-15	Oct-15			0	40,000
Orderville Town	40,000	pl 100% pf	3F241P	Sep-15	Dec-15			0	40,000
Daniel Municipal Water	25,000	0.0% 5 yrs planning study 100% pf	3F250P	Dec-15	Jan-16			0	5,538
Virgin Town	40,000	pl 100% pf	3F244P	Sep-15	Oct-15			0	40,000
Bluffdale City	40,000	pl 100% pf	3F242P	Sep-15	Nov-15			0	40,000
Elsinore	45,000	pl 100% pf	3F243P	Nov-15				0	45,000
Torrey Town	40,000	pf	3F248P	Nov-15				0	40,000
Loa Town	39,000	PF	3F251P	Nov-15	Feb-16			0	39,000
Woodland Mutual Wtr Co	25,000	pf	3F256P	Jan-16	Mar-16			0	25,000
Glendale Town	37,500	pf	3F261P	Mar-16	Apr-16			0	37,500
Old Irontown POA	37,000	pf	3F262P	Mar-16	Apr-16			0	37,000
Freemont Waterworks	40,000	pl 0% int 5 yrs	3F257P	Jan-16				0	40,000
Greenwich Water Company	130,000	65K loan at 0%, 30 yrs/ 65K pf	3F258	Mar-16	Jun-16			0	65,000
Woodenshoe Water Company	413,292	100% pf	3F247	Nov-15	Jun-16			0	413,292
Forest Glen Plat A HOA	1,438,986	0% int, 30 yrs	3F222	Feb-14	Dec-14	360,000	163,986	523,986	
Kane Co WCD-Johnson	1,401,020	1.93% int, 30 yrs	3F165	Mar-11	Dec-11	277,000	73,000	350,000	
Herriman	1,528,000	2.25% int, 20 yrs	3F194	Mar-12	May-15	200,000		200,000	
Taylor West Weber Water Improvement Dist	7,636,391	2.26% int, 30 yr	3F234	Feb-15	Apr-15	2,591,331	0	2,591,331	
TOTAL PLANNING AUTHORIZED:						\$3,428,331	\$236,986	\$3,665,317	\$1,464,161
TOTAL CONSTRUCTION & PLANNING:								\$42,735,267	\$3,680,018
AVAILABLE PROJECT FUNDS:								\$13,938,637	
AVAILABLE HARDSHIP FUNDS:								-\$830,794	
PROPOSED PROJECTS FOR JULY 2016:									
Thatcher Penrose	110,000		3F269					110,000	
Glen Canyon/Big Water	1,228,000	2.45% int/fee, 30 yrs	3F270			1,052,000	176,000	1,228,000	
Panguitch City	39,000		3F268P					-	39,000
Virgin Town	1,120,000	0% int, 30 yrs	3F272			1,120,000		1,120,000	
Irontown	474,000	0% int, 30 yrs	3F271			474,000		474,000	
TOTAL PROPOSED PROJECTS FOR THIS MEETING:						\$2,646,000	\$176,000	\$2,932,000	\$39,000
*RWAU hardship grant is being disbursed monthly									
TOTAL FUNDS AFTER PROPOSED PROJECTS ARE FUNDED:								\$11,006,637	
TOTAL FUNDS AFTER PROPOSED HS PROJECTS ARE FUNDED:								-\$869,794	
Total Recent Loan Closings						\$0	\$0	\$0	\$0

**DIVISION OF DRINKING WATER
FEDERAL SRF LOAN FUNDS
AS OF May 31, 2016**

	Loan Funds 1st Round	Loan Payments			TOTAL
		2nd Round		Hardship Fund	
		Principal	Interest		
Federal Capitalization Grants and State 20% match thru 2015	\$184,614,741				
Earnings on Invested 1st Round Funds			1,161,048		
Repayments (including interest earnings on 2nd round receipts)		43,396,475	12,116,381	2,849,224	244,137,869
Less:					
Closed loans and grants	-184,614,741				-184,614,741
SUBTOTAL of Funds Available	\$0	\$43,396,475	\$13,277,429	\$2,849,224	\$59,523,128
Loans & Grants authorized but not yet closed or fully disbursed	-36,289,950	-6,208,331	-236,986	-3,680,018	-46,415,285
SUBTOTAL of Funds Available less Authorized	-\$36,289,950	\$37,188,144	\$13,040,443	-\$830,794	\$13,107,844
Future Estimates:					
Proposed Loans/Grants for current board package	-2,932,000			-39,000	-2,971,000
SUBTOTAL of Funds Available less Proposed Loans & Grants	-\$39,221,950	\$37,188,144	\$13,040,443	-\$869,794	\$10,136,844
PROJECTIONS THRU June-2017					
	0				
2016 SRF Capitalization Grant (Loan Portion)	5,903,760				
2016 SRF Capitalization State Match	1,734,800				
Projected repayments & revenue during the next twelve months		6,256,246	1,381,205	352,681	7,990,132
Projected annual investment earnings on invested cash balance		306,000	13,200	20,400	339,600
TOTAL	-\$31,583,390	\$43,750,390	\$14,434,848	-\$496,712	\$26,105,136

Agenda Item

4(B)

**DRINKING WATER BOARD
PACKET FOR PROJECT PRIORITY LIST**

There are four new projects being added to the Project Priority List:

Old Irontown is being added to the Project Priority List with 43.3 points. Their project consists of a new 300,000 gallon tank and a transmission line.

Virgin Town is being added to the Project Priority List with 41.4 points. Their project consists of a new 500,000 gallon tank and transmission line.

Big Water Town is being added to the Project Priority List with 18.5 points. Their project consists of refurbishing a tank, radio read meters and a distribution line

Thatcher Penrose is being added to the Project Priority List with 8.1 points. Their project consists of a water line replacement.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board approve the updated Project Priority List.

May 18, 2016

Utah Federal SRF Program

Project Priority List

				Priority Points	Total Unmet Needs: \$247,990,863			Total Needs, incl. Recent funding \$257,969,755		Authorized \$229,368,468	
N	date	type	%Green		System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
N				43.5	Wellington City	Carbon	1,676	New 750,000-gallon Storage Tank	\$1,006,167.00	1,006,167	
N				43.3	Old Irontown POA	Iron	90	New 300,000-gallon tank and transmission line	\$478,788	478,788	
N				41.4	Virgin Town	Washington	750	New 500,000-gallon tank and transmission line	\$1,131,313	1,131,313	
N				22.8	Old Meadows	Iron	41	Replace Distribution System	\$338,747	413,292	
N				18.5	Big Water Town	Kane	480	Refurbish Tank, radio read meters, distribution line	\$1,287,185	413,292	
N				8.1	Thatcher Penrose SD	Box Elder	580	Water line replacement	\$129,400	110,000	
A				90.5	North Fork SSD	Utah	1,500	New tank and well	\$2,408,354	2,210,350	
A				82.6	West Erda	Tooele	158	Connect West Erda and Tooele Airport to Erda Acres	\$1,801,331.00	1,801,331	\$1,622,600
A				72.3	Springdale	Washington	572	Treatment Plant	\$4,730,000	4,600,000	
A				32.2	Fairfiled Culinary Water System	Utah	35	New well, pump station, tank	\$1,130,000	565,000	\$1,160,000
A				25.5	Fillmore City	Millard	2,260	Water Line Replacement	\$2,555,556	2,555,556	\$2,152,000
A				22.5	White Hills Water	Utah	419	Water line replacement, tank rehab, new PRV	\$1,047,168	1,047,168	\$1,037,000
A				21.6	Wooden Shoe	Summit	47	Replace Distribution System	\$413,292	413,292	\$413,292
N				20.6	Corinne City	Box Elder	700	Radium Filter, Spring Rehab, Transmission Line	\$561,111.00	561,111	
A				18.3	Greenwich	Piute	67		\$131,300	131,300	
A				11.4	Eagle Mountain	Utah	25,593	New water line and pump station	\$3,395,763	2,895,763	\$2,895,000
A				9.7	Juab Co	Juab	???	Regionalization pipeline	\$24,000,000	21,000,000	
A				7.9	Echo Mutual Water System	Summit	50	Radium Filter, Spring Rehab, Transmission Line	\$35,857.00	35,857	
A				4.8	Liberty Pipeline Company	Weber	2,504	New Well	\$743,954	\$698,647	\$699,000

N = New Application

A = Authorized

P = Potential Project- no application

E= Energy Efficiency

W= Water Efficiency

G= Green Infrastructure

I= Environmentally Innovative

GREEN PROJECTS

EMERGENCY FUNDING

N	100	Trenton Town	Cache	466	Spring Re-development	\$401,150.00	\$241,150
N	100	Marble Hills	Box Elder	250	Pump replacement	\$152,167.00	\$28,170

POTENTIAL PROJECTS

May 18, 2016

Utah Federal SRF Program

Project Priority List

Authorized

Total Unmet Needs:

\$247,990,863

Total Needs, incl. Recent funding

\$257,969,755

\$229,368,468

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
P				125.2	Soldier Summit SSD-2nd home sub	Utah	33	Water line upgrade	\$530,303	\$530,303	
P				36.4	Santa Clara (on hold)	Washington	8,000	Water line upgrades	\$6,419,202	\$6,354,202	
P				35.0	CUWCD-Utah Valley	Utah		Treatment plant upgrades	\$39,369,500	\$36,950,000	
P				24.4	Jordan Valley WCD	Salt Lake	82,500	Treatment	\$3,200,000		
P				20.0	Pinon Forest	Duchesne	n/a	New system- residents haul water	\$21,247,000		
P				17.9	Wendover	Tooele	1,600	Water line upgrades	\$833,000		
P				17.5	Draper City	Salt Lake	15,000	Storage and distribution upgrades	\$35,789,000		
P				17.1	East Zion SSD	Kane	49	Water line	\$128,876	\$128,876	
P				16.4	Eastland SSD	San Juan	60	New well for back up purposes	\$500,000		
P				16.4	Neola	Duchesne	840	Waterline upgrades, storage, source improvements	\$3,607,592	\$3,607,592	
P				15.3	Newton Town	Cache	799	Spring rehabilitation, water line upgrades	\$1,581,500		
P				15.3	South Rim Water	Tooele	264	Well equipment and house, new tank	\$600,000		
P				15.2	Midvalley Estates Water Company	Iron	700	Source, storage, distribution	\$500,000		
P				15.1	Syracuse	Davis	25,200	Water line upgrades	\$1,589,756	\$1,589,756	
P				14.7	Central Waterworks Co.	Sevier	450	Storage and distribution upgrades	\$1,400,000		
P				14.0	Herriman	Salt Lake	18,431	Booster Pump, water line	\$2,050,000		
P				13.7	Cornish Town	Cache	300	Connect to Lewiston, rehab well	\$1,226,263		
P				13.7	Morgan City	Morgan	3,250	Water line upgrades	\$692,026		
P				13.5	Riverdale	Weber	8,200	New well and tank, water line upgrades	\$2,050,000		
P				13.3	Richfield City	Sevier	7,111	System repairs	\$2,722,000		
P				13.0	Uintah City	Weber	1,300	Treatment	\$1,063,000		
P				12.8	Centerfield	Sanpete	1,200	New tank, upgrade water lines	\$3,600,000		
P				12.6	Enterprise	Washington	1,500	New tank, upgrade water lines	\$1,917,100		
P				12.6	Price River	Carbon	7,659	New tank, water lines, treatment	\$2,750,000		
P				11.6	Manila Culinary Water Co.	Utah	2,450	Treatment and water line upgrades	\$700,000		
P				11.6	Jordan Valley WCD	Salt Lake	82,500	Flouride facility, well equipping	\$3,694,000	\$2,000,000	
P				11.4	Pineview West Water Company	Weber	115	Telemetry system	\$25,000		
P				11.4	North Ogden City	Weber	15,000	Water line upgrades	\$746,000	\$746,000	
P				11.3	Farmington	Davis	15,000	New well, new tank, water line replacement	\$2,830,000		
P				10.7	Ogden City	Weber	77,000	Source rehabilitation, treatment plant upgrades	\$26,500,000		
P				10.7	High Valley Water Company	Summit	850	Water line upgrades	\$1,000,000		
P				10.3	City of Monticello	San Juan	2,000	Storage and distribution upgrades	\$1,200,000		
P				9.8	Gorgoza	Summit	4,200	Waterline upgrades	\$1,000,000		
P				9.7	Moutain Regional SSD	Summit	6,700	Transmission line	\$600,000		

May 18, 2016

Utah Federal SRF Program

Project Priority List

				Priority Points	Total Unmet Needs: \$247,990,863			Total Needs, incl. Recent funding \$257,969,755			Authorized \$229,368,468
	date	type	%Green		System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
P				9.7	Benson Culinary Water District	Cache	743	New tank, water line replacement	\$500,000		
P				9.3	Mapleton City	Utah	7,300	Replace distribution lines	\$15,339,560		
P				9.2	Greendale Water Co.	Daggett	500	Treatment system	\$800,000		
P				9.1	Center Creek	Wasatch	200	Pump house and pump	\$80,000		
P				8.4	Nibley City	Cache	4,300	New tank	\$1,270,355		
P				8.3	Hurricane	Washington	8,000	Water line replacement and new tank	\$5,047,899		
P				7.6	Harmony Farms Water User Assoc.	Washington	300	Water line Replacement	\$3,000		
P				6.8	Hooper Water Improvement District	Weber	16,520	Storage, water lines, treatment	\$2,887,000		
P				6.7	Centerville City	Davis	16,000	Replacement well, water line upgrades	\$2,965,000		
P				6.1	Marble Hill Water Company	Box Elder	250	New storage tank	\$225,000		
P				4.5	Peterson Pipeline Association	Morgan	450	Source, storage, distribution	\$1,700,000		
P				4.5	Perry City	Box Elder	4,603	Source, storage, distribution	\$4,782,220		
P				3.9	Wolf Creek Country Club	Weber	2,000	Water line	\$180,000		
P				3.4	Highland City	Utah	15,066	New well houses	\$650,000		

Agenda Item

4(C)(i)(a)

**DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN**

APPLICANT'S REQUEST:

Big Plains Sewer and Water Special Service District has a project consisting of upgraded well house, and transmission line. The cost of the project is estimated at \$176,000.

STAFF COMMENTS:

The local MAGI for Apple Valley is \$32,468 (77% of the state MAGI), and their after project water bill is 2.36% of the local MAGI. Therefore they do qualify to receive grant money.

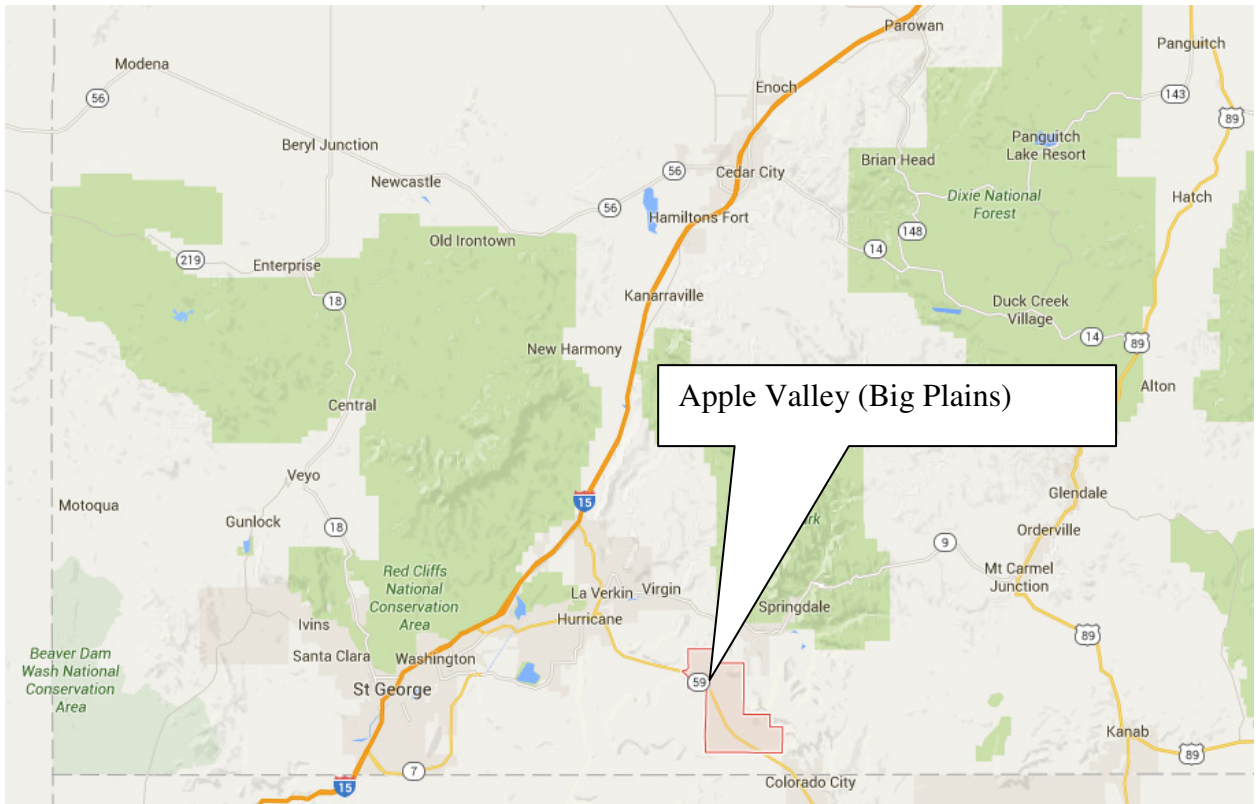
FINACIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize \$88,000 construction loan with an interest rate of 0% for 20 years and \$88,000 in grant. Conditions include that they resolve all issues on their compliance report, namely missing lead and copper sampling.

APPLICANT'S LOCATION:

The District is located in Apple Valley in Washington County approximately 30 miles east of St. George.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

The project consists of upgraded well house, and transmission line.

POPULATION GROWTH:

According to their application, Apple Valley is expected to grow at an average annual rate of less than 1% over the next 20 years. Projected populations and number of connections are shown in the table below:

Year	Population	Connections
2020	742	330
2025	764	340
2030	787	350
2035	810	362

IMPLEMENTATION SCHEDULE:

FA Committee Conference Call:	Jun 2016
DWB Funding Authorization:	July 2016
Complete Design:	Aug 2016
Plan Approval:	Aug 2016
Advertise for Bids:	Aug 2016
Loan Closing:	Sept 2016
Begin Construction:	Sept 2016
Complete Construction:	Dec 2016
Operating Permit:	Jan 2017

COST ESTIMATE:

Legal – Bonding, Admin	\$20,000
Engineering - Design, CMS	\$18,750
Construction	\$125,000
Contingency	\$12,000
DDW Admin Fee	\$0
Total Project Cost	\$175,750

COST ALLOCATION:

The cost allocation proposed for the project is shown below:

<u>Funding Source</u>	<u>Cost Sharing</u>	<u>Percent of Project</u>
DWB Loan (0%, 20-yr)	\$88,000	50%
DWB Grant	\$88,000	50%
Self-Contribution	\$0	0%

ESTIMATED ANNUAL COST OF WATER SERVICE:

Operation and Maintenance	\$94,522
Existing DW Debt Service	\$110,117
DDW Debt Service (0%, 20 yrs):	\$4,400
DDW Debt Reserve (10%):	\$440
DDW Coverage (15%):	n/a
Replacement Reserve Account (5%):	\$10,452
Annual Cost/ERC:	\$766
Monthly Cost/ERC:	\$63.84
Cost as % MAGI:	2.36%

CONTACT INFORMATION:

APPLICANT:

Big Plains Sewer & Water SSD
177 N Meadowlark Dr
Apple Valley, UT 84737
435-877-1190

**PRESIDING OFFICIAL &
CONTACT PERSON:**

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Chairman
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RECORDER:

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FINANCIAL CONSULTANT:

n/a

CITY ATTORNEY:

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BOND ATTORNEY:

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DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Big Plains SWSSD
 COUNTY: Iron
 PROJECT DESCRIPTION: well house and transmission line

FUNDING SOURCE: State SRF

50 % Loan & 50 % Grant

ESTIMATED POPULATION:	720	NO. OF CONNECTIONS:	323 *	SYSTEM RATING:	Corrective Action
CURRENT AVG WATER BILL:	\$59.21 *			PROJECT TOTAL:	\$176,000
CURRENT % OF AGI:	2.19%	FINANCIAL PTS:	64	LOAN AMOUNT:	\$88,000
ESTIMATED MEDIAN AGI:	\$32,468			GRANT AMOUNT:	\$88,000
STATE AGI:	\$41,923			TOTAL REQUEST:	\$176,000
SYSTEM % OF STATE AGI:	77%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.48%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.48%		0.00%
REQUIRED DEBT SERVICE:	\$4,400.00	\$6,180.57		\$4,400.00
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$440.00	\$618.06		\$440.00
ANNUAL NEW DEBT PER CONNECTION:	\$14.98	\$21.05		\$14.98
O & M + FUNDED DEPRECIATION:	\$94,522.00	\$94,522.00		\$94,522.00
OTHER DEBT + COVERAGE:	\$137,646.25	\$137,646.25		\$137,646.25
REPLACEMENT RESERVE ACCOUNT:	\$10,451.95	\$10,540.98		\$10,451.95
ANNUAL EXPENSES PER CONNECTION:	\$751.15	\$751.42		\$751.15
TOTAL SYSTEM EXPENSES	\$247,460.20	\$249,507.86		\$247,460.20
TAX REVENUE:	\$6,000.00	\$6,000.00		\$6,000.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$63.84	\$64.37		\$63.84
% OF ADJUSTED GROSS INCOME:	2.36%	2.38%		2.36%

* Equivalent Residential Connections

R309-700-5

Big Plains SWSSD
Iron
May 25, 2016

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	
B. \$501 to \$1,500	14	X
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	
E. \$3,001 to \$5,000	4	
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	
	\$545	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	
B. 71 to 80% of State Median AGI	16	X
C. 81 to 95% of State Median AGI	13	
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	77%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	X
	0.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	
b. 2.01 to 2.50% of local median AGI	12	X
c. 1.51 to 2.00% of local median AGI	8	
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	
	2.36%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	
C. Is creating or enhancing a regionalization plan	16	X
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	64	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Big Plains SWSSD

PROPOSED BOND REPAYMENT SCHEDULE

50 % Loan & 50 % Grant

PRINCIPAL	\$88,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	0.00%	FIRST P&I PAYMENT DUE	15-Sep-17
TERM	20	REVENUE BOND	
NOMIN. PAYMENT	\$4,400.00	GRANT AMOUNT:	\$88,000.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2016	\$88,000.00		\$0.00 *	\$0.00	\$0.00	\$88,000.00	0
2017	\$88,000.00		\$4,000.00	\$4,000.00	\$0.00	\$84,000.00	1
2018	\$84,000.00		\$4,000.00	\$4,000.00	\$0.00	\$80,000.00	2
2019	\$80,000.00		\$4,000.00	\$4,000.00	\$0.00	\$76,000.00	3
2020	\$76,000.00		\$4,000.00	\$4,000.00	\$0.00	\$72,000.00	4
2021	\$72,000.00		\$4,000.00	\$4,000.00	\$0.00	\$68,000.00	5
2022	\$68,000.00		\$4,000.00	\$4,000.00	\$0.00	\$64,000.00	6
2023	\$64,000.00		\$4,000.00	\$4,000.00	\$0.00	\$60,000.00	7
2024	\$60,000.00		\$4,000.00	\$4,000.00	\$0.00	\$56,000.00	8
2025	\$56,000.00		\$4,000.00	\$4,000.00	\$0.00	\$52,000.00	9
2026	\$52,000.00		\$4,000.00	\$4,000.00	\$0.00	\$48,000.00	10
2027	\$48,000.00		\$4,000.00	\$4,000.00	\$0.00	\$44,000.00	11
2028	\$44,000.00		\$4,000.00	\$4,000.00	\$0.00	\$40,000.00	12
2029	\$40,000.00		\$5,000.00	\$5,000.00	\$0.00	\$35,000.00	13
2030	\$35,000.00		\$5,000.00	\$5,000.00	\$0.00	\$30,000.00	14
2031	\$30,000.00		\$5,000.00	\$5,000.00	\$0.00	\$25,000.00	15
2032	\$25,000.00		\$5,000.00	\$5,000.00	\$0.00	\$20,000.00	16
2033	\$20,000.00		\$5,000.00	\$5,000.00	\$0.00	\$15,000.00	17
2034	\$15,000.00		\$5,000.00	\$5,000.00	\$0.00	\$10,000.00	18
2035	\$10,000.00		\$5,000.00	\$5,000.00	\$0.00	\$5,000.00	19
2036	\$5,000.00		\$5,000.00	\$5,000.00	\$0.00	\$0.00	20
			\$88,000.00	\$88,000.00	\$0.00		

*Interest Only Payment

Big Plains SWSSD

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	88,000
DWB Loan Amount:	\$	88,000
DWB Loan Term:		20
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	4,400

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	176,000
Existing Facility O&M Expense:	\$	94,522
Proposed Facility O&M Expense:	\$	94,522
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	110,117

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		323
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	12,000
Current Monthly User Charge:	\$	59.21
Needed Average Monthly User Charge:	\$	63.84

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	3	323	229,500	36,000	6,000	271,500	-	-	88,000	-	-	110,117	94,522	204,639	-
1	1.0%	3	326	249,759	36,000	6,000	291,759	4,000	440	84,000	4,000	-	110,117	94,522	209,079	1.73
2	1.0%	3	329	252,057	36,000	6,000	294,057	4,000	440	80,000	4,000	-	110,117	95,467	210,024	1.74
3	1.0%	4	333	255,122	48,000	6,000	309,122	4,000	440	76,000	4,000	-	110,117	96,422	210,979	1.86
4	1.0%	3	336	257,420	36,000	6,000	299,420	4,000	440	72,000	4,000	-	110,117	97,386	211,943	1.77
5	1.0%	3	339	259,718	36,000	6,000	301,718	4,000	440	68,000	4,000	-	110,117	98,360	212,917	1.78
6	1.0%	4	343	262,783	48,000	6,000	316,783	4,000	440	64,000	4,000	-	110,117	99,344	213,901	1.91
7	1.0%	3	346	265,081	36,000	6,000	307,081	4,000	440	60,000	4,000	-	110,117	100,337	214,894	1.81
8	1.0%	4	350	268,146	48,000	6,000	322,146	4,000	440	56,000	4,000	-	110,117	101,340	215,897	1.93
9	1.0%	3	353	270,444	36,000	6,000	312,444	4,000	440	52,000	4,000	-	110,117	102,354	216,911	1.84
10	1.0%	4	357	273,509	48,000	6,000	327,509	4,000	440	48,000	4,000	-	110,117	103,377	217,934	1.96
11	1.0%	3	360	275,807	36,000	6,000	317,807	4,000	440	44,000	4,000	-	110,117	104,411	218,528	1.87
12	1.0%	4	364	278,872	48,000	6,000	332,872	4,000	440	40,000	4,000	-	110,117	105,455	219,572	1.99
13	1.0%	4	368	281,936	48,000	6,000	335,936	5,000	5,000	35,000	5,000	-	110,117	106,510	221,627	1.99
14	1.0%	3	371	284,234	36,000	6,000	326,234	5,000	5,000	30,000	5,000	-	110,117	107,575	222,692	1.90
15	1.0%	4	375	287,299	48,000	6,000	341,299	5,000	5,000	25,000	5,000	-	110,117	108,651	223,768	2.02
16	1.0%	4	379	290,364	48,000	6,000	344,364	5,000	5,000	20,000	5,000	-	110,117	109,737	224,854	2.04
17	1.0%	4	383	293,428	48,000	6,000	347,428	5,000	5,000	15,000	5,000	-	110,117	110,834	225,951	2.06
18	1.0%	3	386	295,726	36,000	6,000	337,726	5,000	5,000	10,000	5,000	-	110,117	111,943	227,060	1.96
19	1.0%	4	390	298,791	48,000	6,000	352,791	5,000	5,000	5,000	5,000	-	110,117	113,062	228,179	2.08
20	1.0%	4	394	301,855	48,000	6,000	355,855	5,000	5,000	-	5,000	-	110,117	114,193	229,310	2.10

Total Paid in Debt Service = 88,000 -

Utah Department Of Environmental Quality

Division Of Drinking Water

APPLE VALLEY BIG PLAINS	PWS ID: UTAH27069	Rating: Corrective Action	01/05/2015	Active
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Legal Contact	Site Updates	Consumptive Use Zone
DALE ERNEST HARRIS	Last Inventory Update: 01/05/2016	Irrigation Zone: 5
	Last Surveyor Update: 12/09/2015	Date: 02/15/2013
Phone:	Surveyor: KLINTON A FREI	
County: WASHINGTON COUNTY	Operating Period: 1/1 - 12/31	
System Type: Community	Last IPS Update: 05/30/2016 07:00:00	
Population: 718		

Admin Contacts

Name	Title	Office	Emergency	Email
HARRIS, DALE ERNEST		435-877-1190	435-632-8358	dharris@applevalleyut.gov

IPS Report

IPS Summary

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certification	Significant Deficiency
9	-1	20	-10	0

Physical Facility Points

Code	Description	Severity	Point Effective			
M001	CURRENT EMERGENCY RESPONSE PROGRAM REC		-10			
Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed	
			07/14/2009		-10	
R001	INADEQUATE BACTERIOLOGICAL SAMPLING SITE PLAN	MIN	5			
Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed	
			12/09/2015		5	
V004	STORAGE FACILITY INADEQUATE LADDERS OR RAILINGS	MIN	2			
Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed	
ST001	STORAGE FACILITY ST001	Active	07/14/2009		2	
ST002	STORAGE FACILITY ST002	Active	12/09/2015		2	
V005	STORAGE FACILITY VENT NOT TURNED DOWN	MIN	2			
Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed	
ST001	STORAGE FACILITY ST001	Active	07/14/2009		2	
ST002	STORAGE FACILITY ST002	Active	07/14/2009		2	

Total Effective Points: -1

Lead Copper Monitoring And Quality Violations

Violation No.	Period	Code	Description/Name	Point Effective
2016-9014407	01/01/2013 - 12/31/2015	52	FOLLOW-UP OR ROUTINE TAP M/R (LCR)	20
Total Effective Points: 20				

Operator Certification Points

Type	Level Required	Highest Certificate	Point Effective
Distribution	Dist 1	Dist 2	-10
Treatment			0
Total Effective Points: -10			

Utah Department Of Environmental Quality

Division Of Drinking Water

**BIG PLAINS SEWER AND
WATER SSD**
PWS ID: UTAH27089
Rating: Approved
07/22/2014
Active
Legal Contact

DALE ERNEST HARRIS
,
Phone:
County: WASHINGTON COUNTY
System Type: Community
Population: 100

Site Updates

Last Inventory Update: 01/05/2016
Last Surveyor Update: 12/09/2015
Surveyor: KLINTON A FREI
Operating Period: 1/1 - 12/31
Last IPS Update: 05/30/2016 07:00:00

Consumptive Use Zone

Irrigation Zone: 5
Date: 02/15/2013

Admin Contacts

Name	Title	Office	Emergency	Email
HARRIS, DALE ERNEST		435-877-1190	435-632-8358	dharris@applevalleyut.gov

IPS Report

IPS Summary

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certification	Significant Deficiency
11	1	20	-10	0

Physical Facility Points

Code	Description	Severity	Point Effective
S015	WELL LACKS A MEANS TO MEASURE DRAWDOWN	MIN	1

Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed
WS002 JESSUP WELL	ON SITE BUT NOT INSTALLED. SCHEDULED TO BE INSTALLED BEFORE THE END OF THE YEAR	Active	12/09/2015		1

Total Effective Points: 1
Lead Copper Monitoring And Quality Violations

Violation No.	Period	Code	Description/Name	Point Effective
2016-26300	07/01/2015 - 12/31/2015	52	FOLLOW-UP OR ROUTINE TAP M/R (LCR)	20

Total Effective Points: 20
Operator Certification Points

Type	Level Required	Highest Certificate	Point Effective
Distribution	Small System	Dist 2	-10
Treatment			0

Total Effective Points: -10

Agenda Item

4(C)(i)(b)

**DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN**

APPLICANT'S REQUEST:

The Town of Koosharem is requesting \$40,000 to install an epoxy coating liner on the inside of an existing concrete drinking water storage tank that is leaking. If bids come in low enough, they will also repair a second concrete tank that is starting to show signs of wear. Total project cost is estimated to be \$80,000 and Koosharem is contributing \$40,000 to the project.

STAFF COMMENTS:

The leaking tank was noted during a Division of Drinking Water inspection on April 6, 2016 and corresponding IPS points for a significant deficiency were issued.

The Median Adjusted Gross Income (MAGI) for Koosharem is \$34,441, which is 82% of the State MAGI of \$41,923. The average water bill for Koosharem is approximately \$21 per month, which is 0.74% of the local MAGI.

The closing costs for a \$40,000 loan would be substantial in comparison to the loan amount. The potential health risk of the leaking tank is high, and the bonding requirements of a loan would add a few more months to the funding process. Staff feels that these factors should be considered when determining grant qualifications.

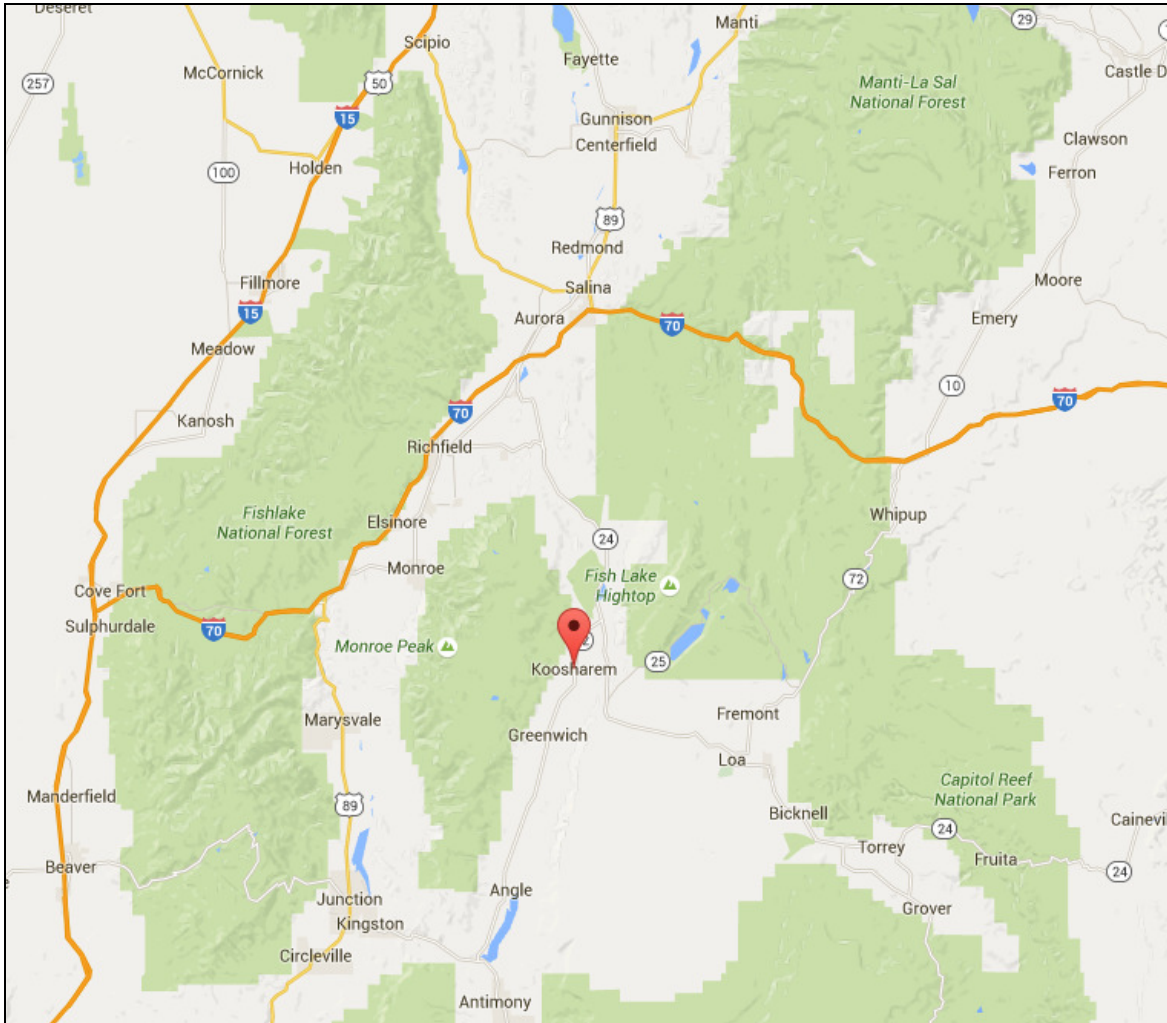
The Financial Assistance Committee requested more information about the proposed tank liner and whether a Xypex type of coating had been considered. The applicant's consulting engineer clarified that the planned liner is an epoxy type coating and that in his experience, Xypex will not be effective in this specific case. The liner is intended to last for at least 20 years.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a \$40,000 grant to the Town of Koosharem for installation of a storage tank liner/coating.

APPLICANT'S LOCATION:

Koosharem is located in Sevier County.



PROJECT DESCRIPTION:

Install an epoxy type coating\liner in Tank #1 (ST001) that was found to have “seeps on tank walls” in April 2016, and also coat a second tank if bids come in low enough.

POPULATION GROWTH:

An annual average rate of change of 1% is used in the following population projections.

	<u>Year</u>	<u>Population</u>
Current:	2016	334
Projected:	2036	408

IMPLEMENTATION SCHEDULE:

Apply to DWB for Construction Funds:	Apr 2016
SRF Committee Conference Call:	June 2016
DWB Funding Authorization:	July 2016
Complete Design:	July 2016
Plan Approval:	Aug 2016
Advertise for Bids:	Aug 2016
Bid Opening:	Aug 2016
Loan Closing:	Sept 2016
Begin Construction:	Sept 2016
Complete Construction:	Oct 2016
Receive Operating Permit:	Oct 2016

COST ESTIMATE:

Construction (including 10% Contingency):	\$69,000
Engineering - Planning	\$1,500
Engineering - Design	\$6,000
Engineering - Construction Management	\$3,500
<u>Total Cost:</u>	<u>\$80,000</u>

COST SHARING:

<u>Funding Source</u>	<u>Funding Amount</u>	<u>Percent of Project</u>
DW Board	\$ 40,000	50%
Koosharem	\$ 40,000	50%
<u>Total Amount</u>	<u>\$ 80,000</u>	<u>100%</u>

Koosharem
July 8, 2016
Page 4

APPLICANT:

Koosharem Town
P.O. Box 440199
Koosharem, UT 84744
Telephone: 435-638-7598
Email: treas@scinternet.net

PRESIDING OFFICIAL &
CONTACT PERSON:

Harlow Brown
Koosharem Mayor
P.O. Box 440199
Koosharem, UT 84744
Telephone: 435-638-7598
Email: treas@scinternet.net

TREASURER/RECORDER:

Bryanna Ross
Telephone: 435-638-7598
Email: treas@scinternet.net

CONSULTING ENGINEER:

Lynn Wall, P.E.
Wall Engineering
55 South Main
Fillmore, UT 84631
Telephone: 435-864-7503
Email: wallengineering@frontiernet.net

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Koosharem
 COUNTY: Sevier
 PROJECT DESCRIPTION: Tank Liner

FUNDING SOURCE: State SRF

0 % Loan & 100 % Grant

ESTIMATED POPULATION:	334	NO. OF CONNECTIONS:	200 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$21.22 *			PROJECT TOTAL:	\$80,000
CURRENT % OF AGI:	0.74%	FINANCIAL PTS:	57	LOAN AMOUNT:	\$0
ESTIMATED MEDIAN AGI:	\$34,441			GRANT AMOUNT:	\$40,000
STATE AGI:	\$41,923			TOTAL REQUEST:	\$40,000
SYSTEM % OF STATE AGI:	82%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 1.92%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		1.92%
REQUIRED DEBT SERVICE:	\$0.00	\$0.00		\$0.00
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$0.00	\$0.00		\$0.00
ANNUAL NEW DEBT PER CONNECTION:	\$0.00	\$0.00		\$0.00
O & M + FUNDED DEPRECIATION:	\$40,031.00	\$40,031.00		\$40,031.00
OTHER DEBT + COVERAGE:	\$3,750.00	\$3,750.00		\$3,750.00
REPLACEMENT RESERVE ACCOUNT:	\$2,151.55	\$2,151.55		\$2,151.55
ANNUAL EXPENSES PER CONNECTION:	\$229.66	\$229.66		\$229.66
TOTAL SYSTEM EXPENSES	\$45,932.55	\$45,932.55		\$45,932.55
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$19.14	\$19.14		\$19.14
% OF ADJUSTED GROSS INCOME:	0.67%	0.67%		0.67%

* Equivalent Residential Connections

R309-700-5

Koosharem
Sevier
April 27, 2016

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	X
B. \$501 to \$1,500	14	
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	
E. \$3,001 to \$5,000	4	
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	
	\$400	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	
B. 71 to 80% of State Median AGI	16	
C. 81 to 95% of State Median AGI	13	X
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	82%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	X
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	
	50.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	
b. 2.01 to 2.50% of local median AGI	12	
c. 1.51 to 2.00% of local median AGI	8	
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	X
	0.67%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	X
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	
C. Is creating or enhancing a regionalization plan	16	
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	57	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Utah Department Of Environmental Quality Division Of Drinking Water

KOOSHAREM	PWS ID: UTAH21010 Rating: Approved	03/07/1985	Active
Legal Contact		Site Updates	
KOOSHAREM HARLOW F BROWN PO 440199 KOOSHAREM, UT 84744 Phone: 435-638-7412 County: SEVIER COUNTY System Type: Community Population: 400		Last Inventory Update: 10/28/2015 Last Surveyor Update: 10/27/2015 Surveyor: JOHN H OAKESON Operating Period: 1/1 - 12/31 Last IPS Update: 04/27/2016 07:00:00	
		Consumptive Use Zone	
		Irrigation Zone: 1	
		Date: 02/15/2013	

Admin Contacts

Name	Title	Office	Emergency	Email
BROWN, HARLOW F		435-638-7598		HCBROWN@COLOR-COUNTRY.NET

IPS Report

IPS Summary

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certification	Significant Deficiency
60	-10	70	0	0

Physical Facility Points

Code	Description	Severity	Point Effective
M001	CURRENT EMERGENCY RESPONSE PROGRAM REC		-10
	Facility	Comments	Status
			Determined
			Point Not Assessed
			Point Assessed
			10/27/2015
			-10
SSL2	VENT NOT PRESENT BUT RECOMMENDED REC		0
	Facility	Comments	Status
			Determined
			Point Not Assessed
			Point Assessed
	WS001 BROWNS SPRING	Active	06/10/2009
			0
V022	STORAGE FACILITY SHOWS EVIDENCE OF LEAKAGE	SIG	0
	Facility	Comments	Status
			Determined
			Point Not Assessed
			Point Assessed
	ST001 TANK #1	Active	04/06/2016
	SEEPS ON TANK WALLS		30
			0
Total Effective Points:			-10

Microbial Rule Violations

Determined	Compliance Period	Code	Violation Type	Return To Compliance	Point Effective
06/08/2015	04/01/2015 - 04/30/2015	23	MONITORING (TCR), ROUTINE MAJOR	N	35

12/08/2015	10/01/2015 - 10/31/2015	23	MONITORING (TCR), ROUTINE MAJOR	N	35
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Total Effective Points: 70

Operator Certification Points

Type	Level Required	Highest Certificate	Point Effective
Distribution	Small System	Small System	0
Treatment			0

Total Effective Points: 0

Agenda Item

4(C)(ii)(a)

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST

The Town of Virgin is requesting \$1,120,000 in financial assistance from the Drinking Water Board to construct a 500,000 gallon storage tank that will replace an existing tank, and replace old undersized water lines in the distribution system. Total project cost is estimated to be \$1,120,000.

STAFF COMMENTS:

Based on information from the Utah State Tax commission, the 2014 Median Adjusted Gross Income (MAGI) for Virgin is \$38,532, which is 92% of the State MAGI of \$41,923. The current average monthly water bill is calculated as \$69.26, which is 2.16% of the local MAGI. Therefore Virgin qualifies as a disadvantaged community based on the average water bill being more than 1.75% of the local MAGI.

The base evaluation returned an interest rate of 2.59% for 20 years and resulted in a water bill of 3.10% of the local MAGI. The base evaluation and two other options with principle forgiveness, 30 year term and zero percent interest are outlined in the table below, with the Financial Assistance Recommendation shown in bold.

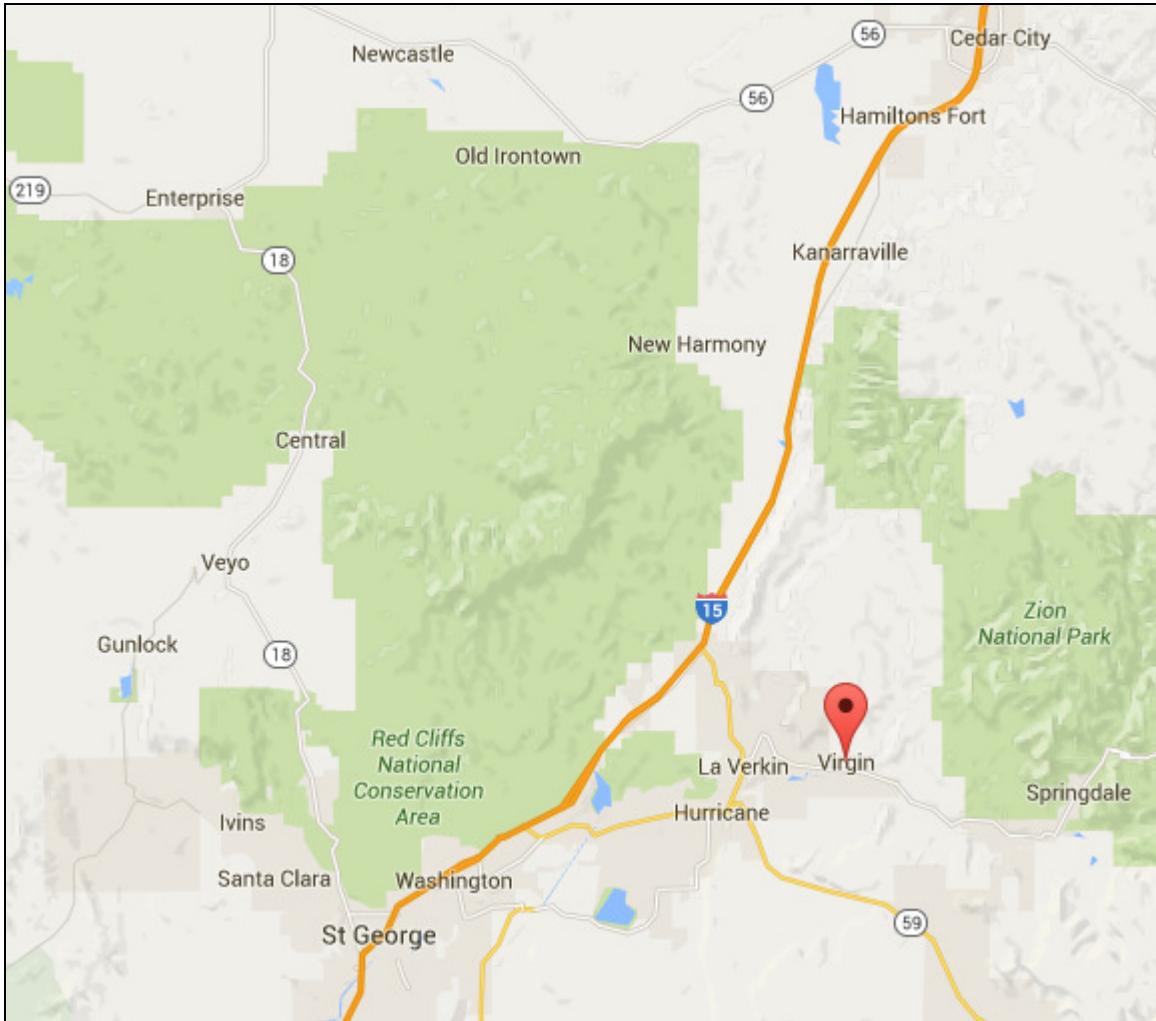
	Description	Repayable Loan Amount	Interest Rate	Term	Principal Forgiveness	Monthly Water Rate	% Local MAGI
1	Base Eval.	\$1,120,000	2.59%	20 yrs	\$0	\$99.63	3.10%
2	100% Loan	\$1,120,000	0.0%	30 yrs	\$0	\$86.59	2.70%
3	80 / 20	\$896,000	0.0%	30 yrs	\$224,000	\$83.81	2.61%

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a \$1,120,000 construction loan at 0.0% interest for 30 years to Virgin for construction of a storage tank and water lines.

APPLICANT'S LOCATION:

Virgin is located in Washington County, approximately 25 miles east of St. George.



PROJECT DESCRIPTION:

Construct a 500,000 gallon tank and replace old undersized water lines in the distribution system.

POPULATION GROWTH:

A growth rate of 1.0% is used in the population projections shown in the table below.

	Year	Population	Connections
Current	2016	750	258
Projected	2046	1062	365

IMPLEMENTATION SCHEDULE:

Apply to DWB for Funding:	May 2016
DWB Funding Authorization:	July 2016
Plans Submitted:	Aug 2016
Plan Approval:	Aug 2016
Advertise for Bids:	Aug 2016
Bid Opening:	Aug 2016
Loan Closing:	Sep 2016
Begin Construction:	Sep 2016
Complete Construction:	Jan 2017

COST ESTIMATE:

Construction:	\$1,000,000
Engineering / Const Management:	\$100,000
Legal/Bonding/Admin:	\$20,000
Total Cost:	\$1,120,000

CONTACT INFORMATION:

APPLICANT:	Virgin Town 114 Mill Street Virgin, UT 84779 435-635-4696 clerk@virgin.utah.gov
PRESIDING OFFICIAL & CONTACT PERSON:	Bruce Densley Mayor 114 Mill Street Virgin, UT 84779 435-635-4696 clerk@virgin.utah.gov
CONSULTING ENGINEER:	Curtis Nielson Ensign Engineering 1870 North Main, Ste 104 Cedar City, UT 84720 435-865-1453 cnielson@ensignutah.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Virgin
 COUNTY: Washington
 PROJECT DESCRIPTION: 500,000 gallon tank and water lines

FUNDING SOURCE: Federal SRF

100 % Loan & 0 % P.F.

ESTIMATED POPULATION:	750	NO. OF CONNECTIONS:	258 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$69.26 *			PROJECT TOTAL:	\$1,120,000
CURRENT % OF AGI:	2.16%	FINANCIAL PTS:	39	LOAN AMOUNT:	\$1,120,000
ESTIMATED MEDIAN AGI:	\$38,532			PRINC. FORGIVE.:	\$0
STATE AGI:	\$41,923			TOTAL REQUEST:	\$1,120,000
SYSTEM % OF STATE AGI:	92%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 2.59%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		2.59%
REQUIRED DEBT SERVICE:	\$56,000.00	\$80,669.71		\$72,456.99
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$5,600.00	\$8,066.97		\$7,245.70
ANNUAL NEW DEBT PER CONNECTION:	\$238.76	\$343.94		\$308.93
O & M + FUNDED DEPRECIATION:	\$208,001.00	\$208,001.00		\$208,001.00
OTHER DEBT + COVERAGE:	\$6,477.50	\$6,477.50		\$6,477.50
REPLACEMENT RESERVE ACCOUNT:	\$13,459.15	\$14,692.64		\$14,282.00
ANNUAL EXPENSES PER CONNECTION:	\$883.48	\$888.26		\$886.67
TOTAL SYSTEM EXPENSES	\$289,537.65	\$317,907.82		\$308,463.19
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$93.52	\$102.68		\$99.63
% OF ADJUSTED GROSS INCOME:	2.91%	3.20%		3.10%

* Equivalent Residential Connections

R309-700-5

Virgin
Washington
May 19, 2016

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	
B. \$501 to \$1,500	14	
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	
E. \$3,001 to \$5,000	4	X
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	
	\$4,341	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	
B. 71 to 80% of State Median AGI	16	
C. 81 to 95% of State Median AGI	13	X
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	92%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	X
	0.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	X
b. 2.01 to 2.50% of local median AGI	12	
c. 1.51 to 2.00% of local median AGI	8	
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	
	3.10%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	
C. Is creating or enhancing a regionalization plan	16	
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	39	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Virgin

PROPOSED BOND REPAYMENT SCHEDULE

100 % Loan & 0 % P.F.

PRINCIPAL	\$1,120,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	2.59%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	20	REVENUE BOND	
NOMIN. PAYMENT	\$72,456.99	PRINC. FORGIVE.:	\$0.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$1,120,000.00		\$8,541.24 *	\$0.00	\$8,541.24	\$1,120,000.00	0
2018	\$1,120,000.00		\$72,008.00	\$43,000.00	\$29,008.00	\$1,077,000.00	1
2019	\$1,077,000.00		\$72,894.30	\$45,000.00	\$27,894.30	\$1,032,000.00	2
2020	\$1,032,000.00		\$72,728.80	\$46,000.00	\$26,728.80	\$986,000.00	3
2021	\$986,000.00		\$72,537.40	\$47,000.00	\$25,537.40	\$939,000.00	4
2022	\$939,000.00		\$72,320.10	\$48,000.00	\$24,320.10	\$891,000.00	5
2023	\$891,000.00		\$72,076.90	\$49,000.00	\$23,076.90	\$842,000.00	6
2024	\$842,000.00		\$72,807.80	\$51,000.00	\$21,807.80	\$791,000.00	7
2025	\$791,000.00		\$72,486.90	\$52,000.00	\$20,486.90	\$739,000.00	8
2026	\$739,000.00		\$72,140.10	\$53,000.00	\$19,140.10	\$686,000.00	9
2027	\$686,000.00		\$72,767.40	\$55,000.00	\$17,767.40	\$631,000.00	10
2028	\$631,000.00		\$72,342.90	\$56,000.00	\$16,342.90	\$575,000.00	11
2029	\$575,000.00		\$72,892.50	\$58,000.00	\$14,892.50	\$517,000.00	12
2030	\$517,000.00		\$72,390.30	\$59,000.00	\$13,390.30	\$458,000.00	13
2031	\$458,000.00		\$72,862.20	\$61,000.00	\$11,862.20	\$397,000.00	14
2032	\$397,000.00		\$72,282.30	\$62,000.00	\$10,282.30	\$335,000.00	15
2033	\$335,000.00		\$72,676.50	\$64,000.00	\$8,676.50	\$271,000.00	16
2034	\$271,000.00		\$72,018.90	\$65,000.00	\$7,018.90	\$206,000.00	17
2035	\$206,000.00		\$72,335.40	\$67,000.00	\$5,335.40	\$139,000.00	18
2036	\$139,000.00		\$72,600.10	\$69,000.00	\$3,600.10	\$70,000.00	19
2037	\$70,000.00		\$71,813.00	\$70,000.00	\$1,813.00	\$0.00	20
			\$1,457,523.04	\$1,120,000.00	\$337,523.04		

*Interest Only Payment

Virgin

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	-
DWB Loan Amount:	\$	1,120,000
DWB Loan Term:		20
DWB Loan Interest:		2.59%
DWB Loan Payment:	\$	72,457

DW Expenses (Estimated)

Proposed Facility Capital Cost:	#VALUE!
Existing Facility O&M Expense:	\$ 174,313
Proposed Facility O&M Expense:	\$ 174,313
O&M Inflation Factor:	1.0%
Existing Debt Service:	\$ 5,182

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		258
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	25,795
Current Monthly User Charge:	\$	69.26
Needed Average Monthly User Charge:	\$	99.63

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	3	258	214,426	77,385	-	291,811	-	-	1,120,000	-	-	5,182	174,313	179,495	-
1	1.0%	3	261	312,050	77,385	-	389,435	72,008	7,246	1,077,000	43,000	29,008	5,182	174,313	258,749	2.79
2	1.0%	2	263	314,441	51,590	-	366,031	72,894	7,246	1,032,000	45,000	27,894	5,182	176,056	261,378	2.43
3	1.0%	3	266	318,028	77,385	-	395,413	72,729	7,246	986,000	46,000	26,729	5,182	177,817	262,973	2.79
4	1.0%	2	268	320,419	51,590	-	372,009	72,537	7,246	939,000	47,000	25,537	5,182	179,595	264,560	2.48
5	1.0%	3	271	324,006	77,385	-	401,391	72,320	7,246	891,000	48,000	24,320	5,182	181,391	266,139	2.84
6	1.0%	3	274	327,593	77,385	-	404,978	72,077	7,246	842,000	49,000	23,077	5,182	183,205	267,709	2.87
7	1.0%	3	277	331,179	77,385	-	408,564	72,808	7,246	791,000	51,000	21,808	5,182	185,037	270,272	2.87
8	1.0%	2	279	333,571	51,590	-	385,161	72,487	7,246	739,000	52,000	20,487	5,182	186,887	271,802	2.55
9	1.0%	3	282	337,157	77,385	-	414,542	72,140	7,246	686,000	53,000	19,140	5,182	188,756	273,324	2.92
10	1.0%	3	285	340,744	77,385	-	418,129	72,767	7,246	631,000	55,000	17,767	5,182	190,644	275,839	2.92
11	1.0%	3	288	344,331	77,385	-	421,716	72,343		575,000	56,000	16,343	5,182	192,550	270,075	2.96
12	1.0%	3	291	347,918	77,385	-	425,303	72,893		517,000	58,000	14,893	5,182	194,475	272,550	2.96
13	1.0%	3	294	351,505	77,385	-	428,890	72,390		458,000	59,000	13,390	5,182	196,420	273,993	3.00
14	1.0%	3	297	355,091	77,385	-	432,476	72,862		397,000	61,000	11,862	5,182	198,384	276,429	3.00
15	1.0%	3	300	358,678	77,385	-	436,063	72,282		335,000	62,000	10,282	5,182	200,368	277,833	3.04
16	1.0%	3	303	362,265	77,385	-	439,650	72,677		271,000	64,000	8,677	5,182	202,372	280,230	3.05
17	1.0%	3	306	365,852	77,385	-	443,237	72,019		206,000	65,000	7,019	5,182	204,396	281,597	3.09
18	1.0%	3	309	369,438	77,385	-	446,823	72,335		139,000	67,000	5,335	5,182	206,440	283,957	3.10
19	1.0%	3	312	373,025	77,385	-	450,410	72,600		70,000	69,000	3,600	5,182	208,504	286,286	3.11
20	1.0%	3	315	376,612	77,385	-	453,997	71,813		-	70,000	1,813	5,182	210,589	287,584	3.16

Total Paid in Debt Service = 1,120,000 328,982

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Virgin
 COUNTY: Washington
 PROJECT DESCRIPTION: 500,000 gallon tank and water lines

FUNDING SOURCE: Federal SRF

100 % Loan & 0 % P.F.

ESTIMATED POPULATION:	750	NO. OF CONNECTIONS:	258 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$69.26 *			PROJECT TOTAL:	\$1,120,000
CURRENT % OF AGI:	2.16%	FINANCIAL PTS:	39	LOAN AMOUNT:	\$1,120,000
ESTIMATED MEDIAN AGI:	\$38,532			PRINC. FORGIVE.:	\$0
STATE AGI:	\$41,923			TOTAL REQUEST:	\$1,120,000
SYSTEM % OF STATE AGI:	92%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		0.00%
REQUIRED DEBT SERVICE:	\$37,333.33	\$62,895.64		\$37,333.33
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$3,733.33	\$6,289.56		\$3,733.33
ANNUAL NEW DEBT PER CONNECTION:	\$159.17	\$268.16		\$159.17
O & M + FUNDED DEPRECIATION:	\$208,001.00	\$208,001.00		\$208,001.00
OTHER DEBT + COVERAGE:	\$6,477.50	\$6,477.50		\$6,477.50
REPLACEMENT RESERVE ACCOUNT:	\$12,525.82	\$13,803.93		\$12,525.82
ANNUAL EXPENSES PER CONNECTION:	\$879.86	\$884.82		\$879.86
TOTAL SYSTEM EXPENSES	\$268,070.98	\$297,467.64		\$268,070.98
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$86.59	\$96.08		\$86.59
% OF ADJUSTED GROSS INCOME:	2.70%	2.99%		2.70%

* Equivalent Residential Connections

Virgin

PROPOSED BOND REPAYMENT SCHEDULE

100 % Loan & 0 % P.F.

PRINCIPAL	\$1,120,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	0.00%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	\$37,333.33	PRINC. FORGIVE.:	\$0.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$1,120,000.00		\$0.00 *	\$0.00	\$0.00	\$1,120,000.00	0
2018	\$1,120,000.00		\$37,000.00	\$37,000.00	\$0.00	\$1,083,000.00	1
2019	\$1,083,000.00		\$37,000.00	\$37,000.00	\$0.00	\$1,046,000.00	2
2020	\$1,046,000.00		\$37,000.00	\$37,000.00	\$0.00	\$1,009,000.00	3
2021	\$1,009,000.00		\$37,000.00	\$37,000.00	\$0.00	\$972,000.00	4
2022	\$972,000.00		\$37,000.00	\$37,000.00	\$0.00	\$935,000.00	5
2023	\$935,000.00		\$37,000.00	\$37,000.00	\$0.00	\$898,000.00	6
2024	\$898,000.00		\$37,000.00	\$37,000.00	\$0.00	\$861,000.00	7
2025	\$861,000.00		\$37,000.00	\$37,000.00	\$0.00	\$824,000.00	8
2026	\$824,000.00		\$37,000.00	\$37,000.00	\$0.00	\$787,000.00	9
2027	\$787,000.00		\$37,000.00	\$37,000.00	\$0.00	\$750,000.00	10
2028	\$750,000.00		\$38,000.00	\$38,000.00	\$0.00	\$712,000.00	11
2029	\$712,000.00		\$37,000.00	\$37,000.00	\$0.00	\$675,000.00	12
2030	\$675,000.00		\$38,000.00	\$38,000.00	\$0.00	\$637,000.00	13
2031	\$637,000.00		\$37,000.00	\$37,000.00	\$0.00	\$600,000.00	14
2032	\$600,000.00		\$38,000.00	\$38,000.00	\$0.00	\$562,000.00	15
2033	\$562,000.00		\$37,000.00	\$37,000.00	\$0.00	\$525,000.00	16
2034	\$525,000.00		\$38,000.00	\$38,000.00	\$0.00	\$487,000.00	17
2035	\$487,000.00		\$37,000.00	\$37,000.00	\$0.00	\$450,000.00	18
2036	\$450,000.00		\$38,000.00	\$38,000.00	\$0.00	\$412,000.00	19
2037	\$412,000.00		\$37,000.00	\$37,000.00	\$0.00	\$375,000.00	20
2038	\$375,000.00		\$38,000.00	\$38,000.00	\$0.00	\$337,000.00	21
2039	\$337,000.00		\$37,000.00	\$37,000.00	\$0.00	\$300,000.00	22
2040	\$300,000.00		\$38,000.00	\$38,000.00	\$0.00	\$262,000.00	23
2041	\$262,000.00		\$37,000.00	\$37,000.00	\$0.00	\$225,000.00	24
2042	\$225,000.00		\$38,000.00	\$38,000.00	\$0.00	\$187,000.00	25
2043	\$187,000.00		\$37,000.00	\$37,000.00	\$0.00	\$150,000.00	26
2044	\$150,000.00		\$38,000.00	\$38,000.00	\$0.00	\$112,000.00	27
2045	\$112,000.00		\$37,000.00	\$37,000.00	\$0.00	\$75,000.00	28
2046	\$75,000.00		\$38,000.00	\$38,000.00	\$0.00	\$37,000.00	29
2047	\$37,000.00		\$37,000.00	\$37,000.00	\$0.00	\$0.00	30
			\$1,120,000.00	\$1,120,000.00	\$0.00		

*Interest Only Payment

Virgin

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	-
DWB Loan Amount:	\$	1,120,000
DWB Loan Term:		30
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	37,333

DW Expenses (Estimated)

Proposed Facility Capital Cost:	#VALUE!
Existing Facility O&M Expense:	\$ 174,313
Proposed Facility O&M Expense:	\$ 174,313
O&M Inflation Factor:	1.0%
Existing Debt Service:	\$ 5,182

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		258
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	25,795
Current Monthly User Charge:	\$	69.26
Needed Average Monthly User Charge:	\$	86.59

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	3	258	214,426	77,385	-	291,811	-	-	1,120,000	-	-	5,182	174,313	179,495	-
1	1.0%	3	261	271,188	77,385	-	348,573	37,000	3,733	1,083,000	37,000	-	5,182	174,313	220,228	4.13
2	1.0%	2	263	273,266	51,590	-	324,856	37,000	3,733	1,046,000	37,000	-	5,182	176,056	221,971	3.53
3	1.0%	3	266	276,383	77,385	-	353,768	37,000	3,733	1,009,000	37,000	-	5,182	177,817	223,732	4.17
4	1.0%	2	268	278,461	51,590	-	330,051	37,000	3,733	972,000	37,000	-	5,182	179,595	225,510	3.57
5	1.0%	3	271	281,578	77,385	-	358,963	37,000	3,733	935,000	37,000	-	5,182	181,391	227,306	4.21
6	1.0%	3	274	284,696	77,385	-	362,081	37,000	3,733	898,000	37,000	-	5,182	183,205	229,120	4.24
7	1.0%	3	277	287,813	77,385	-	365,198	37,000	3,733	861,000	37,000	-	5,182	185,037	230,952	4.27
8	1.0%	2	279	289,891	51,590	-	341,481	37,000	3,733	824,000	37,000	-	5,182	186,887	232,802	3.66
9	1.0%	3	282	293,008	77,385	-	370,393	37,000	3,733	787,000	37,000	-	5,182	188,756	234,671	4.31
10	1.0%	3	285	296,125	77,385	-	373,510	37,000	3,733	750,000	37,000	-	5,182	190,644	236,559	4.34
11	1.0%	3	288	299,242	77,385	-	376,627	38,000		712,000	38,000	-	5,182	192,550	235,732	4.26
12	1.0%	3	291	302,359	77,385	-	379,744	37,000		675,000	37,000	-	5,182	194,475	236,657	4.39
13	1.0%	3	294	305,476	77,385	-	382,861	38,000		637,000	38,000	-	5,182	196,420	239,602	4.32
14	1.0%	3	297	308,593	77,385	-	385,978	37,000		600,000	37,000	-	5,182	198,384	240,566	4.45
15	1.0%	3	300	311,710	77,385	-	389,095	38,000		562,000	38,000	-	5,182	200,368	243,550	4.37
16	1.0%	3	303	314,828	77,385	-	392,213	37,000		525,000	37,000	-	5,182	202,372	244,554	4.50
17	1.0%	3	306	317,945	77,385	-	395,330	38,000		487,000	38,000	-	5,182	204,396	247,578	4.42
18	1.0%	3	309	321,062	77,385	-	398,447	37,000		450,000	37,000	-	5,182	206,440	248,622	4.55
19	1.0%	3	312	324,179	77,385	-	401,564	38,000		412,000	38,000	-	5,182	208,504	251,686	4.47
20	1.0%	3	315	327,296	77,385	-	404,681	37,000		375,000	37,000	-	5,182	210,589	252,771	4.60
21	1.0%	3	318	330,413	77,385	-	407,798	38,000		337,000	38,000	-	5,182	212,695	255,877	4.52
22	1.0%	3	321	333,530	77,385	-	410,915	37,000		300,000	37,000	-	5,182	214,822	257,004	4.65
23	1.0%	3	324	336,647	77,385	-	414,032	38,000		262,000	38,000	-	5,182	216,970	260,152	4.56
24	1.0%	4	328	340,803	103,180	-	443,983	37,000		225,000	37,000	-	5,182	219,140	261,322	5.33
25	1.0%	3	331	343,921	77,385	-	421,306	38,000		187,000	38,000	-	5,182	221,331	264,513	4.63
26	1.0%	3	334	347,038	77,385	-	424,423	37,000		150,000	37,000	-	5,182	223,545	265,727	4.76
27	1.0%	4	338	351,194	103,180	-	454,374	38,000		112,000	38,000	-	5,182	225,780	268,962	5.29
28	1.0%	3	341	354,311	77,385	-	431,696	37,000		75,000	37,000	-	5,182	228,038	270,220	4.83
29	1.0%	3	344	357,428	77,385	-	434,813	38,000		37,000	38,000	-	5,182	230,318	273,500	4.74
30	1.0%	4	348	361,584	103,180	-	464,764	37,000		-	37,000	-	5,182	232,621	274,803	5.50

Total Paid in Debt Service = 1,120,000

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Virgin
 COUNTY: Washington
 PROJECT DESCRIPTION: 500,000 gallon tank and water lines

FUNDING SOURCE: Federal SRF

80 % Loan & 20 % P.F.

ESTIMATED POPULATION:	750	NO. OF CONNECTIONS:	258 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$69.26 *			PROJECT TOTAL:	\$1,120,000
CURRENT % OF AGI:	2.16%	FINANCIAL PTS:	39	LOAN AMOUNT:	\$896,000
ESTIMATED MEDIAN AGI:	\$38,532			PRINC. FORGIVE.:	\$224,000
STATE AGI:	\$41,923			TOTAL REQUEST:	\$1,120,000
SYSTEM % OF STATE AGI:	92%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		0.00%
REQUIRED DEBT SERVICE:	\$29,866.67	\$50,316.51		\$29,866.67
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$2,986.67	\$5,031.65		\$2,986.67
ANNUAL NEW DEBT PER CONNECTION:	\$127.34	\$214.53		\$127.34
O & M + FUNDED DEPRECIATION:	\$208,001.00	\$208,001.00		\$208,001.00
OTHER DEBT + COVERAGE:	\$6,477.50	\$6,477.50		\$6,477.50
REPLACEMENT RESERVE ACCOUNT:	\$12,152.48	\$13,174.98		\$12,152.48
ANNUAL EXPENSES PER CONNECTION:	\$878.41	\$882.38		\$878.41
TOTAL SYSTEM EXPENSES	\$259,484.32	\$283,001.64		\$259,484.32
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$83.81	\$91.41		\$83.81
% OF ADJUSTED GROSS INCOME:	2.61%	2.85%		2.61%

* Equivalent Residential Connections

Virgin

PROPOSED BOND REPAYMENT SCHEDULE

80 % Loan & 20 % P.F.

PRINCIPAL	\$896,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	0.00%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	\$29,866.67	PRINC. FORGIVE.:	\$224,000.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$896,000.00		\$0.00 *	\$0.00	\$0.00	\$896,000.00	0
2018	\$896,000.00		\$30,000.00	\$30,000.00	\$0.00	\$866,000.00	1
2019	\$866,000.00		\$30,000.00	\$30,000.00	\$0.00	\$836,000.00	2
2020	\$836,000.00		\$30,000.00	\$30,000.00	\$0.00	\$806,000.00	3
2021	\$806,000.00		\$30,000.00	\$30,000.00	\$0.00	\$776,000.00	4
2022	\$776,000.00		\$30,000.00	\$30,000.00	\$0.00	\$746,000.00	5
2023	\$746,000.00		\$30,000.00	\$30,000.00	\$0.00	\$716,000.00	6
2024	\$716,000.00		\$30,000.00	\$30,000.00	\$0.00	\$686,000.00	7
2025	\$686,000.00		\$30,000.00	\$30,000.00	\$0.00	\$656,000.00	8
2026	\$656,000.00		\$30,000.00	\$30,000.00	\$0.00	\$626,000.00	9
2027	\$626,000.00		\$30,000.00	\$30,000.00	\$0.00	\$596,000.00	10
2028	\$596,000.00		\$30,000.00	\$30,000.00	\$0.00	\$566,000.00	11
2029	\$566,000.00		\$30,000.00	\$30,000.00	\$0.00	\$536,000.00	12
2030	\$536,000.00		\$30,000.00	\$30,000.00	\$0.00	\$506,000.00	13
2031	\$506,000.00		\$30,000.00	\$30,000.00	\$0.00	\$476,000.00	14
2032	\$476,000.00		\$30,000.00	\$30,000.00	\$0.00	\$446,000.00	15
2033	\$446,000.00		\$30,000.00	\$30,000.00	\$0.00	\$416,000.00	16
2034	\$416,000.00		\$30,000.00	\$30,000.00	\$0.00	\$386,000.00	17
2035	\$386,000.00		\$30,000.00	\$30,000.00	\$0.00	\$356,000.00	18
2036	\$356,000.00		\$30,000.00	\$30,000.00	\$0.00	\$326,000.00	19
2037	\$326,000.00		\$30,000.00	\$30,000.00	\$0.00	\$296,000.00	20
2038	\$296,000.00		\$30,000.00	\$30,000.00	\$0.00	\$266,000.00	21
2039	\$266,000.00		\$30,000.00	\$30,000.00	\$0.00	\$236,000.00	22
2040	\$236,000.00		\$30,000.00	\$30,000.00	\$0.00	\$206,000.00	23
2041	\$206,000.00		\$29,000.00	\$29,000.00	\$0.00	\$177,000.00	24
2042	\$177,000.00		\$30,000.00	\$30,000.00	\$0.00	\$147,000.00	25
2043	\$147,000.00		\$29,000.00	\$29,000.00	\$0.00	\$118,000.00	26
2044	\$118,000.00		\$30,000.00	\$30,000.00	\$0.00	\$88,000.00	27
2045	\$88,000.00		\$29,000.00	\$29,000.00	\$0.00	\$59,000.00	28
2046	\$59,000.00		\$30,000.00	\$30,000.00	\$0.00	\$29,000.00	29
2047	\$29,000.00		\$29,000.00	\$29,000.00	\$0.00	\$0.00	30
			\$896,000.00	\$896,000.00	\$0.00		

*Interest Only Payment

Virgin

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	224,000
DWB Loan Amount:	\$	896,000
DWB Loan Term:		30
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	29,867

DW Expenses (Estimated)

Proposed Facility Capital Cost:	#VALUE!
Existing Facility O&M Expense:	\$ 174,313
Proposed Facility O&M Expense:	\$ 174,313
O&M Inflation Factor:	1.0%
Existing Debt Service:	\$ 5,182

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		258
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	25,795
Current Monthly User Charge:	\$	69.26
Needed Average Monthly User Charge:	\$	83.81

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	3	258	214,426	77,385	-	291,811	-	-	896,000	-	-	5,182	174,313	179,495	-
1	1.0%	3	261	262,502	77,385	-	339,887	30,000	2,987	866,000	30,000	-	5,182	174,313	212,482	4.71
2	1.0%	2	263	264,513	51,590	-	316,103	30,000	2,987	836,000	30,000	-	5,182	176,056	214,225	3.98
3	1.0%	3	266	267,530	77,385	-	344,915	30,000	2,987	806,000	30,000	-	5,182	177,817	215,985	4.75
4	1.0%	2	268	269,542	51,590	-	321,132	30,000	2,987	776,000	30,000	-	5,182	179,595	217,764	4.02
5	1.0%	3	271	272,559	77,385	-	349,944	30,000	2,987	746,000	30,000	-	5,182	181,391	219,559	4.79
6	1.0%	3	274	275,576	77,385	-	352,961	30,000	2,987	716,000	30,000	-	5,182	183,205	221,373	4.83
7	1.0%	3	277	278,594	77,385	-	355,979	30,000	2,987	686,000	30,000	-	5,182	185,037	223,205	4.86
8	1.0%	2	279	280,605	51,590	-	332,195	30,000	2,987	656,000	30,000	-	5,182	186,887	225,056	4.13
9	1.0%	3	282	283,622	77,385	-	361,007	30,000	2,987	626,000	30,000	-	5,182	188,756	226,925	4.90
10	1.0%	3	285	286,640	77,385	-	364,025	30,000	2,987	596,000	30,000	-	5,182	190,644	228,812	4.93
11	1.0%	3	288	289,657	77,385	-	367,042	30,000		566,000	30,000	-	5,182	192,550	227,732	4.96
12	1.0%	3	291	292,674	77,385	-	370,059	30,000		536,000	30,000	-	5,182	194,475	229,657	4.99
13	1.0%	3	294	295,691	77,385	-	373,076	30,000		506,000	30,000	-	5,182	196,420	231,602	5.02
14	1.0%	3	297	298,709	77,385	-	376,094	30,000		476,000	30,000	-	5,182	198,384	233,566	5.05
15	1.0%	3	300	301,726	77,385	-	379,111	30,000		446,000	30,000	-	5,182	200,368	235,550	5.08
16	1.0%	3	303	304,743	77,385	-	382,128	30,000		416,000	30,000	-	5,182	202,372	237,554	5.11
17	1.0%	3	306	307,760	77,385	-	385,145	30,000		386,000	30,000	-	5,182	204,396	239,578	5.14
18	1.0%	3	309	310,778	77,385	-	388,163	30,000		356,000	30,000	-	5,182	206,440	241,622	5.17
19	1.0%	3	312	313,795	77,385	-	391,180	30,000		326,000	30,000	-	5,182	208,504	243,686	5.19
20	1.0%	3	315	316,812	77,385	-	394,197	30,000		296,000	30,000	-	5,182	210,589	245,771	5.22
21	1.0%	3	318	319,830	77,385	-	397,215	30,000		266,000	30,000	-	5,182	212,695	247,877	5.24
22	1.0%	3	321	322,847	77,385	-	400,232	30,000		236,000	30,000	-	5,182	214,822	250,004	5.27
23	1.0%	3	324	325,864	77,385	-	403,249	30,000		206,000	30,000	-	5,182	216,970	252,152	5.29
24	1.0%	4	328	329,887	103,180	-	433,067	29,000		177,000	29,000	-	5,182	219,140	253,322	6.26
25	1.0%	3	331	332,904	77,385	-	410,289	30,000		147,000	30,000	-	5,182	221,331	256,513	5.37
26	1.0%	3	334	335,922	77,385	-	413,307	29,000		118,000	29,000	-	5,182	223,545	257,727	5.55
27	1.0%	4	338	339,945	103,180	-	443,125	30,000		88,000	30,000	-	5,182	225,780	260,962	6.18
28	1.0%	3	341	342,962	77,385	-	420,347	29,000		59,000	29,000	-	5,182	228,038	262,220	5.63
29	1.0%	3	344	345,979	77,385	-	423,364	30,000		29,000	30,000	-	5,182	230,318	265,500	5.49
30	1.0%	4	348	350,002	103,180	-	453,182	29,000		-	29,000	-	5,182	232,621	266,803	6.45

Total Paid in Debt Service = 896,000

Utah Department Of Environmental Quality Division Of Drinking Water

VIRGIN	PWS ID: UTAH27020 Rating: Approved	02/27/1987	Active
Legal Contact	Site Updates	Consumptive Use Zone	
VIRGIN TOWN	Last Inventory Update: 12/17/2014	Irrigation Zone: 6	
CHRIS J HOLM	Last Surveyor Update: 12/10/2014	Date: 02/15/2013	
PO BOX 790008	Surveyor: KLINTON A FREI		
VIRGIN, UT 84779	Operating Period: 1/1 - 12/31		
Phone: 435-635-4695	Last IPS Update: 05/19/2016 12:00:00		
County: WASHINGTON COUNTY			
System Type: Community			
Population: 750			

Admin Contacts

Name	Title	Office	Emergency	Email
HOLM, CHRIS J		435-635-4695		clerk@virgin.utah.gov

IPS Report

IPS Summary

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certification	Significant Deficiency
-10	-10	0	0	0

Physical Facility Points

Code	Description	Severity	Point Effective		
M001	CURRENT EMERGENCY RESPONSE PROGRAM REC		-10		
Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed
	SYSTEM HAS AN EMERGENCY RESPONSE PLAN		06/09/2003		-10
V020	STORAGE FACILITY SHOWS MILD DETERIORATION	REC			0
Facility	Comments	Status	Determined	Point Not Assessed	Point Assessed
ST002 STORAGE FACILITY ST002		Active	12/10/2014		0

Total Effective Points: -10

Operator Certification Points

Type	Level Required	Highest Certificate	Point Effective
Distribution	Dist 1	Dist 1	0
Treatment			0

Total Effective Points: 0

Agenda Item

4(C)(ii)(b)

**DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN**

APPLICANT'S REQUEST

Irontown is requesting \$474,000 in financial assistance from the Drinking Water Board to construct a 300,000 gallon storage tank that will replace the existing tank, and replace approximately 2800 feet of 12-inch transmission line. Total project cost is estimated to be \$474,000.

STAFF COMMENTS:

Staff authorized a planning grant in March of 2016 to prepare a master plan that would evaluate infrastructure needs for the water system. The master plan is not complete yet, but during the preliminary evaluation of the water system, the engineer noted that the existing steel tank was starting to develop leaks, and that the deterioration was too extensive to repair. The engineer recommended the water system pursue funding immediately to replace the tank, based on the preliminary evaluation, while the master plan is being finalized.

Based on information from the Utah State Tax commission, the 2014 MAGI for Irontown is \$32,103, which is 77% of the State MAGI of \$41,923. The current average monthly water bill is calculated as \$58.18, which is 2.17% of the local MAGI. Therefore Irontown qualifies as a disadvantaged community.

The base evaluation returned an interest rate of 2.63% for 20 years and resulted in a water bill of 5.51% of the local MAGI. The base evaluation and two other options with principal forgiveness, 30 year term and zero percent interest are outlined in the table below, with the Financial Assistance Committee recommendation shown in bold.

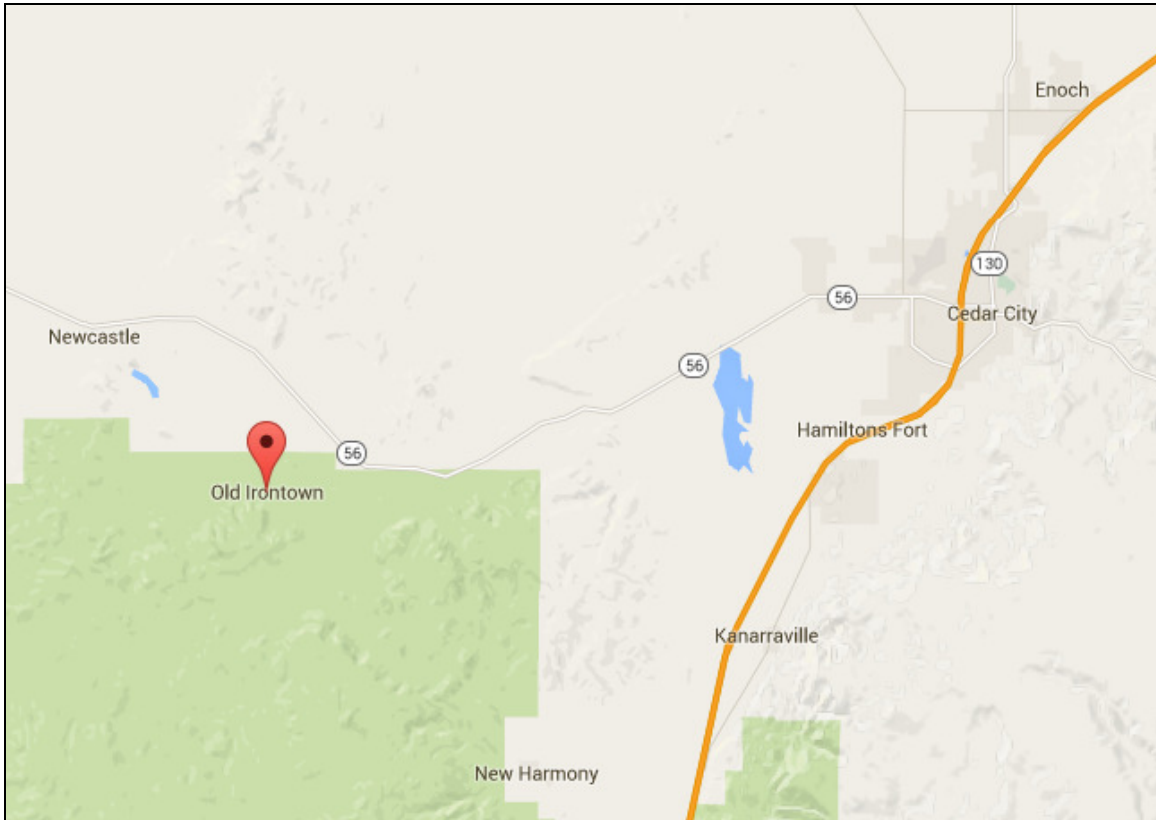
	Description	Repayable Loan Amount	Interest Rate	Term	Principal Forgiveness	Monthly Water Rate	% Local MAGI
1	Base Evaluat.	\$474,000	2.63%	20 yrs	\$0	\$147.38	5.51%
2	100% Loan	\$474,000	0.0%	30 yrs	\$0	\$95.36	3.56%
3	80 / 20	\$379,000	0.0%	30 yrs	\$95,000	\$84.37	3.15%

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a \$474,000 construction loan at 0.0% interest for 30 years to Irontown for construction of a storage tank and transmission water line.

APPLICANT'S LOCATION:

The Irontown community is located in Iron County, approximately 25 miles west of Cedar City.



PROJECT DESCRIPTION:

Construct a 300,000 gallon tank and install 2800 feet of 12-inch transmission water line.

POPULATION GROWTH:

A growth rate of 1.0% is used to in the population projects show in the table below.

	Year	Population	Connections
Current	2016	90	30
Projected	2046	127	42

IMPLEMENTATION SCHEDULE:

Apply to DWB for Funding:	May 2016
DWB Funding Authorization:	July 2016
Plans Submitted:	Aug 2016
Plan Approval:	Aug 2016
Advertise for Bids:	Aug 2016
Bid Opening:	Aug 2016
Loan Closing:	Sep 2016
Begin Construction:	Sep 2016
Complete Construction:	Jan 2017

COST ESTIMATE:

Construction:	\$400,000
Engineering / Const Management:	\$54,000
Legal/Bonding/Admin:	\$20,000
Total Cost:	\$474,000

PROPOSED FUNDING ALLOCATION

Funding Source	Funding Amount	Percent of Project
Irontown	\$ -	0%
DWB Loan	\$ 379,000	80%
DWB Grant	\$ 95,000	20%
Total Amount	\$ 474,000	100%

CONTACT INFORMATION:

APPLICANT: Old Irontown POA
646 South Main Street #128
Cedar City, UT 84720
435-439-6027
boko517@verizon.net

PRESIDING OFFICIAL &
CONTACT PERSON: Barbara Osborne
President
646 South Main Street #128
Cedar City, UT 84720
435-439-6027
boko517@verizon.net

CONSULTING ENGINEER: Curtis Nielson
Ensign Engineering
1870 North Main, Ste 104
Cedar City, UT 84720
435-865-1453
cnielson@ensignutah.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Irontown
 COUNTY: Iron
 PROJECT DESCRIPTION: 300,000 gallon tank and 2800 ft 12-inch transmission line

FUNDING SOURCE: Federal SRF

100 % Loan & 0 % P.F.

ESTIMATED POPULATION:	90	NO. OF CONNECTIONS:	30 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$58.18 *			PROJECT TOTAL:	\$474,000
CURRENT % OF AGI:	2.17%	FINANCIAL PTS:	38	LOAN AMOUNT:	\$474,000
ESTIMATED MEDIAN AGI:	\$32,103			PRINC. FORGIVE.:	\$0
STATE AGI:	\$41,923			TOTAL REQUEST:	\$474,000
SYSTEM % OF STATE AGI:	77%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 2.63%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		2.63%
REQUIRED DEBT SERVICE:	\$23,700.00	\$34,140.57		\$30,780.37
*PARTIAL COVERAGE (15%):	\$3,555.00	\$5,121.09		\$4,617.06
*ADD. COVERAGE AND RESERVE (10%):	\$2,370.00	\$3,414.06		\$3,078.04
ANNUAL NEW DEBT PER CONNECTION:	\$987.50	\$1,422.52		\$1,282.52
O & M + FUNDED DEPRECIATION:	\$14,580.00	\$14,580.00		\$14,580.00
OTHER DEBT + COVERAGE:	\$0.00	\$0.00		\$0.00
REPLACEMENT RESERVE ACCOUNT:	\$0.00	\$0.00		\$0.00
ANNUAL EXPENSES PER CONNECTION:	\$486.00	\$486.00		\$486.00
TOTAL SYSTEM EXPENSES	\$44,205.00	\$57,255.72		\$53,055.46
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$122.79	\$159.04		\$147.38
% OF ADJUSTED GROSS INCOME:	4.59%	5.95%		5.51%

* Residential Connections

R309-700-5

Irontown
Iron
May 19, 2016

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	
B. \$501 to \$1,500	14	
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	
E. \$3,001 to \$5,000	4	
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	X
	\$15,800	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	
B. 71 to 80% of State Median AGI	16	X
C. 81 to 95% of State Median AGI	13	
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	77%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	X
	0.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	X
b. 2.01 to 2.50% of local median AGI	12	
c. 1.51 to 2.00% of local median AGI	8	
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	
	5.51%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	
C. Is creating or enhancing a regionalization plan	16	
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	38	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Irontown

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	-
DWB Loan Amount:	\$	474,000
DWB Loan Term:		20
DWB Loan Interest:		2.63%
DWB Loan Payment:	\$	30,780

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	474,000
Existing Facility O&M Expense:	\$	14,580
Proposed Facility O&M Expense:	\$	14,580
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	-

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		30
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	-
Current Monthly User Charge:	\$	58.18
Needed Average Monthly User Charge:	\$	147.38

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	0	30	20,946	-	-	20,946	-	-	474,000	-	-	-	14,580	14,580	-
1	1.0%	0	30	53,055	-	-	53,055	30,466	3,078	456,000	18,000	12,466	-	14,580	48,124	1.26
2	1.0%	1	31	54,824	-	-	54,824	30,993	3,078	437,000	19,000	11,993	-	14,726	48,797	1.29
3	1.0%	0	31	54,824	-	-	54,824	30,493	3,078	418,000	19,000	11,493	-	14,873	48,444	1.31
4	1.0%	0	31	54,824	-	-	54,824	30,993	3,078	398,000	20,000	10,993	-	15,022	49,093	1.28
5	1.0%	1	32	56,592	-	-	56,592	30,467	3,078	378,000	20,000	10,467	-	15,172	48,717	1.36
6	1.0%	0	32	56,592	-	-	56,592	30,941	3,078	357,000	21,000	9,941	-	15,324	49,343	1.33
7	1.0%	0	32	56,592	-	-	56,592	30,389	3,078	336,000	21,000	9,389	-	15,477	48,944	1.35
8	1.0%	0	32	56,592	-	-	56,592	30,837	3,078	314,000	22,000	8,837	-	15,632	49,547	1.33
9	1.0%	1	33	58,361	-	-	58,361	31,258	3,078	291,000	23,000	8,258	-	15,788	50,124	1.36
10	1.0%	0	33	58,361	-	-	58,361	30,653	3,078	268,000	23,000	7,653	-	15,946	49,677	1.38
11	1.0%	0	33	58,361	-	-	58,361	31,048		244,000	24,000	7,048	-	16,105	47,154	1.36
12	1.0%	1	34	60,130	-	-	60,130	30,417		220,000	24,000	6,417	-	16,266	46,684	1.44
13	1.0%	0	34	60,130	-	-	60,130	30,786		195,000	25,000	5,786	-	16,429	47,215	1.42
14	1.0%	0	34	60,130	-	-	60,130	31,129		169,000	26,000	5,129	-	16,593	47,722	1.40
15	1.0%	1	35	61,898	-	-	61,898	30,445		143,000	26,000	4,445	-	16,759	47,204	1.48
16	1.0%	0	35	61,898	-	-	61,898	30,761		116,000	27,000	3,761	-	16,927	47,688	1.46
17	1.0%	1	36	63,667	-	-	63,667	31,051		88,000	28,000	3,051	-	17,096	48,147	1.50
18	1.0%	0	36	63,667	-	-	63,667	31,314		59,000	29,000	2,314	-	17,267	48,582	1.48
19	1.0%	0	36	63,667	-	-	63,667	30,552		30,000	29,000	1,552	-	17,440	47,992	1.51
20	1.0%	1	37	65,435	-	-	65,435	30,789		-	30,000	789	-	17,614	48,403	1.55

Total Paid in Debt Service = 474,000 141,783

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Irontown
 COUNTY: Iron
 PROJECT DESCRIPTION: 300,000 gallon tank and 2800 ft 12-inch transmission line

FUNDING SOURCE: Federal SRF

100 % Loan & 0 % P.F.

ESTIMATED POPULATION:	90	NO. OF CONNECTIONS:	30 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$58.18 *			PROJECT TOTAL:	\$474,000
CURRENT % OF AGI:	2.17%	FINANCIAL PTS:	38	LOAN AMOUNT:	\$474,000
ESTIMATED MEDIAN AGI:	\$32,103			PRINC. FORGIVE.:	\$0
STATE AGI:	\$41,923			TOTAL REQUEST:	\$474,000
SYSTEM % OF STATE AGI:	77%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		0.00%
REQUIRED DEBT SERVICE:	\$15,800.00	\$26,618.33		\$15,800.00
*PARTIAL COVERAGE (15%):	\$2,370.00	\$3,992.75		\$2,370.00
*ADD. COVERAGE AND RESERVE (10%):	\$1,580.00	\$2,661.83		\$1,580.00
ANNUAL NEW DEBT PER CONNECTION:	\$658.33	\$1,109.10		\$658.33
O & M + FUNDED DEPRECIATION:	\$14,580.00	\$14,580.00		\$14,580.00
OTHER DEBT + COVERAGE:	\$0.00	\$0.00		\$0.00
REPLACEMENT RESERVE ACCOUNT:	\$0.00	\$0.00		\$0.00
ANNUAL EXPENSES PER CONNECTION:	\$486.00	\$486.00		\$486.00
TOTAL SYSTEM EXPENSES	\$34,330.00	\$47,852.92		\$34,330.00
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$95.36	\$132.92		\$95.36
% OF ADJUSTED GROSS INCOME:	3.56%	4.97%		3.56%

* Residential Connections

Irontown

PROPOSED BOND REPAYMENT SCHEDULE

100 % Loan & 0 % P.F.

PRINCIPAL	\$474,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	0.00%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	\$15,800.00	PRINC. FORGIVE.:	\$0.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$474,000.00		\$0.00 *	\$0.00	\$0.00	\$474,000.00	0
2018	\$474,000.00		\$16,000.00	\$16,000.00	\$0.00	\$458,000.00	1
2019	\$458,000.00		\$16,000.00	\$16,000.00	\$0.00	\$442,000.00	2
2020	\$442,000.00		\$16,000.00	\$16,000.00	\$0.00	\$426,000.00	3
2021	\$426,000.00		\$16,000.00	\$16,000.00	\$0.00	\$410,000.00	4
2022	\$410,000.00		\$16,000.00	\$16,000.00	\$0.00	\$394,000.00	5
2023	\$394,000.00		\$16,000.00	\$16,000.00	\$0.00	\$378,000.00	6
2024	\$378,000.00		\$16,000.00	\$16,000.00	\$0.00	\$362,000.00	7
2025	\$362,000.00		\$16,000.00	\$16,000.00	\$0.00	\$346,000.00	8
2026	\$346,000.00		\$16,000.00	\$16,000.00	\$0.00	\$330,000.00	9
2027	\$330,000.00		\$16,000.00	\$16,000.00	\$0.00	\$314,000.00	10
2028	\$314,000.00		\$16,000.00	\$16,000.00	\$0.00	\$298,000.00	11
2029	\$298,000.00		\$16,000.00	\$16,000.00	\$0.00	\$282,000.00	12
2030	\$282,000.00		\$16,000.00	\$16,000.00	\$0.00	\$266,000.00	13
2031	\$266,000.00		\$16,000.00	\$16,000.00	\$0.00	\$250,000.00	14
2032	\$250,000.00		\$16,000.00	\$16,000.00	\$0.00	\$234,000.00	15
2033	\$234,000.00		\$16,000.00	\$16,000.00	\$0.00	\$218,000.00	16
2034	\$218,000.00		\$16,000.00	\$16,000.00	\$0.00	\$202,000.00	17
2035	\$202,000.00		\$16,000.00	\$16,000.00	\$0.00	\$186,000.00	18
2036	\$186,000.00		\$16,000.00	\$16,000.00	\$0.00	\$170,000.00	19
2037	\$170,000.00		\$15,000.00	\$15,000.00	\$0.00	\$155,000.00	20
2038	\$155,000.00		\$16,000.00	\$16,000.00	\$0.00	\$139,000.00	21
2039	\$139,000.00		\$15,000.00	\$15,000.00	\$0.00	\$124,000.00	22
2040	\$124,000.00		\$16,000.00	\$16,000.00	\$0.00	\$108,000.00	23
2041	\$108,000.00		\$15,000.00	\$15,000.00	\$0.00	\$93,000.00	24
2042	\$93,000.00		\$16,000.00	\$16,000.00	\$0.00	\$77,000.00	25
2043	\$77,000.00		\$15,000.00	\$15,000.00	\$0.00	\$62,000.00	26
2044	\$62,000.00		\$16,000.00	\$16,000.00	\$0.00	\$46,000.00	27
2045	\$46,000.00		\$15,000.00	\$15,000.00	\$0.00	\$31,000.00	28
2046	\$31,000.00		\$16,000.00	\$16,000.00	\$0.00	\$15,000.00	29
2047	\$15,000.00		\$15,000.00	\$15,000.00	\$0.00	\$0.00	30
			\$474,000.00	\$474,000.00	\$0.00		

*Interest Only Payment

Irontown

PROPOSED BOND REPAYMENT SCHEDULE

100 % Loan & 0 % P.F.

PRINCIPAL	\$474,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	2.63%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	20	REVENUE BOND	
NOMIN. PAYMENT	\$30,780.37	PRINC. FORGIVE.:	\$0.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$474,000.00		\$3,670.60 *	\$0.00	\$3,670.60	\$474,000.00	0
2018	\$474,000.00		\$30,466.20	\$18,000.00	\$12,466.20	\$456,000.00	1
2019	\$456,000.00		\$30,992.80	\$19,000.00	\$11,992.80	\$437,000.00	2
2020	\$437,000.00		\$30,493.10	\$19,000.00	\$11,493.10	\$418,000.00	3
2021	\$418,000.00		\$30,993.40	\$20,000.00	\$10,993.40	\$398,000.00	4
2022	\$398,000.00		\$30,467.40	\$20,000.00	\$10,467.40	\$378,000.00	5
2023	\$378,000.00		\$30,941.40	\$21,000.00	\$9,941.40	\$357,000.00	6
2024	\$357,000.00		\$30,389.10	\$21,000.00	\$9,389.10	\$336,000.00	7
2025	\$336,000.00		\$30,836.80	\$22,000.00	\$8,836.80	\$314,000.00	8
2026	\$314,000.00		\$31,258.20	\$23,000.00	\$8,258.20	\$291,000.00	9
2027	\$291,000.00		\$30,653.30	\$23,000.00	\$7,653.30	\$268,000.00	10
2028	\$268,000.00		\$31,048.40	\$24,000.00	\$7,048.40	\$244,000.00	11
2029	\$244,000.00		\$30,417.20	\$24,000.00	\$6,417.20	\$220,000.00	12
2030	\$220,000.00		\$30,786.00	\$25,000.00	\$5,786.00	\$195,000.00	13
2031	\$195,000.00		\$31,128.50	\$26,000.00	\$5,128.50	\$169,000.00	14
2032	\$169,000.00		\$30,444.70	\$26,000.00	\$4,444.70	\$143,000.00	15
2033	\$143,000.00		\$30,760.90	\$27,000.00	\$3,760.90	\$116,000.00	16
2034	\$116,000.00		\$31,050.80	\$28,000.00	\$3,050.80	\$88,000.00	17
2035	\$88,000.00		\$31,314.40	\$29,000.00	\$2,314.40	\$59,000.00	18
2036	\$59,000.00		\$30,551.70	\$29,000.00	\$1,551.70	\$30,000.00	19
2037	\$30,000.00		\$30,789.00	\$30,000.00	\$789.00	\$0.00	20
			\$619,453.90	\$474,000.00	\$145,453.90		

*Interest Only Payment

Irontown

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	-
DWB Loan Amount:	\$	474,000
DWB Loan Term:		30
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	15,800

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	474,000
Existing Facility O&M Expense:	\$	14,580
Proposed Facility O&M Expense:	\$	14,580
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	-

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		30
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	-
Current Monthly User Charge:	\$	58.18
Needed Average Monthly User Charge:	\$	95.36

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	0	30	20,946	-	-	20,946	-	-	474,000	-	-	-	14,580	14,580	-
1	1.0%	0	30	34,330	-	-	34,330	16,000	1,580	458,000	16,000	-	-	14,580	32,160	1.23
2	1.0%	1	31	35,474	-	-	35,474	16,000	1,580	442,000	16,000	-	-	14,726	32,306	1.30
3	1.0%	0	31	35,474	-	-	35,474	16,000	1,580	426,000	16,000	-	-	14,873	32,453	1.29
4	1.0%	0	31	35,474	-	-	35,474	16,000	1,580	410,000	16,000	-	-	15,022	32,602	1.28
5	1.0%	1	32	36,619	-	-	36,619	16,000	1,580	394,000	16,000	-	-	15,172	32,752	1.34
6	1.0%	0	32	36,619	-	-	36,619	16,000	1,580	378,000	16,000	-	-	15,324	32,904	1.33
7	1.0%	0	32	36,619	-	-	36,619	16,000	1,580	362,000	16,000	-	-	15,477	33,057	1.32
8	1.0%	0	32	36,619	-	-	36,619	16,000	1,580	346,000	16,000	-	-	15,632	33,212	1.31
9	1.0%	1	33	37,763	-	-	37,763	16,000	1,580	330,000	16,000	-	-	15,788	33,368	1.37
10	1.0%	0	33	37,763	-	-	37,763	16,000	1,580	314,000	16,000	-	-	15,946	33,526	1.36
11	1.0%	0	33	37,763	-	-	37,763	16,000		298,000	16,000	-	-	16,105	32,105	1.35
12	1.0%	1	34	38,907	-	-	38,907	16,000		282,000	16,000	-	-	16,266	32,266	1.42
13	1.0%	0	34	38,907	-	-	38,907	16,000		266,000	16,000	-	-	16,429	32,429	1.40
14	1.0%	0	34	38,907	-	-	38,907	16,000		250,000	16,000	-	-	16,593	32,593	1.39
15	1.0%	1	35	40,052	-	-	40,052	16,000		234,000	16,000	-	-	16,759	32,759	1.46
16	1.0%	0	35	40,052	-	-	40,052	16,000		218,000	16,000	-	-	16,927	32,927	1.45
17	1.0%	1	36	41,196	-	-	41,196	16,000		202,000	16,000	-	-	17,096	33,096	1.51
18	1.0%	0	36	41,196	-	-	41,196	16,000		186,000	16,000	-	-	17,267	33,267	1.50
19	1.0%	0	36	41,196	-	-	41,196	16,000		170,000	16,000	-	-	17,440	33,440	1.48
20	1.0%	1	37	42,340	-	-	42,340	15,000		155,000	15,000	-	-	17,614	32,614	1.65
21	1.0%	0	37	42,340	-	-	42,340	16,000		139,000	16,000	-	-	17,790	33,790	1.53
22	1.0%	0	37	42,340	-	-	42,340	15,000		124,000	15,000	-	-	17,968	32,968	1.62
23	1.0%	1	38	43,485	-	-	43,485	16,000		108,000	16,000	-	-	18,148	34,148	1.58
24	1.0%	0	38	43,485	-	-	43,485	15,000		93,000	15,000	-	-	18,329	33,329	1.68
25	1.0%	0	38	43,485	-	-	43,485	16,000		77,000	16,000	-	-	18,513	34,513	1.56
26	1.0%	1	39	44,629	-	-	44,629	15,000		62,000	15,000	-	-	18,698	33,698	1.73
27	1.0%	0	39	44,629	-	-	44,629	16,000		46,000	16,000	-	-	18,885	34,885	1.61
28	1.0%	1	40	45,773	-	-	45,773	15,000		31,000	15,000	-	-	19,074	34,074	1.78
29	1.0%	0	40	45,773	-	-	45,773	16,000		15,000	16,000	-	-	19,264	35,264	1.66
30	1.0%	0	40	45,773	-	-	45,773	15,000		-	15,000	-	-	19,457	34,457	1.75

Total Paid in Debt Service = 474,000

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Irontown
 COUNTY: Iron
 PROJECT DESCRIPTION: 300,000 gallon tank and 2800 ft 12-inch transmission line

FUNDING SOURCE: Federal SRF

80 % Loan & 20 % P.F.

ESTIMATED POPULATION:	90	NO. OF CONNECTIONS:	30 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$58.18 *			PROJECT TOTAL:	\$474,000
CURRENT % OF AGI:	2.17%	FINANCIAL PTS:	38	LOAN AMOUNT:	\$379,000
ESTIMATED MEDIAN AGI:	\$32,103			PRINC. FORGIVE.:	\$95,000
STATE AGI:	\$41,923			TOTAL REQUEST:	\$474,000
SYSTEM % OF STATE AGI:	77%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.76%		AFTER REPAYMENT PENALTY & POINTS 0.00%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.76%		0.00%
REQUIRED DEBT SERVICE:	\$12,633.33	\$21,283.44		\$12,633.33
*PARTIAL COVERAGE (15%):	\$1,895.00	\$3,192.52		\$1,895.00
*ADD. COVERAGE AND RESERVE (10%):	\$1,263.33	\$2,128.34		\$1,263.33
ANNUAL NEW DEBT PER CONNECTION:	\$526.39	\$886.81		\$526.39
O & M + FUNDED DEPRECIATION:	\$14,580.00	\$14,580.00		\$14,580.00
OTHER DEBT + COVERAGE:	\$0.00	\$0.00		\$0.00
REPLACEMENT RESERVE ACCOUNT:	\$0.00	\$0.00		\$0.00
ANNUAL EXPENSES PER CONNECTION:	\$486.00	\$486.00		\$486.00
TOTAL SYSTEM EXPENSES	\$30,371.67	\$41,184.30		\$30,371.67
TAX REVENUE:	\$0.00	\$0.00		\$0.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$84.37	\$114.40		\$84.37
% OF ADJUSTED GROSS INCOME:	3.15%	4.28%		3.15%

* Residential Connections

Irontown

PROPOSED BOND REPAYMENT SCHEDULE

80 % Loan & 20 % P.F.

PRINCIPAL	\$379,000.00	ANTICIPATED CLOSING DATE	15-Sep-16
INTEREST	0.00%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	\$12,633.33	PRINC. FORGIVE.:	\$95,000.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$379,000.00		\$0.00 *	\$0.00	\$0.00	\$379,000.00	0
2018	\$379,000.00		\$13,000.00	\$13,000.00	\$0.00	\$366,000.00	1
2019	\$366,000.00		\$13,000.00	\$13,000.00	\$0.00	\$353,000.00	2
2020	\$353,000.00		\$13,000.00	\$13,000.00	\$0.00	\$340,000.00	3
2021	\$340,000.00		\$13,000.00	\$13,000.00	\$0.00	\$327,000.00	4
2022	\$327,000.00		\$13,000.00	\$13,000.00	\$0.00	\$314,000.00	5
2023	\$314,000.00		\$13,000.00	\$13,000.00	\$0.00	\$301,000.00	6
2024	\$301,000.00		\$13,000.00	\$13,000.00	\$0.00	\$288,000.00	7
2025	\$288,000.00		\$13,000.00	\$13,000.00	\$0.00	\$275,000.00	8
2026	\$275,000.00		\$13,000.00	\$13,000.00	\$0.00	\$262,000.00	9
2027	\$262,000.00		\$12,000.00	\$12,000.00	\$0.00	\$250,000.00	10
2028	\$250,000.00		\$13,000.00	\$13,000.00	\$0.00	\$237,000.00	11
2029	\$237,000.00		\$12,000.00	\$12,000.00	\$0.00	\$225,000.00	12
2030	\$225,000.00		\$13,000.00	\$13,000.00	\$0.00	\$212,000.00	13
2031	\$212,000.00		\$12,000.00	\$12,000.00	\$0.00	\$200,000.00	14
2032	\$200,000.00		\$13,000.00	\$13,000.00	\$0.00	\$187,000.00	15
2033	\$187,000.00		\$12,000.00	\$12,000.00	\$0.00	\$175,000.00	16
2034	\$175,000.00		\$13,000.00	\$13,000.00	\$0.00	\$162,000.00	17
2035	\$162,000.00		\$12,000.00	\$12,000.00	\$0.00	\$150,000.00	18
2036	\$150,000.00		\$13,000.00	\$13,000.00	\$0.00	\$137,000.00	19
2037	\$137,000.00		\$12,000.00	\$12,000.00	\$0.00	\$125,000.00	20
2038	\$125,000.00		\$13,000.00	\$13,000.00	\$0.00	\$112,000.00	21
2039	\$112,000.00		\$12,000.00	\$12,000.00	\$0.00	\$100,000.00	22
2040	\$100,000.00		\$13,000.00	\$13,000.00	\$0.00	\$87,000.00	23
2041	\$87,000.00		\$12,000.00	\$12,000.00	\$0.00	\$75,000.00	24
2042	\$75,000.00		\$13,000.00	\$13,000.00	\$0.00	\$62,000.00	25
2043	\$62,000.00		\$12,000.00	\$12,000.00	\$0.00	\$50,000.00	26
2044	\$50,000.00		\$13,000.00	\$13,000.00	\$0.00	\$37,000.00	27
2045	\$37,000.00		\$12,000.00	\$12,000.00	\$0.00	\$25,000.00	28
2046	\$25,000.00		\$13,000.00	\$13,000.00	\$0.00	\$12,000.00	29
2047	\$12,000.00		\$12,000.00	\$12,000.00	\$0.00	\$0.00	30
			\$379,000.00	\$379,000.00	\$0.00		

*Interest Only Payment

Irontown

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	95,000
DWB Loan Amount:	\$	379,000
DWB Loan Term:		30
DWB Loan Interest:		0.00%
DWB Loan Payment:	\$	12,633

DW Expenses (Estimated)

Proposed Facility Capital Cost:	\$	474,000
Existing Facility O&M Expense:	\$	14,580
Proposed Facility O&M Expense:	\$	14,580
O&M Inflation Factor:		1.0%
Existing Debt Service:	\$	-

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		30
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	-
Current Monthly User Charge:	\$	58.18
Needed Average Monthly User Charge:	\$	84.37

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio
0	1.0%	0	30	20,946	-	-	20,946	-	-	379,000	-	-	-	14,580	14,580	-
1	1.0%	0	30	30,372	-	-	30,372	13,000	1,263	366,000	13,000	-	-	14,580	28,843	1.21
2	1.0%	1	31	31,384	-	-	31,384	13,000	1,263	353,000	13,000	-	-	14,726	28,989	1.28
3	1.0%	0	31	31,384	-	-	31,384	13,000	1,263	340,000	13,000	-	-	14,873	29,136	1.27
4	1.0%	0	31	31,384	-	-	31,384	13,000	1,263	327,000	13,000	-	-	15,022	29,285	1.26
5	1.0%	1	32	32,396	-	-	32,396	13,000	1,263	314,000	13,000	-	-	15,172	29,435	1.32
6	1.0%	0	32	32,396	-	-	32,396	13,000	1,263	301,000	13,000	-	-	15,324	29,587	1.31
7	1.0%	0	32	32,396	-	-	32,396	13,000	1,263	288,000	13,000	-	-	15,477	29,740	1.30
8	1.0%	0	32	32,396	-	-	32,396	13,000	1,263	275,000	13,000	-	-	15,632	29,895	1.29
9	1.0%	1	33	33,409	-	-	33,409	13,000	1,263	262,000	13,000	-	-	15,788	30,051	1.36
10	1.0%	0	33	33,409	-	-	33,409	12,000	1,263	250,000	12,000	-	-	15,946	29,209	1.46
11	1.0%	0	33	33,409	-	-	33,409	13,000		237,000	13,000	-	-	16,105	29,105	1.33
12	1.0%	1	34	34,421	-	-	34,421	12,000		225,000	12,000	-	-	16,266	28,266	1.51
13	1.0%	0	34	34,421	-	-	34,421	13,000		212,000	13,000	-	-	16,429	29,429	1.38
14	1.0%	0	34	34,421	-	-	34,421	12,000		200,000	12,000	-	-	16,593	28,593	1.49
15	1.0%	1	35	35,434	-	-	35,434	13,000		187,000	13,000	-	-	16,759	29,759	1.44
16	1.0%	0	35	35,434	-	-	35,434	12,000		175,000	12,000	-	-	16,927	28,927	1.54
17	1.0%	1	36	36,446	-	-	36,446	13,000		162,000	13,000	-	-	17,096	30,096	1.49
18	1.0%	0	36	36,446	-	-	36,446	12,000		150,000	12,000	-	-	17,267	29,267	1.60
19	1.0%	0	36	36,446	-	-	36,446	13,000		137,000	13,000	-	-	17,440	30,440	1.46
20	1.0%	1	37	37,458	-	-	37,458	12,000		125,000	12,000	-	-	17,614	29,614	1.65
21	1.0%	0	37	37,458	-	-	37,458	13,000		112,000	13,000	-	-	17,790	30,790	1.51
22	1.0%	0	37	37,458	-	-	37,458	12,000		100,000	12,000	-	-	17,968	29,968	1.62
23	1.0%	1	38	38,471	-	-	38,471	13,000		87,000	13,000	-	-	18,148	31,148	1.56
24	1.0%	0	38	38,471	-	-	38,471	12,000		75,000	12,000	-	-	18,329	30,329	1.68
25	1.0%	0	38	38,471	-	-	38,471	13,000		62,000	13,000	-	-	18,513	31,513	1.54
26	1.0%	1	39	39,483	-	-	39,483	12,000		50,000	12,000	-	-	18,698	30,698	1.73
27	1.0%	0	39	39,483	-	-	39,483	13,000		37,000	13,000	-	-	18,885	31,885	1.58
28	1.0%	1	40	40,496	-	-	40,496	12,000		25,000	12,000	-	-	19,074	31,074	1.79
29	1.0%	0	40	40,496	-	-	40,496	13,000		12,000	13,000	-	-	19,264	32,264	1.63
30	1.0%	0	40	40,496	-	-	40,496	12,000		-	12,000	-	-	19,457	31,457	1.75

Total Paid in Debt Service = 379,000

Utah Department Of Environmental Quality Division Of Drinking Water

IRONTOWN	PWS ID: UTAH11070 Rating: Approved	06/01/2009	Active
Legal Contact	Site Updates	Consumptive Use Zone	
IRONTOWN TRACY HOBART FELTNER 87 N Highland Drive CEDAR CITY, UT 84721 Phone: 435-592-4317 County: IRON COUNTY System Type: Community Population: 45	Last Inventory Update: 03/18/2015 Last Surveyor Update: 07/01/2015 Surveyor: JOHN GALLIS Operating Period: 1/1 - 12/31 Last IPS Update: 05/19/2016 07:00:00	Irrigation Zone: 3 Date: 02/15/2013	

Admin Contacts

Name	Title	Office	Emergency	Email
FELTNER, TRACY HOBART		435-865-9901		TRACY@CICWCD.ORG

IPS Report

IPS Summary

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certification	Significant Deficiency
27	-3	40	-10	0

Physical Facility Points

Code	Description	Severity	Point Effective
M001	CURRENT EMERGENCY RESPONSE PROGRAM REC		-10
Facility	Comments	Status	Determined
			-10
V004	STORAGE FACILITY INADEQUATE LADDERS OR RAILINGS	MIN	2
Facility	Comments	Status	Determined
ST001 OLD IRONTOWN STORAGE RESERVOIR		Active	2
V005	STORAGE FACILITY VENT NOT TURNED DOWN	MIN	2
Facility	Comments	Status	Determined
ST001 OLD IRONTOWN STORAGE RESERVOIR	Mushroom cap needs to extend 2 inches below bottom of screen.	Active	2
V008	STORAGE ACCESS NOT A MIN. OF 4 IN ABOVE SURFACE	MIN	3
Facility	Comments	Status	Determined
ST001 OLD IRONTOWN STORAGE RESERVOIR		Active	3

Total Effective Points: -3

Microbial Rule Violations

Determined	Compliance Period	Code	Violation Type	Return To Compliance	Point Effective
09/16/2015	07/01/2015 - 07/31/2015	22	MCL (TCR), MONTHLY	N	40
Total Effective Points: 40					

Operator Certification Points

Type	Level Required	Highest Certificate	Point Effective
Distribution	Small System	Dist 3	-10
Treatment			0
Total Effective Points: -10			

Agenda Item

4(C)(ii)(c)

**DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN**

APPLICANT'S REQUEST

The Big Water Town is requesting \$879,000 to refurbish a 100,000 gallon storage tank and install 8-inch distribution line. The water system is currently operating under the Glen Canyon Special Service District. Included in this loan Big Water Town would like to refinance \$349,000 of Glen Canyon Special Service District debt and take ownership and maintenance responsibility going forward. The total funding request is \$1,228,000.

STAFF COMMENTS:

Glen Canyon Special Service District is legal owner of the water system that services Big Water Town. With this construction project and refinancing Big Water Town will become legal owner and operator of the water system and Glen Canyon Special Service District will be dissolved.

The construction project includes 1) refurbishing an existing 100,000 gallon concrete tank for use in the culinary water system 2) add a standby power generator and fuel tank to the well pump house for emergency backup 3) acquire and install radio read meters and data collection system to improve metering accuracy and reduce operational costs and 4) install a new 8" distribution line, and maintenance and replacement of 4 PRV facilities.

Big Water Town's local MAGI of \$29,553 is approximately 70% of the State's \$41,923 MAGI. They currently have an average water bill of approximately \$46.14 per month, which is 1.87% of local MAGI. Due to Big Water Town's MAGI being below 80% of the State's MAGI and its water bill being greater than 1.75% of its MAGI the Town qualifies for principal forgiveness. A loan of \$1,228,000 for 30 years with a 2.45% interest rate and \$176,000 in principal forgiveness would require Big Water Town to maintain an average water bill of \$48.18, 1.96% of local MAGI. The principal forgiveness amount of \$176,000 is the equivalent of 20% of the construction project cost of \$879,000. Big Water Town has a priority rating of 18.5.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a \$1,228,000 construction loan with 2.45% interest/fee per annum, for 30 years, with \$176,000 in principal forgiveness for a repayable amount of \$1,052,000 to Glen Canyon/Big Water Town, with the condition that they resolve all issues on their compliance report.

Glen Canyon/Big Water Town
Presented to the Drinking Water Board
July 8, 2016

APPLICANT'S LOCATION:

Big Water Town City is located in Kane County.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

The construction project includes refurbishing an existing 100,000 gallon concrete tank for use in the culinary water system. Add a standby power generator and fuel tank to the well pump house for emergency backup. Acquire and install radio read meters and data collection system to improve metering accuracy and to reduce operational costs. Install a new 8" distribution line, and maintenance and replacement of 4 PRV facilities.

Glen Canyon/Big Water Town
 Presented to the Drinking Water Board
 July 8, 2016

POPULATION GROWTH:

Big Water Town is estimated by the Governor’s Office of Planning and Budget to grow by 2.4% per year through the year 2040. Big Water Town does not expect grow as fast as these estimates predict.

	Year	Population	Connections/ERC’s
Current	2016	475	382
Projected	2040	840	676

IMPLEMENTATION SCHEDULE:

DWB Funding Authorization:	July 8, 2016
Plans Submitted:	October 13, 2016
Plan Approval:	November 12, 2016
Advertise for Bids:	November 26, 2016
Bid Opening:	December 26, 2016
Loan Closing:	January 25, 2017
Begin Construction:	January 25, 2017
Complete Construction:	June 24, 2017
Receive DDW OP:	July 24, 2017

COST ESTIMATE:

Legal:	\$25,079
Administrative-Environmental:	\$23,500
Administrative-Financial Consultant:	\$10,000
Administrative-Refinance:	\$349,000
Engineering - Design:	\$41,500
Engineering - CMS:	\$48,000
Engineering-GIS/Geo/Misc:	\$28,500
Construction-Storage Tank:	\$111,400
Construction-Distribution:	\$435,350
Construction-Other	\$63,600
Contingency-10.4% of Const.:	\$91,600
Total Capital Cost (Rounded):	\$1,228,000

Glen Canyon/Big Water Town
Presented to the Drinking Water Board
July 8, 2016

COST ALLOCATION:

The cost allocation proposed for the project is shown below.

<u>Funding Source</u>	<u>Cost Sharing</u>	<u>Percent of Project</u>
DWB Loan (2.45%, 30-yr)	\$1,052,000	86%
DWB-Principal Forgiveness	\$176,000	14%
Applicant	\$0	0%
Total Amount:	<u>\$1,228,000</u>	<u>100.0%</u>

ESTIMATED ANNUAL COST OF WATER SERVICE:

Annual Operation & Maintenance:	\$155,640
Existing Annual Debt Service:*	\$52,082
DDW Annual Debt Service (2.45%, 30yrs):	\$49,928
DDW 10% Coverage:	\$4,993
15% Coverage & Replacement Reserve:	\$10,278
Monthly New Debt Cost/ERC:**	\$7.85
Total Monthly Cost /ERC:	\$48.18
Cost as % of MAGI:	1.96%

* This debt has been refinanced and rolled into the *DDW Annual Debt Service* cost below.

** This item only includes the new construction project debt. The refinanced debt plus new construction debt is \$11.98/ERC/Month. Before refinancing water users were paying \$11.36/ERC/Month on their existing debt.

Glen Canyon/Big Water Town
Presented to the Drinking Water Board
July 8, 2016

CONTACT INFORMATION:

APPLICANT:	Big Water Town Drawer 410127 Big Water, Utah 84741 435-675-3760 bigwaterclerk@gmail.com
PRESIDING OFFICIAL & CONTACT PERSON:	David Schmuker-Mayor Drawer 410127 Big Water, Utah 84741 435-675-3760 bigwaterclerk@gmail.com
TREASURER/RECORDER	Jennifer Johnson 435-675-3760 bigwaterclerk@gmail.com
CONSULTING ENGINEER:	Dustyn Shaffer Sunrise Engineering 11 North 300 West Washington, Utah 84780 Phone: 435-652-8450 Email: dshaffer@sunrise-eng.com
FINANCIAL CONSULTANT:	Bruce Williams Zions Public Finance 1 South main, 18 th floor Salt Lake City, Utah 84133 801-844-7377 Bruce.williams@zionsbankcorp.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Glen Canyon/Big Water
 COUNTY: Weber
 PROJECT DESCRIPTION: Refurbish 100,000 gallon storage tank and distribution line

FUNDING SOURCE: Federal SRF

86 % Loan & 14 % P.F.

ESTIMATED POPULATION:	475	NO. OF CONNECTIONS:	382 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	\$46.14 *			PROJECT TOTAL:	\$1,228,000
CURRENT % OF AGI:	1.87%	FINANCIAL PTS:	44	LOAN AMOUNT:	\$1,052,000
ESTIMATED MEDIAN AGI:	\$29,553			PRINC. FORGIVE.:	\$176,000
STATE AGI:	\$41,923			TOTAL REQUEST:	\$1,228,000
SYSTEM % OF STATE AGI:	70%				

	@ ZERO % RATE 0%	@ RBBI MKT RATE 3.48%		AFTER REPAYMENT PENALTY & POINTS 2.45%
<u>SYSTEM</u>				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.48%		2.45%
REQUIRED DEBT SERVICE:	\$35,066.67	\$57,055.40		\$49,927.59
*PARTIAL COVERAGE (15%):	\$0.00	\$0.00		\$0.00
*ADD. COVERAGE AND RESERVE (10%):	\$3,506.67	\$5,705.54		\$4,992.76
ANNUAL NEW DEBT PER CONNECTION:	\$100.98	\$164.30		\$143.77
O & M + FUNDED DEPRECIATION:	\$155,640.00	\$155,640.00		\$155,640.00
OTHER DEBT + COVERAGE:	\$0.00	\$0.00		\$0.00
REPLACEMENT RESERVE ACCOUNT:	\$9,535.33	\$10,634.77		\$10,278.38
ANNUAL EXPENSES PER CONNECTION:	\$432.40	\$435.27		\$434.34
TOTAL SYSTEM EXPENSES	\$203,748.67	\$229,035.71		\$220,838.73
TAX REVENUE:	\$71,308.00	\$71,308.00		\$71,308.00
<u>RESIDENCE</u>				
MONTHLY NEEDED WATER BILL:	\$44.45	\$49.96		\$48.18
% OF ADJUSTED GROSS INCOME:	1.80%	2.03%		1.96%

*

R309-700-5

Glen Canyon/Big Water
Weber
March 24, 2015

TABLE 2 FINANCIAL CONSIDERATIONS

	POINTS	
1. COST EFFECTIVENESS RATIO (SELECT ONE)		
A. Project cost \$0 to \$500 per benefitting connection	16	
B. \$501 to \$1,500	14	
C. \$1,501 to \$2,000	11	
D. \$2,001 to \$3,000	8	
E. \$3,001 to \$5,000	4	X
F. \$5,001 to \$10,000	1	
G. Over \$10,000	0	
	\$3,215	
2. CURRENT LOCAL MEDIAN ADJUSTED GROSS INCOME (AGI) (SELECT ONE)		
A. Less than 70% of State Median AGI	19	
B. 71 to 80% of State Median AGI	16	X
C. 81 to 95% of State Median AGI	13	
D. 96 to 110% of State Median AGI	9	
E. 111 to 130% of State Median AGI	6	
E. 131 to 150% of State Median AGI	3	
F. Greater than 150% of State Median AGI	0	
	70%	
3. PROJECT FUNDING CONTRIBUTED BY APPLICANT (SELECT ONE)		
a. Greater than 25% of project funds	17	
b. 15 to 25% of project funds	14	
c. 10 to 15% of project funds	11	
c. 5 to 10% of project funds	8	
d. 2 to 5% of project funds	4	
e. Less than 2% of project funds	0	X
	0.0%	
4. ABILITY TO REPAY LOAN		
4. WATER BILL (INCLUDING TAXES) AFTER PROJECT IS BUILT RELATIVE TO LOCAL MEDIAN ADJUSTED GROSS INCOME (SELECT ONE)		
a. Greater than 2.50% of local median AGI	16	
b. 2.01 to 2.50% of local median AGI	12	
c. 1.51 to 2.00% of local median AGI	8	X
d. 1.01 to 1.50% of local median AGI	3	
e. 0 to 1.00% of local median AGI	0	
	1.96%	
5. SPECIAL INCENTIVE POINTS Applicant: (Mark all that apply)		
A. has a replacement fund receiving annual deposits of 5% of the system's drinking water budget been established, and has already accumulated a minimum of 10% of said annual DW budget in this reserve fund.	5	X
B. Has a replacement fund equal to at least 15% or 20% of annual DW budget.	5	X
C. Is creating or enhancing a regionalization plan	16	
D. Has a rate structure encouraging conservation	6	X
TOTAL POINTS FOR FINANCIAL NEED	44	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED	100	

Glen Canyon/Big Water

PROPOSED BOND REPAYMENT SCHEDULE

86 % Loan & 14 % P.F.

PRINCIPAL	\$1,052,000.00	ANTICIPATED CLOSING DATE	25-Jan-17
INTEREST	2.45%	FIRST P&I PAYMENT DUE	01-Jul-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	\$49,927.59	PRINC. FORGIVE.:	\$176,000.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	\$1,052,000.00		\$11,168.73 *	\$0.00	\$11,168.73	\$1,052,000.00	0
2018	\$1,052,000.00		\$49,774.00	\$24,000.00	\$25,774.00	\$1,028,000.00	1
2019	\$1,028,000.00		\$50,186.00	\$25,000.00	\$25,186.00	\$1,003,000.00	2
2020	\$1,003,000.00		\$49,573.50	\$25,000.00	\$24,573.50	\$978,000.00	3
2021	\$978,000.00		\$49,961.00	\$26,000.00	\$23,961.00	\$952,000.00	4
2022	\$952,000.00		\$50,324.00	\$27,000.00	\$23,324.00	\$925,000.00	5
2023	\$925,000.00		\$49,662.50	\$27,000.00	\$22,662.50	\$898,000.00	6
2024	\$898,000.00		\$50,001.00	\$28,000.00	\$22,001.00	\$870,000.00	7
2025	\$870,000.00		\$50,315.00	\$29,000.00	\$21,315.00	\$841,000.00	8
2026	\$841,000.00		\$49,604.50	\$29,000.00	\$20,604.50	\$812,000.00	9
2027	\$812,000.00		\$49,894.00	\$30,000.00	\$19,894.00	\$782,000.00	10
2028	\$782,000.00		\$50,159.00	\$31,000.00	\$19,159.00	\$751,000.00	11
2029	\$751,000.00		\$50,399.50	\$32,000.00	\$18,399.50	\$719,000.00	12
2030	\$719,000.00		\$49,615.50	\$32,000.00	\$17,615.50	\$687,000.00	13
2031	\$687,000.00		\$49,831.50	\$33,000.00	\$16,831.50	\$654,000.00	14
2032	\$654,000.00		\$50,023.00	\$34,000.00	\$16,023.00	\$620,000.00	15
2033	\$620,000.00		\$50,190.00	\$35,000.00	\$15,190.00	\$585,000.00	16
2034	\$585,000.00		\$50,332.50	\$36,000.00	\$14,332.50	\$549,000.00	17
2035	\$549,000.00		\$49,450.50	\$36,000.00	\$13,450.50	\$513,000.00	18
2036	\$513,000.00		\$49,568.50	\$37,000.00	\$12,568.50	\$476,000.00	19
2037	\$476,000.00		\$49,662.00	\$38,000.00	\$11,662.00	\$438,000.00	20
2038	\$438,000.00		\$49,731.00	\$39,000.00	\$10,731.00	\$399,000.00	21
2039	\$399,000.00		\$49,775.50	\$40,000.00	\$9,775.50	\$359,000.00	22
2040	\$359,000.00		\$49,795.50	\$41,000.00	\$8,795.50	\$318,000.00	23
2041	\$318,000.00		\$49,791.00	\$42,000.00	\$7,791.00	\$276,000.00	24
2042	\$276,000.00		\$49,762.00	\$43,000.00	\$6,762.00	\$233,000.00	25
2043	\$233,000.00		\$49,708.50	\$44,000.00	\$5,708.50	\$189,000.00	26
2044	\$189,000.00		\$50,630.50	\$46,000.00	\$4,630.50	\$143,000.00	27
2045	\$143,000.00		\$50,503.50	\$47,000.00	\$3,503.50	\$96,000.00	28
2046	\$96,000.00		\$49,352.00	\$47,000.00	\$2,352.00	\$49,000.00	29
2047	\$49,000.00		\$50,200.50	\$49,000.00	\$1,200.50	\$0.00	30
			----- \$1,508,946.23	----- \$1,052,000.00	----- \$456,946.23		

*Interest Only Payment

Glen Canyon/Big Water

DWB Loan Terms

Local Share (total):	\$	-
Other Agency Funding:	\$	-
DWB Grant Amount:	\$	176,000
DWB Loan Amount:	\$	1,052,000
DWB Loan Term:		30
DWB Loan Interest:		2.45%
DWB Loan Payment:	\$	49,928

DW Expenses (Estimated)

Proposed Facility Capital Cost:	#VALUE!
Existing Facility O&M Expense:	\$ 155,640
Proposed Facility O&M Expense:	\$ 155,640
O&M Inflation Factor:	1.0%
Existing Debt Service:	\$ -

DW Revenue Sources (Projected)

Beginning Cash:	\$	-
Existing Customers (ERC):		382
Projected Growth Rate:		1.0%
Impact Fee/Connection Fee:	\$	-
Current Monthly User Charge:	\$	46.14
Needed Average Monthly User Charge:	\$	48.18

DW Revenue Projections

Yr	Growth Rate (%)	Annual Growth (ERC)	Total Users (ERC)	User Charge Revenue	Impact Fee Revenue	Property Tax Revenue	Total Revenue	DWB Loan Repayment	DWB Loan Reserves	Remaining Principal	Principal Payment	Interest Payment	Existing DW Debt Service	O&M Expenses	Total Expenses	Debt Service Ratio	
0	1.0%	4	382	211,498	-	71,308	282,806	-	-	1,052,000	-	-	-	155,640	155,640	-	
1	1.0%	4	386	223,151	-	71,308	294,459	49,774	4,993	1,028,000	24,000	25,774	-	155,640	210,407	2.79	
2	1.0%	4	390	225,464	-	71,308	296,772	50,186	4,993	1,003,000	25,000	25,186	-	157,196	212,375	2.78	
3	1.0%	4	394	227,776	-	71,308	299,084	49,574	4,993	978,000	25,000	24,574	-	158,768	213,335	2.83	
4	1.0%	4	398	230,089	-	71,308	301,397	49,961	4,993	952,000	26,000	23,961	-	160,356	215,310	2.82	
5	1.0%	3	401	231,823	-	71,308	303,131	50,324	4,993	925,000	27,000	23,324	-	161,960	217,276	2.81	
6	1.0%	5	406	234,713	-	71,308	306,021	49,663	4,993	898,000	27,000	22,663	-	163,579	218,234	2.87	
7	1.0%	4	410	237,026	-	71,308	308,334	50,001	4,993	870,000	28,000	22,001	-	165,215	220,209	2.86	
8	1.0%	4	414	239,338	-	71,308	310,646	50,315	4,993	841,000	29,000	21,315	-	166,867	222,175	2.86	
9	1.0%	4	418	241,651	-	71,308	312,959	49,605	4,993	812,000	29,000	20,605	-	168,536	223,133	2.91	
10	1.0%	4	422	243,963	-	71,308	315,271	49,894	4,993	782,000	30,000	19,894	-	170,221	225,108	2.91	
11	1.0%	4	426	246,276	-	71,308	317,584	50,159		751,000	31,000	19,159	-	171,923	222,082	2.90	
12	1.0%	4	430	248,588	-	71,308	319,896	50,400		719,000	32,000	18,400	-	173,643	224,042	2.90	
13	1.0%	5	435	251,479	-	71,308	322,787	49,616		687,000	32,000	17,616	-	175,379	224,995	2.97	
14	1.0%	4	439	253,791	-	71,308	325,099	49,832		654,000	33,000	16,832	-	177,133	226,964	2.97	
15	1.0%	4	443	256,104	-	71,308	327,412	50,023		620,000	34,000	16,023	-	178,904	228,927	2.97	
16	1.0%	5	448	258,994	-	71,308	330,302	50,190		585,000	35,000	15,190	-	180,693	230,883	2.98	
17	1.0%	4	452	261,307	-	71,308	332,615	50,333		549,000	36,000	14,333	-	182,500	232,833	2.98	
18	1.0%	5	457	264,197	-	71,308	335,505	49,451		513,000	36,000	13,451	-	184,325	233,776	3.06	
19	1.0%	4	461	266,510	-	71,308	337,818	49,569		476,000	37,000	12,569	-	186,168	235,737	3.06	
20	1.0%	5	466	269,400	-	71,308	340,708	49,662		438,000	38,000	11,662	-	188,030	237,692	3.07	
21	1.0%	5	471	272,291	-	71,308	343,599	49,731		399,000	39,000	10,731	-	189,910	239,641	3.09	
22	1.0%	4	475	274,603	-	71,308	345,911	49,776		359,000	40,000	9,776	-	191,809	241,585	3.10	
23	1.0%	5	480	277,494	-	71,308	348,802	49,796		318,000	41,000	8,796	-	193,728	243,523	3.11	
24	1.0%	5	485	280,384	-	71,308	351,692	49,791		276,000	42,000	7,791	-	195,665	245,456	3.13	
25	1.0%	5	490	283,275	-	71,308	354,583	49,762		233,000	43,000	6,762	-	197,622	247,384	3.15	
26	1.0%	5	495	286,165	-	71,308	357,473	49,709		189,000	44,000	5,709	-	199,598	249,306	3.18	
27	1.0%	5	500	289,056	-	71,308	360,364	50,631		143,000	46,000	4,631	-	201,594	252,224	3.14	
28	1.0%	5	505	291,946	-	71,308	363,254	50,504		96,000	47,000	3,504	-	203,610	254,113	3.16	
29	1.0%	5	510	294,837	-	71,308	366,145	49,352		49,000	47,000	2,352	-	205,646	254,998	3.25	
30	1.0%	5	515	297,728	-	71,308	369,036	50,201		-	49,000	1,201	-	207,702	257,903	3.21	
Total Paid in Debt Service =											1,052,000	445,778					

Agenda Item

5

House Bill 305 Related Rules

During the 2016 Legislative Session the legislature passed and the Governor signed into law House Bill 305 (See lines 69 – 72 in the attached copy of the enrolled bill). This bill directed the Board and staff to adopt rules requiring that Certified Operators complete and sign the Utah Water Use Data Forms attesting to the accuracy of the information contained on the submitted form.

In response to this legal directive staff has prepared changes to three rules as follows:

1. Specific changes to the “Annual Report” rule requirement as listed in R309-105-15,
2. Changes to the Operator Certification rules requiring that a Certified Operator sign the form, and
3. An addition to the Improvement Priority System rule assessing points for not completing and submitting the report.

Staff Recommendation: Staff recommends that the Board authorize staff to proceed with the rule making process by filing the indicated changes with the State Division of Administrative Rules.

1 **WATER RIGHTS AND RESOURCES AMENDMENTS**

2 2016 GENERAL SESSION

3 STATE OF UTAH

4 **Chief Sponsor: Joel K. Briscoe**

5 Senate Sponsor: Margaret Dayton

7 **LONG TITLE**

8 **General Description:**

9 This bill deals with the accuracy of water use data.

10 **Highlighted Provisions:**

11 This bill:

12 ▶ instructs the Drinking Water Board to require a certified water operator of a public
13 water supplier, or professional engineer performing the duties of an operator, to
14 verify the accuracy of water use and supply data submitted to the Division of
15 Drinking Water;

16 ▶ authorizes the Division of Water Rights to collect and validate water use data; and

17 ▶ makes technical changes.

18 **Money Appropriated in this Bill:**

19 None

20 **Other Special Clauses:**

21 None

22 **Utah Code Sections Affected:**

23 AMENDS:

24 **19-4-104**, as last amended by Laws of Utah 2012, Chapter 360

25 **73-5-8**, as last amended by Laws of Utah 2005, Chapter 215

26 **73-10-18**, as last amended by Laws of Utah 1969, Chapter 198

27 **73-10-19**, as last amended by Laws of Utah 1983, Chapter 318

28 **73-10-20**, as last amended by Laws of Utah 1977, Chapter 281

30 *Be it enacted by the Legislature of the state of Utah:*

31 Section 1. Section **19-4-104** is amended to read:

32 **19-4-104. Powers of board.**

33 (1) (a) The board may make rules in accordance with Title 63G, Chapter 3, Utah

34 Administrative Rulemaking Act:

35 (i) establishing standards that prescribe the maximum contaminant levels in any public
36 water system and provide for monitoring, record-keeping, and reporting of water quality related
37 matters;

38 (ii) governing design, construction, operation, and maintenance of public water
39 systems;

40 (iii) granting variances and exemptions to the requirements established under this
41 chapter that are not less stringent than those allowed under federal law;

42 (iv) protecting watersheds and water sources used for public water systems; and

43 (v) governing capacity development in compliance with Section 1420 of the federal
44 Safe Drinking Water Act, 42 U.S.C.[A:] Sec. 300f et seq.;

45 (b) The board may:

46 (i) order the director to:

47 (A) issue orders necessary to enforce the provisions of this chapter;

48 (B) enforce the orders by appropriate administrative and judicial proceedings; or

49 (C) institute judicial proceedings to secure compliance with this chapter;

50 (ii) (A) hold a hearing that is not an adjudicative proceeding relating to the

51 administration of this chapter; or

52 (B) appoint hearing officers to conduct a hearing that is not an adjudicative proceeding;

53 or

54 (iii) request and accept financial assistance from other public agencies, private entities,

55 and the federal government to carry out the purposes of this chapter.

56 (c) The board shall:

57 (i) require the submission to the director of plans and specifications for construction of,

58 substantial addition to, or alteration of public water systems for review and approval by the
59 board before that action begins and require any modifications or impose any conditions that
60 may be necessary to carry out the purposes of this chapter;

61 (ii) advise, consult, cooperate with, provide technical assistance to, and enter into
62 agreements, contracts, or cooperative arrangements with state, federal, or interstate agencies,
63 municipalities, local health departments, educational institutions, and others necessary to carry
64 out the purposes of this chapter and to support the laws, ordinances, rules, and regulations of
65 local jurisdictions;

66 (iii) develop and implement an emergency plan to protect the public when declining
67 drinking water quality or quantity creates a serious health risk and issue emergency orders if a
68 health risk is imminent; [~~and~~]

69 (iv) require a certified operator of a public water supplier to verify by signature and
70 certification number, or a professional engineer performing the duties of a certified water
71 operator to verify by signature and stamp, the accuracy of any data on water use and water
72 supply submitted by the public water supplier to the division; and

73 [~~(iv)~~] (v) meet the requirements of federal law related or pertaining to drinking water.

74 (2) (a) The board may adopt and enforce standards and establish fees for certification
75 of operators of any public water system.

76 (b) The board may not require certification of operators for a water system serving a
77 population of 800 or less except:

78 (i) to the extent required for compliance with Section 1419 of the federal Safe Drinking
79 Water Act, 42 U.S.C.[~~A~~] Sec. 300f et seq.; and

80 (ii) for a system that is required to treat its drinking water.

81 (c) The certification program shall be funded from certification and renewal fees.

82 (3) Routine extensions or repairs of existing public water systems that comply with the
83 rules and do not alter the system's ability to provide an adequate supply of water are exempt
84 from the provisions of Subsection (1)(c)(i).

85 (4) (a) The board may adopt and enforce standards and establish fees for certification

86 of persons engaged in administering cross connection control programs or backflow prevention
87 assembly training, repair, and maintenance testing.

88 (b) The certification program shall be funded from certification and renewal fees.

89 (5) A board member may not speak or act for the board unless the board member is
90 authorized by a majority of a quorum of the board in a vote taken at a meeting of the board.

91 Section 2. Section 73-5-8 is amended to read:

92 **73-5-8. Audits -- Reports by users to engineer.**

93 (1) The Division of Water Rights shall, in accordance with Title 63G, Chapter 3, Utah
94 Administrative Rulemaking Act, make rules specifying:

95 (a) what water use data a person shall report, pursuant to this section; and

96 (b) how the Division of Water Rights shall validate the data described in Subsection

97 (1)(a).

98 (2) The Division of Water Rights may collect and validate water use data.

99 (3) Every person using water from any river system or water source, when requested by
100 the state engineer, shall within 30 days after such request report to the state engineer in writing:

101 ~~[(1)]~~ (a) the nature of the use of any such water;

102 ~~[(2)]~~ (b) the area on which used;

103 ~~[(3)]~~ (c) the kind of crops to be grown; ~~and~~

104 ~~[(4)]~~ (d) water elevations on wells or tunnels; and

105 (e) quantity of ~~underground~~ water used.

106 Section 3. Section 73-10-18 is amended to read:

107 **73-10-18. Division of Water Resources -- Creation -- Power and authority.**

108 (1) There is created the Division of Water Resources, which shall be within the
109 Department of Natural Resources under the administration and general supervision of the
110 executive director of natural resources and under the policy direction of the Board of Water
111 Resources.

112 (2) The Division of Water Resources shall:

113 (a) be the water ~~[resource(s)]~~ resource authority for the state ~~[of Utah, shall]; and~~

114 (b) assume all of the functions, powers, duties, rights, and responsibilities of the Utah
115 water and power board except those which are delegated to the board by this act and is vested
116 with such other functions, powers, duties, rights and responsibilities as provided in this act and
117 other law.

118 Section 4. Section 73-10-19 is amended to read:

119 **73-10-19. Director's power and authority.**

120 The director shall:

121 (1) be the executive and administrative head of the Division of Water Resources;

122 (2) ~~[and shall be a person]~~ be selected with special reference to ~~[his]~~ training,
123 experience, and interest in the field of water conservation and development[-];

124 ~~[The director of the Division of Water Resources shall]~~

125 (3) administer the Division of Water Resources ~~[and shall]~~;

126 (4) succeed to all of the powers and duties conferred upon the executive secretary of
127 the Utah water and power board pursuant to Title 73, Chapter 10, Board of Water Resources -
128 Division of Water Resources~~[- The director shall]~~; and

129 (5) have the power, within ~~[policies]~~ rules established by the Board of Water
130 Resources, to:

131 ~~[(+)]~~ (a) make studies, investigations, and plans for the full development and utilization
132 and promotion of the water and power resources of the state, including preliminary surveys,
133 stream gauging, examinations, tests, and other estimates either separately or in consultation
134 with federal, state, and other agencies;

135 ~~[(2)]~~ (b) initiate and conduct water resource investigations, surveys and studies,
136 prepare plans and estimates, make reports thereon, and perform necessary work to develop an
137 over-all state water plan;

138 ~~[(3)]~~ (c) file applications in the name of the division for the appropriation of water[-
139 All pending water applications heretofore filed in behalf of the state or any agency thereof for
140 the use and benefit of the state are transferred to the board, and it is authorized to take such
141 action thereon as it may deem proper];

142 [~~(4)~~] (d) take all action necessary to acquire or perfect water rights for projects
143 sponsored by the board; and

144 [~~(5)~~] (e) accept, execute, and deliver deeds and all other conveyances.

145 Section 5. Section **73-10-20** is amended to read:

146 **73-10-20. Loans for water systems -- Legislative declaration -- Authority of**
147 **Division of Water Resources to audit water data.**

148 The Legislature recognizes and declares that:

149 (1) the development, protection, and maintenance of adequate and safe water supplies
150 for human consumption is vital to public health, safety, and welfare;

151 (2) [~~that~~] there exists within the state a need to assist cities, towns, improvement
152 districts, and special service districts in providing an adequate and safe water supply for those
153 users from municipal and district systems; and

154 (3) [~~that~~] the acquisition or construction of systems and the improvement and extension
155 of existing systems, based on proper planning and sound engineering, will not only provide
156 safer water supplies, but will also serve to ensure that the water resources of the state are used
157 in an efficient manner and will avoid wasteful practices.

R309-105-15. Annual Reports.

- (1) All community water systems shall be required to complete annual report forms furnished by the Division of Drinking Water. The information to be provided shall include: the status of all water system projects started during the previous year; water demands met by the system; problems experienced; and anticipated projects.
- (2) All community and non-transient non-community water systems shall be required to complete the annual "Utah Water Use Data Form" furnished by the Utah Division of Water Rights in accordance with rules R309-400-12, and R309-300-5.

R309-300-5. General Policies.

1. In order to become a certified water operator or specialist, an individual shall pass an examination administered by the Division of Drinking Water or qualify for the grandparent provisions outlined in R309-300-13.
2. Any properly qualified operator (see Minimum Required Qualifications for Utah Waterworks Operators Table 5) may apply for unrestricted certification.
3. Any properly qualified person (see Minimum Required Qualifications for Water System Specialists Table 6) may apply for Specialist certification. A Specialist, regardless of discipline or grade, shall not act as a direct responsible charge operator, or be in direct operation or supervise the direct operation of, any public drinking water system.
4. An individual who holds a current Specialist Certificate may apply for an Operator Certificate of the same discipline and grade upon verification of direct employment with a public drinking water system. An individual who holds a current Operator Certificate (Restricted and Unrestricted) may apply for a Specialist Certificate of the same discipline and grade if that operator leaves the direct employment of a drinking water system.
5. All direct responsible charge operators shall be certified at a minimum of the grade level of the water system with an appropriate certificate. Where 24-hour shift operation is used or required, one operator per shift must be certified at the classification of the system operated.
6. The Director, upon recommendation from the Commission, may waive examination of applicants holding a valid certificate or license issued in compliance with other state certification plans having equivalent standards, and grant reciprocity.
7. A grandparent certificate will require normal renewal as with other certificates and will be restricted to the existing position, person, and system for which it was issued. No further examination will be required unless the grade of the drinking water system increases or the operator seeks to change the certificate discipline or grade. At that time, all normal certification requirements must be met.
8. Every community and non-transient non-community drinking water system and all public systems that utilize treatment/filtration of the drinking water shall have at least one operator certified at the classified grade of the water system. Certification must be appropriate for the type of system operated (treatment and/or distribution).
9. An individual who is issued an Operator Certificate shall be employed by, or an appointed volunteer for, a public drinking water supply located in Utah.
10. If the Distribution Manager, Treatment Plant Manager, or Direct Responsible Charge Operator is changed or leaves a particular water system, the water system management must notify the Secretary to the Operator Certification Commission within ten days by contacting

the Division of Drinking Water in writing. Within one year, the person replacing the Distribution Manager, Treatment Plant Manager or Director Responsible Charge Operator must have passed an examination of the appropriate grade and discipline. Direct responsible charge experience may be gained later, together with unrestricted certification as experience is gained.

11. The Secretary to the Commission may suspend or revoke a certificate after due notice and opportunity for a hearing. See Section R309-300-9 for further details.

12. An operator may have the opportunity to take any grade of examination higher than the rating of the system which he operates. If passed, the operator shall be issued a restricted certificate at that higher grade. This certificate can be used to demonstrate that the operator has successfully passed all knowledge requirements for that discipline and grade, but that experience is lacking. This restricted certificate will become unrestricted when the experience requirements are met with written verification for the appropriate discipline and grade, provided it is renewed at the required intervals.

13. The Commission will review on a periodic basis each system's compliance with these rules and will refer those systems in violation to the Director for appropriate action. Any requirement can be appealed as provided in R305-7.

14. An operator who is acting as the direct responsible charge operator for more than one drinking water system (regional operator) shall not be a grandparent certified operator.

15. The regional operator must have an unrestricted certificate equal to or higher than the grade and discipline of the rating applied to each system he is operating.

16. If the regional operator is operating any system(s) that have both disciplines involved in their rating, the operator must have unrestricted certificates in both disciplines and at the highest grade of the most complex system he is working with.

17. A regional operator shall be within a one hour travel time, under normal work and home conditions, of each drinking water system for which he is considered in direct responsible charge unless a longer travel time is approved by the Director based on availability of certified operators and the distance between community water systems in the area.

18. If the drinking water system has only one certified operator, with the exception of a drinking water system employing a regional operator, the operator must have a back up operator certified in the required discipline(s). The back up certified operator must be within one hour travel time of the drinking water system.

19. At no time will an uncertified operator be allowed to operate a drinking water system covered by these rules unless the operator is within the one year grace period specified in R309-300-5.10.

20. A certified operator or a licensed professional engineer shall sign the annual Utah Water Use Data Form distributed by the State Division of Water Rights attesting to the accuracy of the data reported on the form. Further the Certified Operator will list his certification number on the form.

R309-400-12. Reporting and Record Maintenance Issues.

Points may be assessed for failure to provide required reports to the Director by the reporting deadline. The points shall be assigned as the failure occurs and shall remain on record for a period of one year.

(1) Monthly Reports:

- (a) For each failure to report the monthly water treatment plant report, 100 points shall be assessed.

(2) Quarterly Reports:

- (a) For each failure to report the quarterly disinfection report, 50 points shall be assessed.

(3) Annual Reports:

- (a) For failure to provide the annual report, 2 points shall be assessed.
- (b) Community water systems that fail to send a certification to the Division stating how the consumer confidence report was distributed to its customers as required in R309-225-7(3), 10 points shall be assessed.
- (c) Community water systems that fail to mail a copy of the consumer confidence report to the Division as required in R309-225-7(3), 10 points shall be assessed.
- (d) Community and non-transient non community water systems that fail to mail or submit electronically the “Utah Water Use Data Form” to the Utah Division of Water Rights as required in R309-105-15 and R309-300-5, 50 points shall be assessed.

Agenda Item

6

Authorization to Proceed with Rule Adoption R309-105-12(1)

This packet contains the necessary changes to R309-105-12(1) to correct an outdated rule references.

Cost Estimates:

There should not be any additional cost to systems or the state with regard to the proposed rule changes as it references another State adopted rule.

Staff Recommendation:

Staff recommends that the Drinking Water Board authorizes staff to proceed with the filing for substantive changes to rule R309-105-12(1) with the Division of Administrative Rules for rule adoption.

R309-105-12. Cross Connection Control.

(1) The water supplier shall not allow a connection to his system which may jeopardize its quality and integrity. Cross connections are not allowed unless controlled by an approved and properly operating backflow prevention assembly. The requirements of Chapter 6 of the ~~[2009]~~2015 International Plumbing Code and its amendments as adopted by the 2016 Utah legislative session under Title 15A by the Department of Commerce ~~[under R156-56]~~, shall be met with respect to cross connection control and backflow prevention.

(2) Each water system shall have a functioning cross connection control program. The program shall consist of five designated elements documented on an annual basis. The elements are:

- (a) a legally adopted and functional local authority to enforce a cross connection control program (i.e., ordinance, bylaw or policy);
- (b) providing public education or awareness material or presentations;
- (c) an operator with adequate training in the area of cross connection control or backflow prevention;
- (d) written records of cross connection control activities, such as, backflow assembly inventory; and
- (e) test history and documentation of on-going enforcement (hazard assessments and enforcement actions) activities.

(3) Suppliers shall maintain, as proper documentation, an inventory of each pressure atmospheric vacuum breaker, double check valve, reduced pressure zone principle assembly, and high hazard air gap used by their customers, and a service record for each such assembly.

(4) Backflow prevention assemblies shall be in-line serviceable (repairable), in-line testable and have certification through third party certifying agencies to be used within a public drinking water system. Third party certification shall consist of any combination of two certifications, laboratory or field, performed by a recognized testing organization which has demonstrated competency to perform such tests.

(5) Backflow prevention assemblies shall be inspected and tested at least once a year, by an individual certified for such work as specified in R309-305. Suppliers shall maintain, as proper documentation, records of these inspections. This testing responsibility may be borne by the water system or the water system management may require that the customer having the backflow prevention assembly be responsible for having the device tested.

(6) Suppliers serving areas also served by a pressurized irrigation system shall prevent cross connections between the two. Requirements for pressurized irrigation systems are outlined in Section 19-4-112 of the Utah Code.

Agenda Item

7

PROPOSED SUBSTANTIVE CHANGES TO RULE R309-540

Rule R309-540, *Facility Design and Operation: Pump Stations*, was last amended on February 15, 2009. The Division of Drinking Water is requesting authorization to make substantive changes to the organization and content of the rule to make its requirements more accurate and easier to understand. Because of the substantial reorganization of the rule, a conventional marked-up version of the proposed changes would be difficult to follow. Therefore, the Division proposes repeal and re-enactment; the current rule would be repealed in its entirety, and an amended rule would be re-enacted in its place.

The proposed changes to R309-540 include the following:

- Some titles have been revised to more accurately reflect their content
- Previously un-numbered paragraphs have been numbered for ease of reference
- Unnecessary or inaccurate requirements have been deleted
- New requirements have been added where needed
- Most of the requirements of the current rule are also present in the amendment but they are organized differently
- The reorganization is intended to group like requirements together, which in addition to being more logical should also prove to be more useful
- General requirements that apply to all pumping facilities (pumps, pump stations, and hydropneumatic systems) are gathered together in one section of the amendment (R309-540-4, *General*)
- The requirements found in R309-540-5, *Pumping Facilities*, in the current rule have been distributed among three sections in the amendment:
 1. R309-540-5, *Pumps*
 2. R309-540-6, *Booster Pumps Serving the Distribution System*
 3. R309-540-7, *Pump Stations*
- The section entitled *Hydropneumatic Systems*, R309-540-6 in the current rule, retains much of its original organization in the amendment but unnecessary requirements have been deleted and some of the retained requirements have been reworded

Two versions of the R309-540 amendment are enclosed:

- **The Division of Administrative Rules (DAR) Version:** DAR maintains the official version of rules and oversees the rulemaking process. The official rulemaking document for R309-540 is in the format required by DAR. The DAR format has limited formatting, uses strikeouts for deleted words, and underlines added words. In this case, because the current rule is being repealed, the entire rule is struck through and the amendment is entirely underlined.
- **The Division of Drinking Water Version:** DDW provides a separate version of the rule to the public. The rule content of the DDW version is the same as the DAR version. However, the DDW version is formatted for easier reading and contains DDW's interpretations of the

rule (in the form of guidance paragraphs). The guidance paragraphs are not part of the official rule. In this case, the repealed rule is struck through and the amendment is shown without underling for ease of reading.

Staff Recommendation: Because the proposed changes are substantive, the staff recommends **that the Board authorize Division staff to begin the rulemaking process to repeal and re-enact R309-540 and to file the proposed rule for publication in the Utah State Bulletin on August 1, 2016.**

Key to Proposed Revisions to R309-540, *Facility Design and Operation: Pump Stations*.

Because of the substantial reorganization of the R309-540, a conventional marked-up version of the current rule showing the changes would be difficult to follow. Therefore, the Drinking Water Board packet includes copies of the current rule, to be repealed, shown struck through and the proposed amendment, to be re-enacted, with no changes shown. To aid in the Board's review, the differences between the current rule and the amendment are summarized below.

Unchanged Sections

The following two sections are unchanged and remain the same in the current rule and the amendment:

1. R309-540-2. Authority.
2. R309-540-3. Definitions.

Deleted Requirements

The following requirements included in the current rule have been deleted and are not included in the amendment:

1. Deleted the requirement that a pump station site protect against interruption of service by fire, flood, or other hazards
2. Deleted the requirement that pump stations be protected against entry by animals and unauthorized persons, and replaced it with the requirement that pump stations be protected against unauthorized entry
3. Deleted the requirement that pump station buildings be fire and weather resistant because it is difficult to determine how this requirement would be met
4. Deleted the requirement that interior floors of pump stations be sloped at least one percent
5. Deleted the requirement that drainage from pump glands be provided with an outlet to prevent discharge to the floor, and replaced it with a requirement that a means for handling the drainage be provided
6. Deleted the requirement that wet wells have two pumping compartments to allow the well to be taken out of service for inspection, maintenance, or repair
7. Deleted the requirement that pump stations have specific equipment, such as crane ways, hoist beams, eyebolts; openings in floors and roofs; and tool boards, for equipment maintenance, and replaced it with a general requirement that provisions be made to service or remove heavy or bulky equipment
8. Deleted the requirement concerning sanitary plumbing at pump stations and the discharge of wastes
9. Deleted the requirement that pumping units be provided with readily available spare parts and tools
10. Deleted the requirement that recording gauges be installed in "larger stations"

11. Deleted the requirement that community and non-transient non-community water systems provide unpressurized storage in addition to pressurized storage because it repeats the requirements of R309-510, *Minimum Sizing Requirements*
12. Deleted the requirement that minimum pressure be provided in the distribution system because it is already covered in another rule (R309-105-9, *Minimum Water Pressure*)
13. Deleted the requirement that pressure tanks meet state and local laws for manufacture and installation but retained the requirement that they comply with NSF 61
14. Deleted the formula for calculating the minimum volume of a pressure tank based on pump operating cycle, pump output capacity, percent of volume withdrawn during a given pressure drop, and the water seal volume
15. Deleted the requirement that the method of adjusting the air volume in an air-over-water pressure tank be acceptable to the Director
16. Deleted the requirement that an air intake be at least 10 feet above the ground and replaced it with a requirement that the air source be free of contamination
17. Deleted a separate standby power requirement for hydropneumatic systems because it is now in R309-540-4, *General*, which applies to all pumps

Added Requirements

The following requirements, not included in the current rule, were added to the amendment:

1. Added the requirement that pumps not serving the distribution system meet the “desired operating conditions”
2. Added clarification that foot valves are used in wet wells
3. Added a requirement that piping restraints be provided if necessary to protect piping from water surge or water hammer
4. Added the provision that in place of a standard pressure gauge an alternative means of measuring pressure may be installed on a pump station discharge line
5. Added the provision that in place of a compound gauge an alternative means of measuring pressure may be installed on the suction line
6. Added the clarification that standby power is only required at community water systems that do not have naturally flowing water sources and rely on pumps for water distribution
7. Added the requirement that hydropneumatic tanks be located above ground if possible (this used to be guidance in the DDW version of the rule)
8. Added the requirement that hydropneumatic tanks be sized to avoid excessive pump cycling

Changes

The following requirements, included in the current rule, were changed when transferred to the amendment:

1. The title of the rule is changed from *Pump Stations*, which is a specific type of pumping facility, to *Pumping Facilities*, which is a more general term
2. In R309-500-1, *Purpose*, the reference to “pumping facilities” is replaced with “pump stations” for the same reason that the title of the rule was changed

3. Reworded the requirement that space in pump stations be adequate for installing new pumps and servicing equipment
4. The term “suction wells” was replaced with “wet wells”
5. Reworded specific requirements for handrails and treads on steps in pump stations
6. Combined the heating and lighting requirements for pump stations
7. Replaced the requirement that forced ventilation be provided in pump stations for any area where an unsafe atmosphere or excessive heat may build up with the requirement that forced ventilation be provided where unsafe conditions may develop
8. Rewrote the requirement that pumps be capable of meeting peak day demand
9. Instead of requiring the pumping unit to meet peak day demand against the required distribution pressure without dangerous overloading, the rule now requires pump motors to be sized to meet desired operating conditions without dangerous overloading
10. Made minor changes to clarify pump priming requirements
11. Rewrote the requirement for a minimum of two pumping units for inline booster pumps
12. Reworded and clarified the prohibition against “home booster pumps” to prohibit “service connection booster pumps” used to meet minimum pressure requirements
13. Revised the language requiring isolation valves at pumping facilities but did not change requirements
14. Changed the requirement for a pressure gauge on each pump discharge line to the requirement for a pressure gauge on the pump station discharge line only
15. Made minor wording changes to the requirements for provisions to prevent surge pressures from activating controls at pumping facilities; the requirements remain unchanged however
16. Revised the language prohibiting community water systems from counting hydropneumatic tanks towards water storage requirements
17. Changed references from “diaphragm or air tanks” to “pressure tanks” in R309-540-8, *Hydropneumatic Systems*
18. Replaced the requirement that a pressure gauge be installed on the pressure tank inlet line with a requirement that operating pressures of a hydropneumatic tank be monitored by some means
19. The term “non-diaphragm” pressure tanks was replaced with the term “air-over-water” pressure tanks
20. Minor changes were made to words and terms concerning the water seal in air-over-pressure tanks but the requirements were not changed

R309-540. Facility Design and Operation: Pump Stations

- **DDW Version for Repeal and Re-enact**

~~[R309-540. Facility Design and Operation: Pump Stations.~~

~~R309-540-1. Purpose.~~

~~The purpose of this rule is to provide specific requirements for pump stations utilized to deliver drinking water to facilities of public water systems. It is intended to be applied in conjunction with rules R309-500 through R309-550. Collectively, these rules govern the design, construction, operation and maintenance of public drinking water system facilities. These rules are intended to assure that such facilities are reliably capable of supplying adequate quantities of water which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.~~

~~R309-540-2. Authority.~~

~~This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.~~

~~R309-540-3. Definitions.~~

~~Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.~~

~~R309-540-4. General.~~

~~Pumping stations shall be designed to maintain the sanitary quality of water and to provide ample quantities of water at sufficient pressure.~~

~~R309-540-5. Pumping Facilities.~~

~~(1) Location.~~

~~(a) The pumping station shall be designed such that:~~

~~(i) the proposed site will meet the requirements for sanitary protection of water quality, hydraulics of the system, and protection against interruption of service by fire, flood or any other hazard;~~

~~***Guidance: Subsurface pits or pump rooms and inaccessible installations should be avoided.***~~

~~(ii) the access to the pump station shall be six inches above the surrounding ground and the station located at an elevation which is a~~

~~minimum of three feet above the 100-year flood elevation, or three feet above the highest recorded flood elevation, which ever is higher, or protected to such elevations;~~

~~(iii) the station is readily accessible at all times unless permitted to be out of service for the period of inaccessibility;~~

~~(iv) surrounding ground is graded so as to lead surface drainage away from the station; and~~

~~(v) the station is protected to prevent vandalism and entrance by animals or unauthorized persons.~~

(2) Pumping Stations.

~~(a) Building structures for both raw and drinking water shall:~~

~~(i) have adequate space for the installation of additional pumping units if needed, and for the safe servicing of all equipment;~~

~~(ii) be of durable construction, fire and weather resistant, with outward-opening doors;~~

~~(iii) have an interior floor elevation at least six inches above the exterior finished grade;~~

~~(iv) have any underground facilities, especially wet wells, waterproofed;~~

~~(v) have all interior floors drained in such a manner that the quality of drinking water contained in any wet wells will not be endangered. All floors shall slope at least one percent (one foot every 100 feet) to a suitable drain; and~~

~~(vi) provide a suitable outlet for drainage from pump glands without discharging onto the floor.~~

~~(b) Suction wells shall:~~

~~(i) be watertight;~~

~~(ii) have floors sloped to permit removal of water and entrained solids;~~

~~(iii) be covered or otherwise protected against contamination; and~~

~~(iv) have two pumping compartments or other means to allow the suction well to be taken out of service for inspection, maintenance, or repair.~~

~~(c) Servicing equipment shall consist of:~~

~~(i) crane ways, hoist beams, eyebolts, or other adequate facilities for servicing or removal of pumps, motors or other heavy equipment;~~

~~(ii) openings in floors, roofs or wherever else needed for removal of heavy-~~

~~or bulky equipment; and~~

~~(iii) a convenient tool board, or other facilities as needed, for proper maintenance of the equipment.~~

~~(d) Stairways and ladders shall:~~

~~(i) be provided between all floors, and in pits or compartments which must be entered; and~~

~~(ii) have handrails on both sides, and treads of non-slip material. They shall have risers not exceeding nine inches and treads wide enough for safety.~~

~~**Guidance: Ramps are preferred in areas where there is frequent traffic or where supplies are transported by hand. Where ramps are not possible, stairs are preferred to ladders.**~~

~~(e) Heating provisions shall be adequate for:~~

~~(i) the comfort of the operator; and~~

~~(ii) the safe and efficient operation of the equipment.~~

~~**Guidance: In pump houses not occupied by personnel, only enough heat need be provided to prevent freezing of equipment or treatment process.**~~

~~(f) Ventilation shall:~~

~~(i) conform to existing local and/or state codes; and~~

~~(ii) forced ventilation of at least six changes of air per hour shall be provided for all rooms, compartments, pits and other enclosures below ground floor, and any area where unsafe atmosphere may develop or where excessive heat may be built up.~~

~~**Guidance: In areas where excess moisture could cause hazards to safety or damage to equipment, means for dehumidification should be provided.**~~

~~(g) Lighting.~~

~~Pump stations shall be adequately lighted throughout. All electrical work shall conform to the requirements of the relevant state and/or local building codes.~~

~~(h) Sanitary and other conveniences.~~

~~Plumbing shall be so installed as to prevent contamination of a public water supply. Wastes shall be discharged in accordance with the plumbing code, R317-4, or R317-1-3.~~

~~(3) Pumps.~~

~~(a) Capacity.~~

~~Capacity shall be provided such that the pump or pumps shall be capable of providing the peak day demand of the system or the specific portion of the system serviced.~~

~~The pumping units shall:~~

- ~~(i) have ample capacity to supply the peak day demand against the required distribution system pressure without dangerous overloading;~~
- ~~(ii) be driven by prime movers able to meet the maximum horsepower condition of the pumps without use of service factors;~~
- ~~(iii) be provided readily available spare parts and tools; and~~
- ~~(iv) be served by control equipment that has proper heater and overload protection for air temperature encountered.~~

~~(b) Suction Lift.~~

~~Suction lift, where possible, shall be avoided. If suction lift is necessary, the required lift shall be within the pump manufacturer's recommended limits and provision shall be made for priming the pumps.~~

~~(c) Priming.~~

~~Prime water shall not be of lesser sanitary quality than that of the water being pumped. Means shall be provided to prevent back siphonage. When an air-operated ejector is used, the screened intake shall draw clean air from a point at least 10 feet above the ground or other source.~~

~~(4) Booster Pumps.~~

~~(a) Booster pumps shall be located or controlled so that:~~

- ~~(i) they will not produce negative pressure in their suction lines;~~

- ~~(ii) automatic cutoff pressure shall be at least 10 psi in the suction line;~~
- ~~(iii) automatic or remote control devices shall have a range between the start and cutoff pressure which will prevent excessive cycling; and~~
- ~~(iv) a bypass is available.~~

~~(b) Inline booster pumps (pumps withdrawing water directly from distribution lines without the benefit of storage and feeding such water directly into other distribution lines rather than storage), in addition to the other requirements of this section, shall have at least two pumping units (such that with any one pump out of service, the remaining pump or pumps shall be capable of providing the peak day demand of the specific portion of the system serviced), shall be accessible for servicing and repair and located or controlled so that the intake pressure shall be at least 20 psi when the pump or pumps are in normal operation.~~

~~(c) Individual home booster pumps shall not be allowed for any individual service from the public water supply main.~~

Guidance: Refer to Guidance found in R309-550-11(3)

~~(5) Automatic and remote controlled stations.~~

~~All remote controlled stations shall be electrically operated and controlled and shall have signaling apparatus of proven performance. Installation of electrical equipment shall conform with the applicable state and local electrical codes and the National Electrical Code.~~

Guidance: All automatic stations should be provided with automatic signaling apparatus which will report when the station is out of service.

~~(6) Appurtenances.~~

~~(a) Valves.~~

~~Valves shall be used to permit satisfactory operation, maintenance, and repair of the equipment. If foot valves are necessary, they shall have a net valve area of at least 2 1/2 times the area of the suction pipe and they shall have a positive-acting check valve on the discharge side between the pump and the shut-off valve.~~

~~(b) Piping.~~

~~Piping within and near pumping stations shall:~~

- ~~(i) be designed so that the friction losses will be minimized;~~
- ~~(ii) not be subject to contamination;~~

- ~~(iii) have watertight joints;~~
- ~~(iv) be protected against surge or water hammer; and~~
- ~~(v) be such that each pump has an individual suction line or that the lines shall be so manifolded that they will insure similar hydraulic and operating conditions.~~

~~(c) Gauges and Meters.~~

~~Each pump shall:~~

- ~~(i) have a standard pressure gauge on its discharge line;~~
- ~~(ii) Have a compound gauge (capable of indicating negative pressure or vacuum as well as positive pressure) on its suction line; and~~
- ~~(iii) have recording gauges in the larger stations.~~

~~**Guidance: Larger pumping stations should have a means for measuring the discharge. The station should have indicating, totalizing, and recording metering of the total water pumped.**~~

~~(d) Water Seal.~~

~~Where pumps utilize water seals, the seals shall:~~

- ~~(i) not be supplied with water of a lesser sanitary quality than that of the water being pumped; and~~
- ~~(ii) when pumps are sealed with potable water and are pumping water of lesser sanitary quality, the seal shall be provided with a break tank open to atmospheric pressure, and have an air gap of at least six inches or two pipe diameters, whichever is greater, between the feeder line and the spill line of the tank.~~

~~(e) Controls.~~

~~Controls shall be designed in such a manner that they will operate their prime-movers, and accessories, at the rated capacity without dangerous overload. Where two or more pumps are installed, provision shall be made for alternation. Provision shall be made to prevent energizing the motor in the event of a backspin cycle. Electrical controls shall be protected against flooding. Equipment shall be provided or other arrangements made to prevent surge pressures from activating controls which switch on pumps or activate other equipment outside the normal design cycle of operation.~~

~~(f) Standby Power.~~

~~Standby power, to ensure continuous service when the primary power has been~~

~~interrupted, shall be provided from at least two independent sources or a standby or an auxiliary source shall be provided. If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination.~~

~~(g) Water Pre-Lubrication.~~

~~When automatic pre-lubrication of pump bearings is necessary and an auxiliary direct drive power supply is provided, the pre-lubrication line shall be provided with a valved bypass around the automatic control so that the bearings can, if necessary, be lubricated manually before the pump is started or the pre-lubrication controls shall be wired to the auxiliary power supply.~~

~~R309-540-6. Hydropneumatic Systems.~~

~~(1) General.~~

~~Hydropneumatic systems shall comply with all appropriate sections of R309-540-5 except as otherwise indicated herein.~~

~~Unpressurized ground level or elevated storage, designed in accordance with R309-545, shall be provided for community type public water systems or non-transient non-community systems where a demand in excess of the capacity of the source(s) is required, in addition to the diaphragm or air tanks. Diaphragm or air pressure tank storage shall not be considered for fire protection purposes or effective system storage for community type systems.~~

~~(2) Location.~~

~~If diaphragm or air tanks and appurtenances are located below ground, adequate provisions for drainage, ventilation, maintenance, and flood protection shall be made and the electrical controls shall be located above grade so as to be protected from flooding as required by R309-540-5(6)(e). Any discharge piping from combination air release/vacuum relief valves(air/vac's) or pressure relief valves located in below ground chambers shall comply with all the pertinent requirements of R309-550-6(6).~~

~~*Guidance: It is preferred that pressure tanks and appurtenances be located above ground and be protected.*~~

~~(3) Operating Pressures.~~

~~The system shall be designed to provide minimum pressures in R309-105-9 at all points in the distribution system. A pressure gauge shall be installed on the pressure tank inlet line.~~

(4) Piping.

In addition to the bypass required by R309-540-5(4)(iv) on the pumps, the diaphragm or air tanks shall have sufficient bypass piping to permit operation of the hydropneumatic system while one or more of the tanks are being repaired, replaced or painted.

(5) Pumps.

At least two pumping units shall be provided except for those type systems not requiring unpressurized storage in R309-540-6(1); they may use the pump within their groundwater source to pressurize the diaphragm or air tanks. With any pump out of service the remaining pump or pumps shall be capable of providing the peak instantaneous demand of the system as described in R309-510-9(2), while recharging the pressure tank at 115 percent of the upper pressure setting. Pump cycling shall not exceed 15 starts per hour, with a maximum of ten starts per hour preferred.

(6) Pressure Tanks.

(a) Pressure tanks shall meet the requirement of state and local laws and regulations for the manufacture and installation of unfired pressure vessels. Interior coatings or diaphragms used in pressure tanks that will come into contact with the drinking water shall comply with ANSI/NSF Standard 61. Non-diaphragm pressure tanks shall have an access manhole, a drain, control equipment consisting of pressure gauge, water sight glass, automatic or manual air blow off, means for adding air, and pressure operated start stop controls for the pumps.

Guidance: Sizing of hydropneumatic storage tanks should consider the need for disinfectant contact time.

Guidance: For larger pressure tanks, the access manhole should be a minimum 24 inches in diameter.

(b) The minimum volume of the pressure tank or combination of tanks shall be greater than or equal to the sum of S and the value of CX divided by 4W.

Guidance: Volume (min) $\geq S + CX/4W$

where the following values are used in the equation above:

C = minutes per operating cycle, four minutes to meet the requirements of R309-540-6(5) above or preferably six minutes, and is equal to pump ON time plus pump OFF time.

X = output capacity rating of the pump(s) at the high pressure condition in the tank(s), in gpm.

W = percent of volume withdrawn during a given drop in tank pressure: specifically, between P_h and P_l . $W = 100(P_h - P_l)/P_h$ where P_h = high pressure in

tank in psia (high absolute pressure) and P_1 = low pressure in tank in psia (low absolute pressure). Values of W range typically from 0.26 to 0.31 for pressure differentials of 15 to 30 psi and high system pressures of 45 to 85 psi at elevations of approximately 5,000 feet.

S = water seal volume in gallons, the volume of inactive water remaining in tank at low pressure condition.

Guidance: As a rule-of-thumb the minimum volume of the hydropneumatic tank should be at least five times the capacity of the pump(s), rated in gpm. For example, a 200 gpm pump or combination of pumps should have a 1,000 gallon pressure tank.

(7) Air Volume.

The method of adjusting the air volume shall be acceptable to the Director. Air delivered by compressors to the pressure tank shall be adequately filtered, oil free, and be of adequate volume. Any intake shall be screened and draw clean air from a point at least 10 feet above the ground or other source of possible contamination, unless the air is filtered by an apparatus approved by the Director. Discharge piping from air relief valves shall be designed and installed with screens to eliminate the possibility of contamination from this source.

(8) Water Seal.

For air pressure tanks without an internal diaphragm the volume of water remaining in an air pressure tank at the lower pressure setting shall be sufficient to provide an adequate water seal at the outlet to prevent the leakage of air.

Guidance: To prevent the formation of a vortex, a covering baffle may be installed over a vertical bottom outlet large enough to limit the peripheral velocity of approach to the baffle to 0.5 ft/sec or less. At low absolute pressure the depth of water over the top of the baffle should be about one outlet pipe velocity head or greater. For either horizontal or vertical outlets, the pipe outlet itself should be large enough to limit the maximum axial velocity in the pipe to 4.0 ft/sec or less. The use of anti-swirl vanes is always desirable.

The following water seal depths shall be considered as minimum requirements.

- (i) Horizontal outlets shall maintain sufficient depth, as measured from the centerline of the horizontal outlet pipe, such that the depth is greater than or equal to the sum of d and twice the value v^2 divided by $2G$.
- (ii) Vertical outlets, if unbaffled, the depth shall be the same as in (a) except measured from the pipe outlet; if baffled, the depth shall be greater than or equal to the value v^2 divided by $2G$.

where the following values are used in the equations above:

v = the axial velocity in the pipe outlet for the peak instantaneous demand flow

~~rate of the system.~~

~~d = the diameter of the outlet pipe in ft.~~

~~G = the gravitational constant of 32.2 ft/sec/sec.~~

~~(9) Standby Power Supply.~~

~~Where a hydropneumatic system is intended to serve a public water system, categorized as a community water system as defined in R309-110, a standby source of power shall be provided.]~~

R309-540. Facility Design and Operation: Pumping Facilities.

R309-540-1. Purpose.

The purpose of this rule is to provide specific requirements for the design and operation of drinking water pumping facilities. It is intended to be applied in conjunction with rules R309-500 through R309-550. Collectively, these rules govern the design, construction, operation and maintenance of public drinking water system facilities. These rules are intended to assure that such facilities are reliably capable of supplying adequate quantities of water which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.

R309-540-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.

R309-540-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified in this rule.

R309-540-4. General.

The following requirements apply to all pumping facilities including pumps, pump stations, and hydropneumatic systems. Pumping facilities shall be adequately sized and be designed to maintain the quality of the water and to meet minimum pressure requirements.

(1) Location and Accessibility.

(a) A pumping facility shall be designed and operated to meet the following requirements:

- (i) The facility may not be located at a site that negatively affects drinking water quality.
- (ii) The site shall be compatible with the hydraulics of the water system.
- (iii) The site shall be graded to direct surface runoff away from the facility.
- (iv) The facility shall be accessible at all times unless the facility can be taken out of service during periods of inaccessibility.
- (v) The facility shall be protected from vandalism and unauthorized entry.

(2) Appurtenances.

(a) Valves.

Valves for pumping facilities shall be designed and operated to meet the following requirements.

- (i) Isolation valves shall be included for operation, maintenance, and repair of the pumping equipment.
- (ii) Foot valves in wet wells shall have a net valve area of at least 2 1/2 times the area of the suction pipe and there shall be a positive-acting check valve on the discharge side between the pump and the shut-off valve.
- (iii) The open end of a vent on an air relief valve shall be downturned and covered with a #14 mesh non-corrodible screen. The end of a vent shall terminate in the following location:
 - (A) At least six inches above the floor, if the valve is located in a building
 - (B) At least 12 inches above the top of the water line, if the valve is located in a below grade chamber that is not subject to flooding
 - (C) At least 12 inches above grade, if the valve is located in a below grade chamber that is subject to flooding

(b) Piping.

Piping for pumping facilities shall be designed to meet the following requirements:

- (i) Friction losses shall be minimized.
- (ii) Piping shall not be subject to contamination.
- (iii) Watertight joints shall be provided.
- (iv) Protection against surge or water hammer shall be provided along with suitable restraints if necessary.

(c) Controls.

Controls for pumping facilities shall be designed and operated to meet the following requirements:

- (i) The pump and accessories shall operate at the rated capacity.
- (ii) Where two or more pumps are installed, provisions shall be made for alternation of the pumps.
- (iii) Provisions shall be made to prevent energizing the pump motor in the event of a backspin cycle.

- (iv) Electrical controls shall be protected against flooding.
- (v) Provisions shall be made to prevent surge pressures from activating controls that switch on pumps or activate other equipment outside the normal design cycle of operation.
- (vi) Pump control equipment shall have proper overload protection for the air temperature encountered.

(d) Standby Power.

A community water system that relies solely on a pump to supply water to the distribution system shall provide a redundant power supply. A redundant power supply may include a transfer switch for auxiliary power such as a generator or a power supply service with coverage from two independent substations.

(e) Water Pre-Lubrication.

If automatic pre-lubrication of pump bearings is needed and an auxiliary direct drive power supply is provided, the pre-lubrication line shall be provided with a valved bypass around the automatic control so that the bearings can, if necessary, be lubricated manually before the pump is started or the pre-lubrication controls shall be wired to the auxiliary power supply.

(f) Gauges.

Each pump station shall be designed to include the following gauges:

- (i) The discharge line shall have a standard pressure gauge or an alternative means of measuring pressure on the discharge line.
- (ii) The suction line shall have a compound gauge (capable of indicating negative pressure or vacuum as well as positive pressure) or an alternative means of measuring pressure.

Guidance: It is recommended that larger pumping stations have indicating, totalizing, and recording metering of the total water pumped and recording pressure gauges.

R309-540-5. Pumps.

(a) Capacity.

Pumping facility shall be sized to meet the peak day demand of the specific portion of the distribution system served, or it shall meet the operating conditions if not serving the distribution system.

Guidance: a second pump is recommended if the pump delivers a sole source of water.

(b) Pump Motor.

Pump motors shall meet the following requirements:

(i) The pump motor shall be sized to meet the operating conditions without dangerous overloading.

(ii) The pump shall be driven by prime movers able to meet the maximum horsepower condition of the pumps without use of service factors.

(c) Suction Lift.

Suction lift, where possible, should be avoided. If suction lift is necessary, it shall be within the pump manufacturer's recommended limits and provisions shall be made for priming the pumps.

(d) Priming.

Where pumps require priming, the following requirements shall be met:

(i) Priming water shall not be of lesser sanitary quality than that of the water being pumped.

(ii) A means shall be provided to prevent back siphonage.

(iii) When an air-operated ejector is used for vacuum priming, the screened intake shall draw clean air from a point at least 10 feet above the ground or other source of possible contamination.

(e) Water Seal.

Where pumps use water seals, the seals shall meet the following requirements:

(i) They may not be supplied with water of a lesser sanitary quality than that of the water being pumped.

(ii) When pumps are sealed with potable water and are pumping water of lesser sanitary quality, the water for the seal shall be provided with a break tank open to atmospheric pressure, and have an air gap of at least six inches or two pipe diameters, whichever is greater, between the feeder line and the spill line of the tank.

R309-540-6. Booster Pumps Serving the Distribution System.

(a) Booster pumps shall be designed and operated to meet the following

requirements:

- (i) Negative pressure may not be produced in suction lines.
- (ii) The automatic cutoff pressure shall be at least 10 psi in the suction line.
- (iii) Automatic or remote control devices shall have a range between the start and cutoff pressure that will prevent excessive cycling.
- (iv) A bypass shall be available.

(b) Inline booster pumps (pumps withdrawing water directly from distribution lines without the benefit of storage and feeding such water directly into other distribution lines rather than storage) shall be designed and operated to meet the following requirements:

- (i) At least two pumping units shall be provided with each pump capable of meeting the peak day demand of the specific portion of the system served.
- (ii) The pumps shall be accessible for servicing and repair.
- (iii) The intake pressure shall be at least 20 psi when the pump or pumps are in normal operation.

(c) A public water system may not rely on individual service connection booster pumps to meet minimum pressure requirements.

Guidance: Refer to Guidance found in R309-550-11(3)

R309-540-7. Pump Stations.

(a) If a building structure is provided for pumping facilities it shall be designed to meet the following requirements:

- (i) Adequate space shall be provided for the safe servicing of all equipment and, if needed, the installation of additional pumps.
- (ii) The building shall be durable.
- (iii) Access to the pump station shall be six inches above the surrounding ground and the station located at an elevation which is a minimum of three feet above the 100-year flood elevation, or three feet above the highest recorded flood elevation, whichever is higher, or protected to such elevations.
- (iv) Underground facilities shall be waterproof.
- (v) Interior floors shall be drained in such a manner that the quality of drinking water contained in a wet well will not be endangered.
- (vi) A means shall be provided for handling drainage from pump glands.

- (b) Wet wells shall be designed to meet the following requirements:
- (i) Construction shall be watertight.
 - (ii) Floors shall be sloped to permit removal of water and sediment.
 - (iii) Openings shall be covered and protected against contamination.
- (c) Provisions shall be made for servicing or removal of heavy or bulky equipment.

Guidance: for large facilities, provisions for servicing or removal of heavy or bulky equipment may include crane-ways, hoist beams, eye-bolts, openings in floors or roofs, etc.

- (d) Stairways and ladders shall be designed to meet the following requirements:
- (i) Safe access shall be provided between all floors and in pits or compartments that must be entered.
 - (ii) Added features shall provide for the safety of the operator, for example, by providing handrails on stairways and non-slip treads on steps.
- Guidance: Ramps are preferred in areas where there is frequent traffic or where supplies are transported by hand. Where ramps are not possible, stairs are preferred to ladders.***

- (e) Adequate heating and lighting shall be provided for the safety and comfort of the operator and the safe and efficient operation of the equipment.

Guidance: In pump houses not occupied by personnel, only enough heat need be provided to prevent freezing of equipment or treatment process.

- (f) Ventilation shall meet the following requirements:
- (i) Forced ventilation of at least six changes of air per hour shall be provided for rooms, compartments, pits and other enclosures below ground floor and for any area where unsafe conditions may develop.
 - (ii) Existing local and state codes shall be followed.
- Guidance: In areas where excess moisture could cause hazards to safety or damage to equipment, means for dehumidification should be provided.***

- (g) Automatic and remote-controlled stations shall meet the following requirements:

- (i) Remote-controlled stations shall have signaling apparatus of proven performance.

(ii) Installation of electrical equipment shall conform with the applicable state and local electrical codes and the National Electrical Code.

Guidance: An automatic station should be provided with an automatic signaling apparatus which will report when the station is out of service.

R309-540-8. Hydropneumatic Systems.

(1) General.

(a) Pressure tanks shall comply with ANSI/NSF Standard 61.

(b) Community water systems shall not use hydropneumatic tanks to meet the water storage sizing requirements in R309-510-8.

Guidance: This section applies to three common types of hydropneumatic tanks: air-over-water pressure tanks, diaphragm pressure tanks, and bladder pressure tanks.

Guidance: Pressure tanks dedicated for fire suppression service are not considered to be hydropneumatic tanks serving drinking water systems

(2) Location.

(a) A hydropneumatic pressure tank shall be located above ground if possible.

(b) If pressure tanks and appurtenances are located below ground, adequate provisions for drainage, ventilation, access, maintenance, and flood protection shall be provided, and the electrical controls shall be located above grade so as to be protected from flooding.

(3) Operating Pressures.

A means of monitoring the operating pressures of a hydropneumatic tank shall be provided.

(4) Bypass Piping.

The hydropneumatic system design shall include bypass piping and isolation valves to allow one or more of the pressure tanks to be serviced without affecting the availability of the remaining units.

(5) Redundancy.

(a) When used to maintain minimum pressures within the distribution system, a community water system shall have a means of providing redundancy to allow the tanks to be taken off line or serviced.

(b) At least two units shall be provided for community water systems if the hydropneumatic system is the only means to maintain minimum pressures in the distribution system.

(6) Sizing.

The minimum volume of a hydropneumatic tank shall be sized to avoid excessive pump cycling.

Guidance: The number of allowable starts varies with the design speed of the motor and the motor size. Follow the manufacturer's recommendations to avoid excessive pump cycling.

Guidance: As a rule-of-thumb the minimum volume of the hydropneumatic tank should be at least five times the capacity of the pump(s), rated in gpm. For example, a 200 gpm pump or combination of pumps should have a 1,000 gallon pressure tank.

(7) Air-Over-Water Pressure Tanks.

(a) General.

Large air-over-water pressure tanks shall have an access manhole, a drain, a pressure gauge, a water sight glass, an automatic or manual air blow-off, a means for adding air, and pressure operated start-stop controls for the pumps.

(b) Air Supply for Pressure Tanks.

(i) Air delivered by a compressor to the pressure tank shall be adequately filtered, oil free, and be of adequate flow rate.

(ii) An air intake shall be screened and draw clean air from a point above the ground and free of possible contamination.

(iii) Discharge piping from air relief valves shall be screened and designed to eliminate the possibility of contamination.

(c) Water Seal.

(i) For air pressure tanks without an internal diaphragm the volume of water remaining in an air pressure tank at the lower pressure setting shall be sufficient to provide an adequate water seal at the outlet to prevent the leakage of air.

Guidance: To prevent the formation of a vortex, a covering baffle may be installed over a vertical bottom outlet large enough to limit the peripheral velocity of approach to the baffle to 0.5 ft/sec or less. At low absolute pressure the depth of water over the top of the baffle should be about one outlet pipe velocity head or greater.

(d) Water Seal Depth.

The minimum water seal depths shall be as follows.

(i) Horizontal outlets shall maintain sufficient depth, as measured from the centerline of the horizontal outlet pipe, such that the depth is greater than or equal to the sum of [d] and [twice the value v squared divided by 2g].
[Depth $\geq d + (2v^2/2g)$]

(ii) For vertical outlets, if unbaffled, the depth shall be the same as in (i) except measured from the pipe outlet; if baffled, the depth shall be greater than or equal to the value v squared divided by 2g. [Depth $\geq (v^2/2g)$]

Where the following values are used in the equations above:

v = the axial velocity in the pipe outlet for the peak instantaneous demand flow rate of the system.

d = the diameter of the outlet pipe in feet

g = the gravitational constant of 32.2 feet/sec/sec.

Guidance: For either horizontal or vertical outlets, the pipe outlet itself should be large enough to limit the maximum axial velocity in the pipe to 4.0 ft/sec or less. The use of anti-swirl vanes is always desirable.

KEY: drinking water, pumps, hydropneumatic systems, individual home booster pumps

Date of Enactment or Last Substantive Amendment: ~~February 15, 2009~~

Notice of Continuation: March 13, 2015

Authorizing, Implemented, or Interpreted Law: 19-4-104

R309-540. Facility Design and Operation: Pump Stations

- **DAR Version for Repeal and Re-enact**

R309. Environmental Quality, Drinking Water.

[R309-540. Facility Design and Operation: Pump Stations.]

R309-540-1. Purpose.

~~_____ The purpose of this rule is to provide specific requirements for pump stations utilized to deliver drinking water to facilities of public water systems. It is intended to be applied in conjunction with rules R309-500 through R309-550. Collectively, these rules govern the design, construction, operation and maintenance of public drinking water system facilities. These rules are intended to assure that such facilities are reliably capable of supplying adequate quantities of water which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.~~

R309-540-2. Authority.

~~_____ This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.~~

R309-540-3. Definitions.

~~_____ Definitions for certain terms used in this rule are given in R309-110 but may be further clarified herein.~~

R309-540-4. General.

~~_____ Pumping stations shall be designed to maintain the sanitary quality of water and to provide ample quantities of water at sufficient pressure.~~

R309-540-5. Pumping Facilities.

~~_____ (1) Location.~~

~~_____ (a) The pumping station shall be designed such that:~~

~~_____ (i) the proposed site will meet the requirements for sanitary protection of water quality, hydraulics of the system, and protection against interruption of service by fire, flood or any other hazard;~~

~~_____ (ii) the access to the pump station shall be six inches above the surrounding ground and the station located at an elevation which is a minimum of three feet above the 100-year flood elevation, or three feet above the highest recorded flood elevation, which ever is higher, or protected to such elevations;~~

~~_____ (iii) the station is readily accessible at all times unless permitted to be out of service for the period of inaccessibility;~~

~~_____ (iv) surrounding ground is graded so as to lead surface drainage away from the station; and~~

~~_____ (v) the station is protected to prevent vandalism and entrance by animals or unauthorized persons.~~

~~_____ (2) Pumping Stations.~~

~~_____ (a) Building structures for both raw and drinking water shall:~~

~~_____ (i) have adequate space for the installation of additional pumping units if needed, and for the safe servicing of all equipment;~~

~~_____ (ii) be of durable construction, fire and weather resistant, with outward-opening doors;~~

~~_____ (iii) have an interior floor elevation at least six inches above the exterior finished grade;~~

~~_____ (iv) have any underground facilities, especially wet wells,~~

waterproofed;

~~(v) have all interior floors drained in such a manner that the quality of drinking water contained in any wet wells will not be endangered. All floors shall slope at least one percent (one foot every 100 feet) to a suitable drain; and~~

~~(vi) provide a suitable outlet for drainage from pump glands without discharging onto the floor.~~

~~(b) Suction wells shall:~~

~~(i) be watertight;~~

~~(ii) have floors sloped to permit removal of water and entrained solids;~~

~~(iii) be covered or otherwise protected against contamination; and~~

~~(iv) have two pumping compartments or other means to allow the suction well to be taken out of service for inspection, maintenance, or repair.~~

~~(c) Servicing equipment shall consist of:~~

~~(i) crane-ways, hoist beams, eyebolts, or other adequate facilities for servicing or removal of pumps, motors or other heavy equipment;~~

~~(ii) openings in floors, roofs or wherever else needed for removal of heavy or bulky equipment; and~~

~~(iii) a convenient tool board, or other facilities as needed, for proper maintenance of the equipment.~~

~~(d) Stairways and ladders shall:~~

~~(i) be provided between all floors, and in pits or compartments which must be entered; and~~

~~(ii) have handrails on both sides, and treads of non-slip material. They shall have risers not exceeding nine inches and treads wide enough for safety.~~

~~(e) Heating provisions shall be adequate for:~~

~~(i) the comfort of the operator; and~~

~~(ii) the safe and efficient operation of the equipment.~~

~~(f) Ventilation shall:~~

~~(i) conform to existing local and/or state codes; and~~

~~(ii) forced ventilation of at least six changes of air per hour shall be provided for all rooms, compartments, pits and other enclosures below ground floor, and any area where unsafe atmosphere may develop or where excessive heat may be built up.~~

~~(g) Lighting.~~

~~Pump stations shall be adequately lighted throughout. All electrical work shall conform to the requirements of the relevant state and/or local building codes.~~

~~(h) Sanitary and other conveniences.~~

~~Plumbing shall be so installed as to prevent contamination of a public water supply. Wastes shall be discharged in accordance with the plumbing code, R317-4, or R317-1-3.~~

~~(3) Pumps.~~

~~(a) Capacity.~~

~~Capacity shall be provided such that the pump or pumps shall be capable of providing the peak day demand of the system or the specific portion of the system serviced.~~

~~The pumping units shall:~~

~~(i) have ample capacity to supply the peak day demand against~~

~~the required distribution system pressure without dangerous overloading;~~

~~(ii) be driven by prime movers able to meet the maximum horsepower condition of the pumps without use of service factors;~~

~~(iii) be provided readily available spare parts and tools; and~~

~~(iv) be served by control equipment that has proper heater and overload protection for air temperature encountered.~~

~~(b) Suction Lift.~~

~~Suction lift, where possible, shall be avoided. If suction lift is necessary, the required lift shall be within the pump manufacturer's recommended limits and provision shall be made for priming the pumps.~~

~~(c) Priming.~~

~~Prime water shall not be of lesser sanitary quality than that of the water being pumped. Means shall be provided to prevent back siphonage. When an air-operated ejector is used, the screened intake shall draw clean air from a point at least 10 feet above the ground or other source.~~

~~(4) Booster Pumps.~~

~~(a) Booster pumps shall be located or controlled so that:~~

~~(i) they will not produce negative pressure in their suction lines;~~

~~(ii) automatic cutoff pressure shall be at least 10 psi in the suction line;~~

~~(iii) automatic or remote control devices shall have a range between the start and cutoff pressure which will prevent excessive cycling; and~~

~~(iv) a bypass is available.~~

~~(b) Inline booster pumps (pumps withdrawing water directly from distribution lines without the benefit of storage and feeding such water directly into other distribution lines rather than storage), in addition to the other requirements of this section, shall have at least two pumping units (such that with any one pump out of service, the remaining pump or pumps shall be capable of providing the peak day demand of the specific portion of the system serviced), shall be accessible for servicing and repair and located or controlled so that the intake pressure shall be at least 20 psi when the pump or pumps are in normal operation.~~

~~(c) Individual home booster pumps shall not be allowed for any individual service from the public water supply main.~~

~~(5) Automatic and remote controlled stations.~~

~~All remote controlled stations shall be electrically operated and controlled and shall have signaling apparatus of proven performance. Installation of electrical equipment shall conform with the applicable state and local electrical codes and the National Electrical Code.~~

~~(6) Appurtenances.~~

~~(a) Valves.~~

~~Valves shall be used to permit satisfactory operation, maintenance, and repair of the equipment. If foot valves are necessary, they shall have a net valve area of at least 2 1/2 times the area of the suction pipe and they shall have a positive-acting check valve on the discharge side between the pump and the shut-off valve.~~

~~(b) Piping.~~

~~— Piping within and near pumping stations shall:~~

~~— (i) be designed so that the friction losses will be minimized;~~

~~— (ii) not be subject to contamination;~~

~~— (iii) have watertight joints;~~

~~— (iv) be protected against surge or water hammer; and~~

~~— (v) be such that each pump has an individual suction line or that the lines shall be so manifolded that they will insure similar hydraulic and operating conditions.~~

~~— (c) Gauges and Meters.~~

~~— Each pump shall:~~

~~— (i) have a standard pressure gauge on its discharge line;~~

~~— (ii) have a compound gauge (capable of indicating negative pressure or vacuum as well as positive pressure) on its suction line; and~~

~~— (iii) have recording gauges in the larger stations.~~

~~— (d) Water Seal.~~

~~— Where pumps utilize water seals, the seals shall:~~

~~— (i) not be supplied with water of a lesser sanitary quality than that of the water being pumped; and~~

~~— (ii) when pumps are sealed with potable water and are pumping water of lesser sanitary quality, the seal shall be provided with a break tank open to atmospheric pressure, and have an air gap of at least six inches or two pipe diameters, whichever is greater, between the feeder line and the spill line of the tank.~~

~~— (e) Controls.~~

~~— Controls shall be designed in such a manner that they will operate their prime movers, and accessories, at the rated capacity without dangerous overload. Where two or more pumps are installed, provision shall be made for alternation. Provision shall be made to prevent energizing the motor in the event of a backspin cycle. Electrical controls shall be protected against flooding. Equipment shall be provided or other arrangements made to prevent surge pressures from activating controls which switch on pumps or activate other equipment outside the normal design cycle of operation.~~

~~— (f) Standby Power.~~

~~— Standby power, to ensure continuous service when the primary power has been interrupted, shall be provided from at least two independent sources or a standby or an auxiliary source shall be provided. If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination.~~

~~— (g) Water Pre-Lubrication.~~

~~— When automatic pre-lubrication of pump bearings is necessary and an auxiliary direct drive power supply is provided, the pre-lubrication line shall be provided with a valved bypass around the automatic control so that the bearings can, if necessary, be lubricated manually before the pump is started or the pre-lubrication controls shall be wired to the auxiliary power supply.~~

~~R309-540-6. Hydropneumatic Systems.~~

~~— (1) General.~~

~~— Hydropneumatic systems shall comply with all appropriate sections of R309-540-5 except as otherwise indicated herein.~~

~~— Unpressurized ground level or elevated storage, designed in~~

accordance with R309-545, shall be provided for community type public water systems or non-transient non-community systems where a demand in excess of the capacity of the source(s) is required, in addition to the diaphragm or air tanks. Diaphragm or air pressure tank storage shall not be considered for fire protection purposes or effective system storage for community type systems.

~~(2) Location.~~

~~If diaphragm or air tanks and appurtenances are located below ground, adequate provisions for drainage, ventilation, maintenance, and flood protection shall be made and the electrical controls shall be located above grade so as to be protected from flooding as required by R309-540-5(6)(e). Any discharge piping from combination air release/vacuum relief valves(air/vac's) or pressure relief valves located in below ground chambers shall comply with all the pertinent requirements of R309-550-6(6).~~

~~(3) Operating Pressures.~~

~~The system shall be designed to provide minimum pressures in R309-105-9 at all points in the distribution system. A pressure gauge shall be installed on the pressure tank inlet line.~~

~~(4) Piping.~~

~~In addition to the bypass required by R309-540-5(4)(iv) on the pumps, the diaphragm or air tanks shall have sufficient bypass piping to permit operation of the hydropneumatic system while one or more of the tanks are being repaired, replaced or painted.~~

~~(5) Pumps.~~

~~At least two pumping units shall be provided except for those type systems not requiring unpressurized storage in R309-540-6(1); they may use the pump within their groundwater source to pressurize the diaphragm or air tanks. With any pump out of service the remaining pump or pumps shall be capable of providing the peak instantaneous demand of the system as described in R309-510-9(2), while recharging the pressure tank at 115 percent of the upper pressure setting. Pump cycling shall not exceed 15 starts per hour, with a maximum of ten starts per hour preferred.~~

~~(6) Pressure Tanks.~~

~~(a) Pressure tanks shall meet the requirement of state and local laws and regulations for the manufacture and installation of unfired pressure vessels. Interior coatings or diaphragms used in pressure tanks that will come into contact with the drinking water shall comply with ANSI/NSF Standard 61. Non diaphragm pressure tanks shall have an access manhole, a drain, control equipment consisting of pressure gauge, water sight glass, automatic or manual air blow-off, means for adding air, and pressure operated start-stop controls for the pumps.~~

~~(b) The minimum volume of the pressure tank or combination of tanks shall be greater than or equal to the sum of S and the value of CX divided by 4W.~~

~~where the following values are used in the equation above:~~

~~C = minutes per operating cycle, four minutes to meet the requirements of R309-540-6(5) above or preferably six minutes, and is equal to pump ON time plus pump OFF time.~~

~~X = output capacity rating of the pump(s) at the high pressure condition in the tank(s), in gpm.~~

~~W = percent of volume withdrawn during a given drop in tank~~

pressure: specifically, between P_h and P_l . $W = 100(P_h - P_l)/P_h$ where P_h = high pressure in tank in psia (high absolute pressure) and P_l = low pressure in tank in psia (low absolute pressure). Values of W range typically from 0.26 to 0.31 for pressure differentials of 15 to 30 psi and high system pressures of 45 to 85 psi at elevations of approximately 5,000 feet.

S = water seal volume in gallons, the volume of inactive water remaining in tank at low pressure condition.

(7) Air Volume.

The method of adjusting the air volume shall be acceptable to the Director. Air delivered by compressors to the pressure tank shall be adequately filtered, oil free, and be of adequate volume. Any intake shall be screened and draw clean air from a point at least 10 feet above the ground or other source of possible contamination, unless the air is filtered by an apparatus approved by the Director. Discharge piping from air relief valves shall be designed and installed with screens to eliminate the possibility of contamination from this source.

(8) Water Seal.

For air pressure tanks without an internal diaphragm the volume of water remaining in a air pressure tank at the lower pressure setting shall be sufficient to provide an adequate water seal at the outlet to prevent the leakage of air.

The following water seal depths shall be considered as minimum requirements.

(a) Horizontal outlets shall maintain sufficient depth, as measured from the centerline of the horizontal outlet pipe, such that the depth is greater than or equal to the sum of d and twice the value v^2 divided by $2G$.

(b) Vertical outlets, if unbaffled, the depth shall be the same as in (a) except measured from the pipe outlet; if baffled, the depth shall be greater than or equal to the value v^2 divided by $2G$.

where the following values are used in the equations above:

v = the axial velocity in the pipe outlet for the peak instantaneous demand flow rate of the system.

d = the diameter of the outlet pipe in ft.

G = the gravitational constant of 32.2 ft/sec/sec.

(9) Standby Power Supply.

Where a hydropneumatic system is intended to serve a public water system, categorized as a community water system as defined in R309-110, a standby source of power shall be provided.]

R309-540. Facility Design and Operation: Pumping Facilities.

R309-540-1. Purpose.

The purpose of this rule is to provide specific requirements for the design and operation of drinking water pumping facilities. It is intended to be applied in conjunction with rules R309-500 through R309-550. Collectively, these rules govern the design, construction, operation and maintenance of public drinking water system facilities. These rules are intended to assure that such facilities are reliably capable of supplying adequate quantities of water which consistently meet applicable drinking water quality requirements and do not pose a threat to general public health.

R309-540-2. Authority.

This rule is promulgated by the Drinking Water Board as authorized by Title 19, Environmental Quality Code, Chapter 4, Safe Drinking Water Act, Subsection 104(1)(a)(ii) of the Utah Code and in accordance with 63G-3 of the same, known as the Administrative Rulemaking Act.

R309-540-3. Definitions.

Definitions for certain terms used in this rule are given in R309-110 but may be further clarified in this rule.

R309-540-4. General.

The following requirements apply to all pumping facilities including pumps, pump stations, and hydropneumatic systems. Pumping facilities shall be adequately sized and be designed to maintain the quality of the water and to meet minimum pressure requirements.

(1) Location and Accessibility.

(a) A pumping facility shall be designed and operated to meet the following requirements:

(i) The facility may not be located at a site that negatively affects drinking water quality.

(ii) The site shall be compatible with the hydraulics of the water system.

(iii) The site shall be graded to direct surface runoff away from the facility.

(iv) The facility shall be accessible at all times unless the facility can be taken out of service during periods of inaccessibility.

(v) The facility shall be protected from vandalism and unauthorized entry.

(2) Appurtenances.

(a) Valves.

Valves for pumping facilities shall be designed and operated to meet the following requirements.

(i) Isolation valves shall be included for operation, maintenance, and repair of the pumping equipment.

(ii) Foot valves in wet wells shall have a net valve area of at least 2 1/2 times the area of the suction pipe and there shall be a positive-acting check valve on the discharge side between the pump and the shut-off valve.

(iii) The open end of a vent on an air relief valve shall be downturned and covered with a #14 mesh non-corrodible screen. The

end of a vent shall terminate in the following location:

(A) At least six inches above the floor, if the valve is located in a building

(B) At least 12 inches above the top of the water line, if the valve is located in a below grade chamber that is not subject to flooding

(C) At least 12 inches above grade, if the valve is located in a below grade chamber that is subject to flooding

(b) Piping.

Piping for pumping facilities shall be designed to meet the following requirements:

(i) Friction losses shall be minimized.

(ii) Piping shall not be subject to contamination.

(iii) Watertight joints shall be provided.

(iv) Protection against surge or water hammer shall be provided along with suitable restraints if necessary.

(c) Controls.

Controls for pumping facilities shall be designed and operated to meet the following requirements:

(i) The pump and accessories shall operate at the rated capacity.

(ii) Where two or more pumps are installed, provisions shall be made for alternation of the pumps.

(iii) Provisions shall be made to prevent energizing the pump motor in the event of a backspin cycle.

(iv) Electrical controls shall be protected against flooding.

(v) Provisions shall be made to prevent surge pressures from activating controls that switch on pumps or activate other equipment outside the normal design cycle of operation.

(vi) Pump control equipment shall have proper overload protection for the air temperature encountered.

(d) Standby Power.

A community water system that relies solely on a pump to supply water to the distribution system shall provide a redundant power supply. A redundant power supply may include a transfer switch for auxiliary power such as a generator or a power supply service with coverage from two independent substations.

(e) Water Pre-Lubrication.

If automatic pre-lubrication of pump bearings is needed and an auxiliary direct drive power supply is provided, the pre-lubrication line shall be provided with a valved bypass around the automatic control so that the bearings can, if necessary, be lubricated manually before the pump is started or the pre-lubrication controls shall be wired to the auxiliary power supply.

(f) Gauges.

Each pump station shall be designed to include the following gauges:

(i) The discharge line shall have a standard pressure gauge or an alternative means of measuring pressure on the discharge line.

(ii) The suction line shall have a compound gauge (capable of indicating negative pressure or vacuum as well as positive pressure) or an alternative means of measuring pressure.

R309-540-5. Pumps.

(a) Capacity.

Pumping facility shall be sized to meet the peak day demand of the specific portion of the distribution system served, or it shall meet the operating conditions if not serving the distribution system.

(b) Pump Motor.

Pump motors shall meet the following requirements:

(i) The pump motor shall be sized to meet the operating conditions without dangerous overloading.

(ii) The pump shall be driven by prime movers able to meet the maximum horsepower condition of the pumps without use of service factors.

(c) Suction Lift.

Suction lift, where possible, should be avoided. If suction lift is necessary, it shall be within the pump manufacturer's recommended limits and provisions shall be made for priming the pumps.

(d) Priming.

Where pumps require priming, the following requirements shall be met:

(i) Priming water shall not be of lesser sanitary quality than that of the water being pumped.

(ii) A means shall be provided to prevent back siphonage.

(iii) When an air-operated ejector is used for vacuum priming, the screened intake shall draw clean air from a point at least 10 feet above the ground or other source of possible contamination.

(e) Water Seal.

Where pumps use water seals, the seals shall meet the following requirements:

(i) They may not be supplied with water of a lesser sanitary quality than that of the water being pumped.

(ii) When pumps are sealed with potable water and are pumping water of lesser sanitary quality, the water for the seal shall be provided with a break tank open to atmospheric pressure, and have an air gap of at least six inches or two pipe diameters, whichever is greater, between the feeder line and the spill line of the tank.

R309-540-6. Booster Pumps Serving the Distribution System.

(a) Booster pumps shall be designed and operated to meet the following requirements:

(i) Negative pressure may not be produced in suction lines.

(ii) The automatic cutoff pressure shall be at least 10 psi in the suction line.

(iii) Automatic or remote control devices shall have a range between the start and cutoff pressure that will prevent excessive cycling.

(iv) A bypass shall be available.

(b) Inline booster pumps (pumps withdrawing water directly from distribution lines without the benefit of storage and feeding such water directly into other distribution lines rather than storage) shall be designed and operated to meet the following requirements:

(i) At least two pumping units shall be provided with each pump capable of meeting the peak day demand of the specific portion of the system served.

(ii) The pumps shall be accessible for servicing and repair.

(iii) The intake pressure shall be at least 20 psi when the pump or pumps are in normal operation.

(c) A public water system may not rely on individual service connection booster pumps to meet minimum pressure requirements.

R309-540-7. Pump Stations.

(a) If a building structure is provided for pumping facilities it shall be designed to meet the following requirements:

(i) Adequate space shall be provided for the safe servicing of all equipment and, if needed, the installation of additional pumps.

(ii) The building shall be durable.

(iii) Access to the pump station shall be six inches above the surrounding ground and the station located at an elevation which is a minimum of three feet above the 100-year flood elevation, or three feet above the highest recorded flood elevation, whichever is higher, or protected to such elevations.

(iv) Underground facilities shall be waterproof.

(v) Interior floors shall be drained in such a manner that the quality of drinking water contained in a wet well will not be endangered.

(vi) A means shall be provided for handling drainage from pump glands.

(b) Wet wells shall be designed to meet the following requirements:

(i) Construction shall be watertight.

(ii) Floors shall be sloped to permit removal of water and sediment.

(iii) Openings shall be covered and protected against contamination.

(c) Provisions shall be made for servicing or removal of heavy or bulky equipment.

(d) Stairways and ladders shall be designed to meet the following requirements:

(i) Safe access shall be provided between all floors and in pits or compartments that must be entered.

(ii) Added features shall provide for the safety of the operator, for example, by providing handrails on stairways and non-slip treads on steps.

(e) Adequate heating and lighting shall be provided for the safety and comfort of the operator and the safe and efficient operation of the equipment.

(f) Ventilation shall meet the following requirements:

(i) Forced ventilation of at least six changes of air per hour shall be provided for rooms, compartments, pits and other enclosures below ground floor and for any area where unsafe conditions may develop.

(ii) Existing local and state codes shall be followed.

(g) Automatic and remote-controlled stations shall meet the following requirements:

(i) Remote-controlled stations shall have signaling apparatus of proven performance.

(ii) Installation of electrical equipment shall conform with the applicable state and local electrical codes and the National Electrical Code.

R309-540-8. Hydropneumatic Systems.

(1) General.

(a) Pressure tanks shall comply with ANSI/NSF Standard 61.

(b) Community water systems shall not use hydropneumatic tanks to meet the water storage sizing requirements in R309-510-8.

(2) Location.

(a) A hydropneumatic pressure tank shall be located above ground if possible.

(b) If pressure tanks and appurtenances are located below ground, adequate provisions for drainage, ventilation, access, maintenance, and flood protection shall be provided, and the electrical controls shall be located above grade so as to be protected from flooding.

(3) Operating Pressures.

A means of monitoring the operating pressures of a hydropneumatic tank shall be provided.

(4) Bypass Piping.

The hydropneumatic system design shall include bypass piping and isolation valves to allow one or more of the pressure tanks to be serviced without affecting the availability of the remaining units.

(5) Redundancy.

(a) When used to maintain minimum pressures within the distribution system, a community water system shall have a means of providing redundancy to allow the tanks to be taken off line or serviced.

(b) At least two units shall be provided for community water systems if the hydropneumatic system is the only means to maintain minimum pressures in the distribution system.

(6) Sizing.

The minimum volume of a hydropneumatic tank shall be sized to avoid excessive pump cycling.

(7) Air-Over-Water Pressure Tanks.

(a) General.

Large air-over-water pressure tanks shall have an access manhole, a drain, a pressure gauge, a water sight glass, an automatic or manual air blow-off, a means for adding air, and pressure operated start-stop controls for the pumps.

(b) Air Supply for Pressure Tanks.

(i) Air delivered by a compressor to the pressure tank shall be adequately filtered, oil free, and be of adequate flow rate.

(ii) An air intake shall be screened and draw clean air from a point above the ground and free of possible contamination.

(iii) Discharge piping from air relief valves shall be screened and designed to eliminate the possibility of contamination.

(c) Water Seal.

(i) For air pressure tanks without an internal diaphragm the volume of water remaining in an air pressure tank at the lower pressure setting shall be sufficient to provide an adequate water seal at the outlet to prevent the leakage of air.

(d) Water Seal Depth.

The minimum water seal depths shall be as follows.

(i) Horizontal outlets shall maintain sufficient depth, as

measured from the centerline of the horizontal outlet pipe, such that the depth is greater than or equal to the sum of (d) and (twice the value v squared divided by 2g). (Depth $\geq d + (2v^2/2g)$)

(ii) For vertical outlets, if unbaffled, the depth shall be the same as in (i) except measured from the pipe outlet; if baffled, the depth shall be greater than or equal to the value v squared divided by 2g. (Depth $\geq (v^2/2g)$)

Where the following values are used in the equations above:

v = the axial velocity in the pipe outlet for the peak instantaneous demand flow rate of the system.

d = the diameter of the outlet pipe in feet

g = the gravitational constant of 32.2 feet/sec/sec.

KEY: drinking water, pumps, hydropneumatic systems, individual home booster pumps

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Agenda Item

9(A)



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

June 27, 2016

PWS Contact (Send to Community Water Systems in Utah)
Address

Subject: Financial Assistance for DDW's Water Use Data Collection Project

Dear Water System Representative:

The Division of Drinking Water has low-interest or no-interest loan funding available for water systems to upgrade metering equipment to measure and record peak day water use. The improvements would benefit water systems with improved water use measurement, more accurate billing, and a basis for determining water loss. They would also help provide the Division with water use data for re-evaluation of statewide source capacity requirements.

In 2014, a Legislative Audit recommended that the Division re-evaluate source capacity requirements for water systems based on actual indoor and outdoor water use. The 2016 state legislature declined to fund the Division's proposal to collect statewide water use data for this purpose.

Therefore, the Division is now seeking peak day water use data from systems that are able to provide it and offering low-interest loans to systems to upgrade metering equipment to collect the peak day data. The data needed includes daily production from all sources and daily water use by individual customers.

If your water system has this peak day water use data that you are willing to provide to the Division, or if you want to upgrade your metering equipment to be able to provide the data, please contact Tammy North by **July 29, 2016**, at (801) 536-4293 or tnorth@utah.gov.

I appreciate your help with our request to obtain the needed water use data.

Sincerely,

Kenneth H. Bousfield, P.E.
Director

Agenda Item

9(C)



Ken Bousfield <kbousfield@utah.gov>

H2Oath: Utah's Water-Wise Pledge

1 message

Joshua Palmer <jpalmer@utah.gov>
To: Ken Bousfield <kbousfield@utah.gov>
Cc: Dale Pierson <dale.pierson@rwau.net>

Fri, Jun 17, 2016 at 11:24 AM

Hi Ken,

It was great talking to you today. I have attached the print version of the H2Oath, although most people fill it out at water.utah.gov/H2Oath. Below is a brief description of the campaign:

"The Utah Division of Water Resources (DWR) recently launched a water conservation campaign called "H2Oath: Utah's Water-Wise Pledge" to encourage additional water conservation efforts by families, businesses, cities, government agencies and statewide organizations.

The H2Oath is designed to commit individuals and groups to conserve more by following the division's Weekly Lawn Watering Guide (found on slowtheflow.org, and posted weekly via the division's Facebook and Twitter accounts) throughout the irrigation season. It also encourages committing to several other water conservation actions. Governor Herbert showed his support, officially declaring May 10, 2016 "H2Oath: Utah's Water-Wise Pledge Day."

Hundreds of people and organizations have taken the H2Oath. The division will work throughout the summer to partner with organizations and individuals to conserve water through adherence to the its commitments. The division encourages organizations to go to water.utah.gov/H2Oath to take the pledge, and show support by asking their customers, employees and constituents to do the same!"

Best Regards,

—
Joshua Palmer; Public Information Officer
Utah Division of Water Resources
[801-244-7767](tel:801-244-7767)

 **H2OathWrittenPledge.docx**
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H₂OATH

Water Conservation Pledge

water.utah.gov/H2Oath

Name: _____

Organization (if applicable): _____

Which city do you live in or closest to: _____

Email (optional) _____

I hereby take the H2Oath, and pledge to adhere to each of the following water-wise practices to the best of my ability (please select each one):

- I will water my landscape no more than is recommended by the *Weekly Lawn Watering Guide* found on SlowTheFlow.org, and posted weekly on the Utah Division of Water Resources Facebook page and Twitter account. (If everyone does it, it will save Utah billions of gallons)
- I will not water my landscape at the hottest time of the day.
- I will not water during or directly after a rainstorm.
- I will adjust my sprinklers to avoid spraying sidewalks and driveways.
- I will adjust my lawn mower to one of the higher settings to help shade roots, and reduce the need for water.
- I will look for opportunities to add water-wise plants to my landscape.
- I will identify and fix leaks both inside and outside of my home.
- I will reduce my shower time by at least 1 minute per shower.
- I will wait until I have a full load to run my dishwasher or washing machine.

Signature: _____