Drinking Water Board Packet

May 13, 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

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

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. March 3, 2016
   B. April 25, 2016

4. Financial Assistance Committee Report
   A. Status Report – Michael Grange
   B. Project Priority List – Michael Grange
   C. SRF Applications
      i. STATE:
         a) Trenton Town – Julie Cobleigh
      ii. FEDERAL:
         a) Echo Mutual – Julie Cobleigh
         b) Corinne City – Rich Peterson
         c) Springdale Town – Julie Cobleigh
      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*

6. Rural Water Association Report – Dale Pierson

7. Directors Report
   A. SDWA Retrospective
   B. The Division's Planning Retreat, May 19, 2016

8. Other

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

10. 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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Mark Stevens, M.D.
Kenneth H. Bousfield, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING
March 3, 2016 – 2:00 pm
The Dixie Convention Center, Garden Room
1835 Convention Center Drive
St. George, Utah 84790

DRAFT MINUTES

1. Call to Order – Chairman Hansen

Paul Hansen, Board Chairman, called the meeting to order at 2:00 pm.

Paul thanked Dale Pierson for accommodating the Board Meeting as part of the Rural Water Association of Utah's (RWAU) Annual Conference.

2. Roll Call – Ken Bousfield

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

Board Members excused: Mark Stevens

Division Staff present: Ken Bousfield, Michael Grange, Rich Peterson, Patti Fauver, Nathan Hall, Heather Bobb, Brandi Smith, Colt Smith, Rachael Cassady, Emily Frary, and Marianne Booth

3. Approval of the Minutes:

A. January 8, 2016

- Betty Naylor moved to approve the 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) reported that currently in the State SRF fund there is approximately $2.6 million and over the course of the next year the Division is expecting another $6 million to come into the fund, for a total of $8.7 million to be available for the funding of projects. He then took a few moments to update the Drinking Water Board (DWB, the Board) on the status of the projects.

Michael then reported that currently in the Federal SRF fund there is $20 million and over the course of the next year the Division is expecting another $16 million to come into the fund, for a total of $35.8 million to be available for the funding of projects. He did note, that if approved, the project for Juab County, would take a significant portion of that fund. He then gave updates on the current projects.

Michael, as requested by the Board in the previous meeting, presented information regarding the ability of the Board to provide subsidies to water systems out of the State and Federal SRF programs. He informed them that the EPA had sent the report with the amount of Federal appropriations but not the report on how much they are authorized to allocate for additional subsidization for water systems and noted that he is waiting for clarification as of yet. He then referred them to sections of the Federal register that pertain to the SRF program and, that by his calculations, the Board can authorize approximately $1,734,800 in principal forgiveness out of the Federal SRF program for fiscal year 2016. Michael then referred them to sections of Utah Code Title 73 Chapter 10C, which established the Drinking Water Board, and noted that it gives them significant latitude in establishing loan criteria, repayment criteria, interest rates, grant amounts, and principal forgiveness, and does not have a set dollar limits on subsidizations.

Michael then took a moment to report the following annual audit results from the EPA:

- Fund Use Rate (Federal grant amount/allocations): 83%
- Pace of Construction (amount disbursed/amount allocated): 94%
- Return on Federal Investment: $1.35

He then noted his appreciation to Division Staff and the work that they do in helping to assure the program is run efficiently and effectively.

i. Intended Use Plan

Michael Grange reported on the completed 2016 Intended Use Plan which outlines exactly how the Division plans to use the capitalization grant funding from EPA.

B. Project Priority List – Michael Grange

Michael Grange proposed that two new projects be added to the project priority list; North Fork Special Service District with 90.5 points and a project consisting of a new well and a new tank; and Juab County with 9.7 points and a project consisting of a wholesale water transmission pipeline. The Financial Assistance Committee (FAC) recommends the Board approve the updated project priority list.

- David Stevens moved to approve the updated project priority list. Tage Flint seconded. The motion was carried unanimously by the Board.

C. SRF Applications

i. STATE:

a) Piute Co – Greenwich De-Authorization – Michael Grange

Michael Grange informed the Board that since authorizing $130,000 in financial assistance to Piute County Special Service District (Piute) on behalf of Greenwich Water Association (Greenwich) in order to construct a new chlorination building, Piute no longer has the funds necessary to support that project and are requesting the Board de-authorize the loan. The FAC recommends that the Board de-authorize the $130,000 to Piute County Special Service District on behalf of Greenwich Water Association at 3.26% interest or fee per annum for 30 years with $26,000 in grant.

- Paul Hansen moved to de-authorize the $130,000 to Piute County Special Service District on behalf of Greenwich Water Association at 3.26% interest or fee per annum for 30 years with $26,000 in grant. Roger Fridal seconded. The motion was carried unanimously by the Board.

ii. FEDERAL:

a) Greenwich – Michael Grange

Representing Greenwich Water Association (Greenwich) was Gary DeLeeuw, President of Greenwich and Jeff Albrecht of Savage Surveying.

Michael Grange informed the Board that Greenwich is requesting $130,000 in financial assistance to construct a new chlorination building and equip it with a tablet chlorination system and solar power service. He then reported that their existing equipment has reached the end of its useful life, that it is currently located in a manhole, inaccessible during the winter months, and currently has no power. The local MAGI for Greenwich is $35,027 which is 87% of the State MAGI. Their current average water bill is $25, or 0.86% of the local MAGI. In 2011 Greenwich took out a 30 year loan from the Board for $201,000 with annual repayments of $7,500. Greenwich currently does not collect enough revenue to cover this annual debt and it is actually being paid for by Piute County Special Service District. Based on this information the average water bill after project completion would be $51.46, or 1.77% of local MAGI, which qualifies them to be considered for grant. The FAC recommends that the Board authorize $130,000 in financial assistance to Greenwich at 0% interest for 30 years with $65,000 in principal forgiveness.

There was discussion between the Board, Division Staff, and those representing Greenwich regarding the amount of financial assistance, the amount of the water bill, and the need for a public hearing.

- Paul Hansen moved to authorize $130,000 in financial assistance at 0% interest for 30 years with $65,000 in principal forgiveness to Greenwich Water Company. Brett Chynoweth seconded. The motion was carried unanimously by the Board.

b) North Fork SSD – Rich Peterson

Representing North Fork Special Service District (North Fork) was Stephen Miche, Operations Manager, and Ryan Taylor of Epic Engineering.

Rich Peterson, Environmental Engineer with the Division, informed the Board that North Fork is requesting $2,199,000 in financial assistance for a new well, pump vault, transmission line, and new tank. Rich also reported that North Fork will also contribute an additional $198,000 and use energy efficient components. The local MAGI for North Fork is $112,758 which is 278% of the State MAGI. The average water bill after project completion would be $151, or 1.61% of local MAGI. Division Staff recommends the Board authorize a $2,199,000 construction loan at 2.0% interest, as they are using energy efficient components, for 20 years to the North Fork Special Service District.

- Roger Fridal moved to authorize a $2,199,000 construction loan at 2.0% interest for 20 years to North Fork Special Service District, and that North Fork also contributes $198,000. David Sakrison seconded. The motion was carried unanimously by the Board.

c) Juab County – Nathan Hall

Representing Juab County (Juab) was Rick Carlton, Juab County Commission; Jason Burningham of Lewis, Young, Robertson & Burningham; and Eric Franson of Franson Civil Engineers.

Nathan Hall, Environmental Engineer with the Division, informed the Board that Juab is requesting $21,210,000 in financial assistance to construct a 10.9 miles long wholesale water pipeline from Santaquin, Utah to Mona, Utah. The average local MAGI for the two areas is $41,683 which is 103% of the State MAGI. As Juab is not a public water system they are planning on using a general obligation bond to repay the loan and therefore Nathan presented different options to the FAC. The FAC recommends that the Board authorize a $21,210,000 construction loan based on one of those options to Juab County.

There was discussion between the Board, Division Staff, and those representing Juab regarding the amount of the financial assistance, the different term options, the size of the project, the need for a general obligation bond, and water rights. Rick Carlton also explained that Juab is proposing this project in order to be prepared for projected population growth and Juab plans to set up a water conservancy or special service district prior to loan closing which would ultimately be named the borrower.

- Tage Flint moved to authorize a $21,210,000 construction loan at 2.5% fee per annum for 30 years with the right of conveyance to Juab County. Roger Fridal seconded. The motion was carried unanimously by the Board.

d) Manila – Michael Grange

Representing Manila was Jeff McCarty of Sunrise Engineering.

Michael Grange informed the Board that on March 22, 2013 the Board authorized a loan of $464,000 at 1.5% interest for 20 years to Manila to replace approximately 8,700 feet of old 8 inch transmission line. Manila has now completed that project, has approximately $58,000 of the loan remaining, and is requesting that the Board authorize them to use it to upgrade their existing SCADA system and rehabilitate as many of their storage tanks as possible. The FAC recommends that the Board authorize a change of scope for Manila's remaining funds.

- Brett Chynoweth moved to authorize a change of scope for Manila to use the remaining funds. David Sakrison seconded. The motion was carried unanimously by the Board.

5. Final Rule Adoption for the Revised Total Coliform Rule (federal effective date April 1, 2016):

A. R309-105*, Administration: General Responsibilities of Public Water Systems.*
B. R309-110*, Definitions*
C. R309-200*, Drinking Water Standards*
D. R309-210*, Distribution System Monitoring Requirements*,
E. R309-211*, Monitoring and Water Quality: Distribution System Total Coliform Requirements*,
F. R309-215*, Treatment Plant Monitoring Requirements*
G. R309-220*, Public Notification Requirements*, and
H. R309-225*, Consumer Confidence Reports*.

- Patti Fauver

Patti Fauver, Environmental Program Manager with the Division, informed the Board that the State rules that are being proposed for change have been filed, a public hearing, and written comment period held. She then noted that it is just one EPA rule, the total coliform rule, which is changing and showed the Board and audience a presentation outlining how that affects each of the listed State rules and also focused on the change that could be perceived as more stringent than the Federal rule. She presented the Board packet as the written findings supporting the health based need for monthly monitoring for year round non-community systems.

Colt Smith, Environmental Scientist with the Division, also presented information to the Board and audience regarding waterborne illnesses as well as case studies supporting the need for the more stringent rule to protect public health.

Division Staff is recommending that the Board authorize, pending funding, to proceed with filing the notices, to become effective in Utah on May 1, 2016, for the substantive changes to R309-105, R309-110, R309-210, R309-211, R309-215, R309-220, and R309-225 with the Division of Administrative Rules.

Paul Hansen, Board Chairman, asked for clarification from Ken Bousfield, Division Director, on the minutes from the public hearing, specifically page 2, lines 12 through 16, where he is quoted as saying:

> *In order for the State to maintain privacy and privacy means, the responsibility to implement the Federal Safe Drinking Water Act, in order for the State to continue to do this, we must adopt a corresponding State rule.*

Ken clarified that he meant "primacy" not "privacy". Paul also noted that neither the Board nor the Division are private entities nor do they do things in private.

As there was some new public health information presented at the meeting, Paul Hansen opened a limited extension of the public comment period to address only items specific to that information. There were no comments made. The public comment period was closed.

Ken Bousfield referred the Board to Utah Code Title 19, Chapter 4, §105, where it states that in order for a State rule to be more stringent than a Federal rule it must be in order to protect public health.

There was discussion between the Board and Division Staff regarding the effective date of the Federal and the State rules, that sampling is based on a calendar month, that seasonal systems would be required to sample every month they specify that they are open, and the cost of sampling.

- Betty Naylor moved that the Board, finding that there is significant health reasons for the proposed rule to be more stringent than the corresponding Federal rule, authorize Division Staff, pending Division funding, to proceed with filing the notices, to become effective in Utah on May 1, 2016, for the substantive changes to R309-105, R309-110, R309-210, R309-211, R309-215, R309-220, and R309-225 with the Division of Administrative Rules. David Sakrison seconded. <u>The motion was carried unanimously by the Board.</u>

6. Rural Water Association Report – Dale Pierson

Dale Pierson, Executive Director of the Rural Water Association of Utah, reported the following regarding their Annual Conference. There were:

- 1,931 attendees.
- 178 vendors
- 226 booths
- 97 individuals taking the operator certification class
- 37 individuals taking the wastewater certification class

Dale went on to report that the City of Monroe won for best tasting water in Utah and their representatives will be going with RWAU to Washington, D.C. in February 2017 to meet with the Congressional Delegation, that Michael Grange had been awarded the "Friend of Rural Water" at the banquet that was held on March 2, 2016, and noted that included in the Board packet were thank you letters to RWAU that also referenced State funded programs.

Dale then reported that with the Board grant for energy efficient equipment, RWAU has so far used ½ of it to purchase a digital water leak detector and a video camera to view water lines, and RWAU plans to purchase an infra-red camera and another leak detector, along with some other items, with the remaining funds this year.

7. Directors Report

B. DDW staff involvement at the RWAU Conference

Ken Bousfield followed up Dale Pierson's report of the RWAU Annual Conference by adding the following regarding the Division Staff involvement:

- 22 presentations
- 97 operator certification test given
- 75 consumer confidence reports produced
- 149 reports dealing with monitoring requirements, inventory, operator certification records and IPS reports
- 6 discussions on preparing or updating source protections plans
- 18 consultations on varying issues brought up by water utility personnel
- 10 formal pre-arranged discussions with water utility peronnel, and
- An unnumbered amount of informal discussions as staff and water system personnel crossed paths at the conference.

A. Report on the Legislative Session

Ken then reported on the Legislative Session with regards to the following 4 specific bills and the Division's request to appropriate funds for its Water Use Study:

- House Bill 309, which proposed to remove the sales tax monies that the Board relies on for the State SRF program. As of noon today it has not been presented to the assigned Appropriations Committee.
- Senate Bill 28, which would require water systems to increase water bills for customers with increased water usage to encourage water conservation. This bill has passed both the House and Senate. It will not have a major impact on the Drinking Water Board or Division, as it is applicable to water systems who serve in excess of 500 connections, and systems of this size typically already have metering equipment in place.
- House Bill 305, which would require the Board to revise its standards to include an annual report for water systems. The Board would need to clarify its rule to include the Annual Water Use Report. This bill has passed the house and is currently before the Senate.
- Senate Bill 80, which would remove sales tax money from the Department of Transportation funds to a fund managed by the Division of Water Resources. This bill has passed the Senate and is under review by the House Appropriations Committee.
- The Division, with the support of the Governor's office, has sought funding to pursue its obligation to fulfill a Legislative Audit recommendation about updating the Board's Rules related to source water capacity. The funding would be used to purchase and install electronic recording and reporting meters on a sample of water system sources as well as a sample of individual homeowner's water lines to determine peak day use

and distinguish between indoor and outdoor water usage. The needed funding was not approved by the Appropriations Committee.

8. Other

Paul Hansen informed the Board that it was time to appoint a new Board Chairman and Vice-Chairman. He then opened it up for nominations.

- Betty Naylor moved to reappoint Paul Hansen as Board Chairman. There were no other nominations. David Stevens seconded. The motion was carried unanimously by the Board.

- Roger Fridal moved to reappoint Betty Naylor as Board Vice-Chairman. There were no other nominations. David Sakrison seconded. The motion was carried unanimously by the Board.

Paul thanked the Board and voiced his pleasure to be able to serve with them. Betty Naylor also thanked the Board.

9. Next Board Meeting:

Date: Friday, May 13, 2016
Time: 1:00 pm
Place: Multi Agency State Office Building
Room 1015
195 North 1950 West
Salt Lake City, Utah 84116

10. Adjourn

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

The meeting adjourned at 4:03 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 3(B)

State of Utah
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Mark Stevens, M.D.
Kenneth H. Bousfield, P.E.
Executive Secretary

DRINKING WATER BOARD MEETING
April 25, 2016 – 1:00 pm
Multi Agency State Office Building
Arches South Conference Room - 3116
195 North 1950 West
Salt Lake City, Utah 84116
Teleconference

DRAFT MINUTES

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

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

2. **Roll Call – Michael Grange**

Board Members present: Paul Hansen, Brett Chynoweth, Roger Fridal, David Sakrison, and David Stevens. Betty Naylor joined at 1:01 pm.

Board members excused: Tage Flint, Alan Matheson, and Mark Stevens.

Division staff members present: Michael Grange, Heather Bobb, Gary Kobzeff, and Marianne Booth.

Division staff excused: Ken Bousfield

3. **Wellington SRF Application – Gary Kobzeff**

Representing Wellington were Joan Powell, Mayor of Wellington, and Robert Worley, P.E. of Sunrise Engineering.

Gary Kobzeff, Environmental Engineer with the Division of Drinking Water (DDW, the Division) informed the Board that Wellington is requesting $1,063,000 to construct a new 750,000 gallon concrete storage tank. He also noted that Wellington had previously requested $1,006,000 and the $57,000 increase is to cover the costs of the additional

Federal SRF program requirements; and that the new tank will be sufficient to supply Wellington for at least 30 plus years according to the Governor's Office of Management and Budget. The local MAGI for Wellington is $39,298 or 94% of State MAGI. The water bill after proposed funding would be $67.74 or 2.07% of local MAGI, which qualifies them for additional subsidization. The FAC recommends that the Drinking Water Board authorize a $1,063,000 construction loan with $212,000 in principal forgiveness to Wellington City with 2.2% interest or fee per annum for 30 years to Wellington.

There was discussion between the Board, Division staff, and those representing Wellington. It was reiterated that the new tank is more than sufficient for the City of Wellington for 30 plus years. There was also discussion that the irrigation bill being separate from the water bill but included in the total for subsidization is a non-issue as that information is requested of every applicant as part of the application for funding.

Mayor Powell expressed her appreciation to the Board and Division staff for their time.

- Roger Fridal moved to authorize $1,063,000 construction loan with $212,000 in principal forgiveness to Wellington City with 2.2% interest or fee per annum for 30 years to Wellington. Brett Chynoweth seconded. The motion was carried unanimously by the Board.

4. **Next Board Meeting:**

Date: May 13, 2016
Time: 1:00 pm
Place: Multi Agency State Office Building
Room 1015
195 North 1950 West
Salt Lake City, Utah 84116

5. **Adjourn**

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

The meeting adjourned at 1:17 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)

Will be available as a handout at the
May 13, 2016 Board Meeting.

Agenda Item 4(B)

Project Priority List
Presented to the Drinking Water Board
May 13, 2016

DRINKING WATER BOARD
PACKET FOR PROJECT PRIORITY LIST
INTRODUCTION TO THE FINANCIAL ASSISTANCE COMITTEE

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

Springdale is being added to the Project Priority List with 72.3 points. Their project consists of a treatment plant.

Wellington City is being added to the Project Priority List with 43.5 points. Their project consists of a new tank.

Corinne City is being added to the Project Priority List with 20.6 points. Their project consists of a radium filter for their well, spring rehab and a transmission line.

Echo Mutual Water Company is being added to the Project Priority List with 7.9 points. Their project consists of spring redevelopment.

STAFF RECOMMENDATION:

The Drinking Water Board approve the updated Project Priority List.

March 31, 2016

Utah Federal SRF Program

Project Priority List

Total Unmet Needs: **$244,964,177** **Total Needs, incl. Recent funding** **$254,943,069** **Authorized** **$229,368,468**

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
N				72.3	Springdale	Washington	572	Treatment Plant	$4,730,000	4,600,000	
N				43.5	Wellington City	Carbon	1,676	New 750,000-gallon Storage Tank	$1,006,167.00	1,006,167	
N				22.8	Old Meadows	Iron	41	Replace Distribution System	$338,747	413,292	
N				20.6	Corinne City	Box Elder	700	Radium Filter, Spring Rehab, Transmission Line	$561,111.00	561,111	
N				7.9	Echo Mutual Water System	Summit	50	Radium Filter, Spring Rehab, Transmission Line	$35,857.00	35,857	
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				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
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				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

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		

March 31, 2016

Utah Federal SRF Program

Project Priority List

Total Unmet Needs: **$244,964,177** **Total Needs, incl. Recent funding** **$254,943,069** **Authorized** **$229,368,468**

	date	type	%Green	Priority Points	System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
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		
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		

March 31, 2016

Utah Federal SRF Program

Project Priority List

										Authorized
				Priority Points	Total Unmet Needs:		$244,964,177		Total Needs, incl. Recent funding	$254,943,069		$229,368,468
	date	type	%Green		System Name	County	Pop.	ProjectTitle	Project Total	Request DWB	Funds Authorized
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)

Trenton Town
Presented to the Drinking Water Board
May 13, 2016

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST:

On November 13, 2015, Trenton, Clarkston and Newton Towns received authorization for a $632,000 loan at 1.0% interest for 30 years with a grant of $631,000 to redevelop the North Fork and Big Birch Springs, which are a shared source by the three towns. Bids for the project recently came in higher than available funds. The potential spring collection area was larger than originally anticipated and they felt it important to maximize the spring production potential. The applicant is requesting an increase of $200,000 to the original authorization.

STAFF COMMENTS:

A Microscopic Particulate Analysis (MPA) was conducted by the Division on May 26, 2015. The results concluded that the Big Birch Spring is under the direct influence of surface water. The North Fork Spring flows into the Big Birch Spring collection box and recent camera investigations have demonstrated that the collection lines are smashed, root intrusion is visible and there are portions of the collection area that are placed in a way that prevents access for cleaning. The source is shared equally by Trenton, Clarkston and Newton Town.

All three towns have agreed to be equally financially responsible for the redevelopment of the two springs. Trenton Town has applied for the financial assistance and the water revenue bond for the loan portion of the funding will be in their name. The other two towns have agreed to establish inter-local agreements before loan closing, which will establish the repayment of their portion of the loan back to Trenton.

The local MAGI for the Trenton Town is $34,163, which is 84% of the State MAGI. They currently have a water bill of approximately $52 per month, which is 1.83% of local MAGI. Trenton is responsible for 1/3 of this funding. The funding previously authorized, required an increase in their water bill to approximately $63 per connection, which is 2.23% of the local MAGI. They are requesting that the $200,000 increase in funding be the same loan/grant ratio that was originally authorized. This will increase the loan portion for each community to $244,000, which will increase Trenton's water bill to approximately $64 per connection.

STAFF RECOMMENDATION:

The Drinking Water Board authorize an increase in the original funding to the Town of Trenton to a $732,000 construction loan at 1.0% interest for 30 years and a grant of $731,000. The funding is contingent on the Towns of Newton and Clarkston establishing inter-local agreements with Trenton Town, establishing their equal responsibility in the annual loan repayment.

Agenda Item 4(C)(ii)(a)

Echo Mutual
Presented to the Drinking Water Board
May 13, 2016

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN
AUTHORIZATION

APPLICANT'S REQUEST:

Echo Mutual Water System is requesting $35,857 to address deficiencies with their springs. They scored 7.9 points on the project priority list.

STAFF COMMENTS:

Echo Mutual is currently under a Corrective Action Plan with the Division of Drinking Water to address significant deficiencies related to five of their existing springs. The project includes replacing the spring boxes, correcting the overflow and drain discharge deficiencies and removing deep rooted vegetation from the spring collection areas for Springs #1 through #5.

The local MAGI for Echo Mutual is $49,195, which is 122% of the State MAGI. The average residential water bill for Echo is approximately $26 per month, which is .63% of local MAGI. With a full loan at the calculated interest rate of 3.39% for 20 years, Echo would need to increase their average water bill to approximately $19/ERC which is .47% of their local MAGI. For clarification, the calculated water rate decrease with a full loan because the most recent annual operation and maintenance costs were less than typical years and the system collects revenue, through their water bill, to help fund water system repairs that are needed. The closing cost for a loan would be substantial in comparison to the cost of the project and the time it would take to meet the bonding requirements would be lengthy. The health risks of having the springs compromised is very high and staff feels that all of these factors should be considered for determining grant qualification.

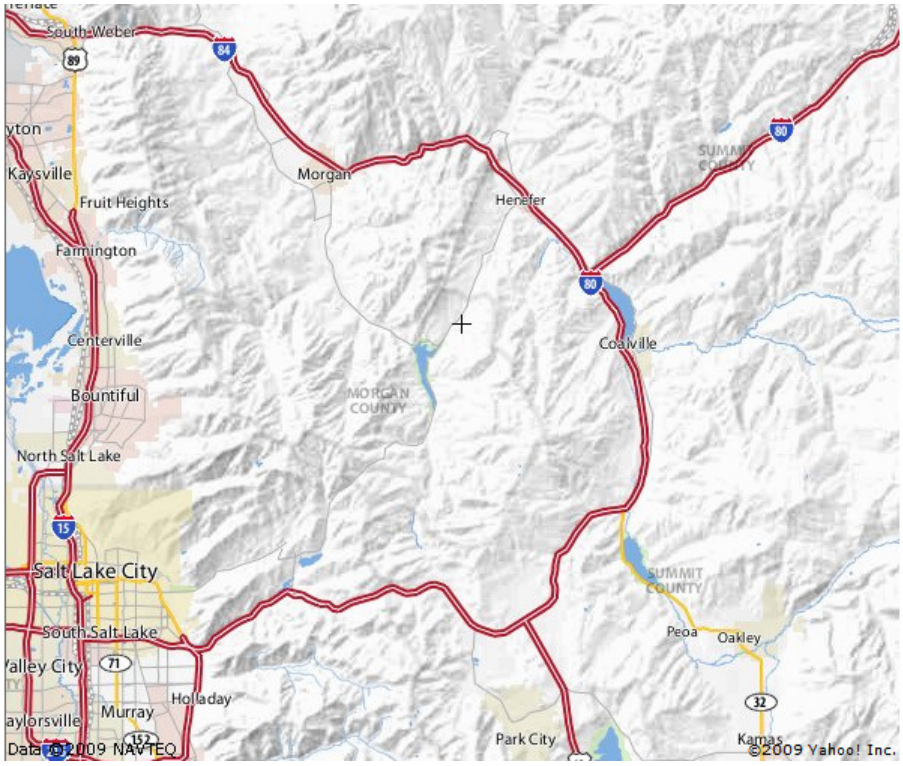
FINANCIAL ASSISSTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a Hardship Grant of $35,857 to Echo Mutual Water System.

APPLICANT'S LOCATION:

Echo Mutual Water System is located in Summit County.

MAP OF APPLICANT'S LOCATION:



PROJECT DESCRIPTION:

The spring boxes will be replaced for Springs #1 through #5. The new spring boxes will be concrete with a rise of 24 inches from the ground and will be fitted with aluminum, shoe box style hatches. The air vents will be fitted with No. 14 mesh screens and the overflow lines will be modified to allow for an approved air gap and No. 4 mesh screens. The existing deep rooted vegetation will be removed from the collection areas.

POPULATION GROWTH:

According to the Governor's Office of Planning and Budget, Summit County is estimated to grow at an annual average rate of change of approximately 3.2% through the year 2030. The applicant suggests a lower rate shown below.

	Year	Population
Current:	2016	50
Projected:	2030	78

IMPLEMENTATION SCHEDULE:

Apply to DWB for Construction Funds:	March 2016
SRF Committee Conference Call:	April 2016
DWB Funding Authorization:	May 2016
Complete Design:	March 2016
Plan Approval:	March 2016
Advertise for Bids:	May 2016
Bid Opening:	May 2016
Loan Closing:	May 2016
Begin Construction:	June 2016
Complete Construction:	July 2016
Receive Operating Permit:	August 2016

COST ESTIMATE:

Engineering	$6,000
Construction	$27,143
Contingency	$2,714
Total Project Cost	**$35,857**

COST ALLOCATION:

The cost allocation proposed for the project is shown below.

Funding Source	Cost Sharing	Percent of Project
DWB Grant	$35,857	100%
Total Amount	$35,857	100%

APPLICANT:	Echo Mutual Water Company P.O. Box 7 Echo, Utah 84024 Telephone: 435-336-2710
PRESIDING OFFICIAL & CONTACT PERSON:	William Kory Staples, President P.O. Box 7 Echo, Utah 84024 Telephone: 435-336-2710
TREASURER/RECORDER:	Leah Judd Telephone: 435-336-2443
CONSULTING ENGINEER:	Scott Kettle, P.E. Horrocks Engineers. 728 West 100 South #2 Heber City, Utah 84032 Telephone: (435) 654-2226 Email: skettle@horrocks.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Echo Mutual
COUNTY: Summit
PROJECT DESCRIPTION: Spring Box repair

FUNDING SOURCE: Federal SRF

0 % Loan & 100 % P.F.

ESTIMATED POPULATION:	50	NO. OF CONNECTIONS:	28 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$25.76 *			PROJECT TOTAL:	$35,857
CURRENT % OF AGI:	0.63%	FINANCIAL PTS:	20	LOAN AMOUNT:	$0
ESTIMATED MEDIAN AGI:	$49,195			PRINC. FORGIVE.:	$35,857
STATE AGI:	$40,489			TOTAL REQUEST:	$35,857
SYSTEM % OF STATE AGI:	122%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	3.86%		3.39%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.86%		3.39%
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:	$3,346.00	$3,346.00		$3,346.00
OTHER DEBT + COVERAGE:	$0.00	$0.00		$0.00
REPLACEMENT RESERVE ACCOUNT:	$167.30	$167.30		$167.30
ANNUAL EXPENSES PER CONNECTION:	$125.48	$125.48		$125.48
TOTAL SYSTEM EXPENSES	$3,513.30	$3,513.30		$3,513.30
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$10.46	$10.46		$10.46
% OF ADJUSTED GROSS INCOME:	0.26%	0.26%		0.26%

* Equivalent Residential Connections

DEQ | Drinking Water

Public Water System Custom Report

Echo Mutual Water System | PWS ID: UTAH22003 | Rating: Corrective Action | 05/07/2015

Status: Active

Contacts

Type: Administrative Contact
Name: KORY STAPLES
Office: 435-336-2710
Emergency:
Email: k_staples2003@yahoo.com

Site Information

Address: PO BOX 7 , ECHO, UT 84024
Phone: 435-336-2710
County: SUMMIT COUNTY
System Type: Community
Population: 70

Site Updates

Last Inventory Update: 02/10/2016
Last Surveyor Update: 09/18/2014
Surveyor: MICHAEL S MOSS
Operating Period: 1/1 - 12/31
Last IPS Update: 05/02/2016 07:00:00

Consumptive Use Zone

Irrigation Zone: 2
Date: 02/15/2013

IPS SUMMARY

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certifications	Significant Deficiency Violations
265	100	0	-10	175

PHYSICAL FACILITY POINTS

Code	Description	Severity	Points Effective	Details
L014	NO SPRING COLLECTION BOX PRESENT	REC	0	View Details (1)
M001	CURRENT EMERGENCY RESPONSE PROGRAM	REC	-10	View Details (1)
M003	CCC-LACKS LOCAL AUTHORITY	MIN	10	View Details (1)
M004	CCC-NO ANNUAL PUBLIC EDUCATION OR AWARENESS	MIN	10	View Details (1)
M006	CCC-LACKS WRITTEN RECORDS	MIN	10	View Details (1)
M007	CCC-LACKS ON-GOING ENFORCEMENT PLAN	MIN	10	View Details (1)
SS01	SPRING LACKS A PERMANENT FLOW MEASURING DEVICE	MIN	5	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
WS006 HAYES SPRING		Active	10/30/2009		5

Code	Description	Severity	Points Effective	Details
SS04	SPRING BOX LACKS PROPER OVERFLOW/DRAIN LACKS PROPER SCREEN	MIN	5	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
WS001 SPRING #1		Active	10/18/2006		5

Code	Description	Severity	Points Effective	Details
SS12	SPRING BOX LACKS RAISED ACCESS ENTRY	MIN	5	Hide Details (5)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed

WS001 SPRING #1	THE ACCESS IS 2 INCHES ABPOVE THE PLATE LID	Active	10/30/2009		5
WS002 SPRING #2		Active	10/30/2009		5
WS003 SPRING #3	THE ACCESS PLATE IS 2 INCHES ABOVE THE PLATE LID	Active	10/30/2009		5
WS004 SPRING #4	THE ACCESS IS 2 INCHES ABOVE THE PLATE LID	Active	09/18/2014		5

SS14	SPRING BOX DRAIN/OVERFLOW LACKS PROPER FREE FALL	MIN	5	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
WS006 HAYES SPRING		Active	10/18/2006		5

SS20	UNSEALED OPENING IN SPRING BOX	SIG	50	Hide Details (5)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
WS001 SPRING #1	THE CONSTRUCTION IS A CONCRETE BOX HAVING A FABRICATED PLATE LID WITH AN ACCESS. THE SEAL IS BITUMEN MASTIC WHICH HAS LEFT VOIDS. THE ACCESS IS 2 INCHES APOVE THE PLACE LID. THE SOIL AROUND ALL BOXES NEEDS TO BE DUG OUT TO ENSURE 18 INCHES	Active	09/18/2014		50
WS002 SPRING #2	THE CONSTRUCTION IS A CONCRETE BOX HAVING A FABRICATED PLATE LID WITH AN ACCESS. THE SEAL IS BITUMEN MASTIC WHICH HAS LEFT VOIDS. THE ACCESS IS 2 INCHES APOVE THE PLACE LID. THE SOIL AROUND ALL BOXES NEEDS TO BE DUG OUT TO ENSURE 18 INCHES	Active	09/18/2014		50
WS003 SPRING	THE CONSTRUCTION IS A CONCRETE BOX HAVING A FABRICATED PLATE LID WITH AN ACCESS. THE SEAL IS BITUMEN MASTIC WHICH HAS LEFT VOIDS.	Active	09/18/2014		50

#3	THE ACCESS IS 2 INCHES APOVE THE PLACE LID. THE SOIL AROUND ALL BOXES NEEDS TO BE DUG OUT TO ENSURE 18 INCHES			
SSL2	VENT NOT PRESENT BUT RECOMMENDED	REC	0	View Details (6)
V020	STORAGE FACILITY SHOWS MILD DETERIORATION	REC	0	View Details (1)

Total Effective Points: 100

THE CONSTRUCTION IS A CONCRETE BOX HAVING A FABRICATED PLATE LID WITH AN ACCESS. THE SEAL IS BITUMEN MASTIC WHICH HAS LEFT VOIDS.

TREATMENT TECHNIQUE VIOLATIONS

ID	Violation	Code	Deficiency	Determined	Points Effective
WS001	45 FAILURE ADDRESS DEFICIENCY (GWR)	SS20	UNSEALED OPENING IN SPRING BOX	03/31/2015	35
WS002	45 FAILURE ADDRESS DEFICIENCY (GWR)	SS20	UNSEALED OPENING IN SPRING BOX	03/31/2015	35
WS003	45 FAILURE ADDRESS DEFICIENCY (GWR)	SS20	UNSEALED OPENING IN SPRING BOX	03/31/2015	35
WS004	45 FAILURE ADDRESS DEFICIENCY (GWR)	SS20	UNSEALED OPENING IN SPRING BOX	03/31/2015	35
WS005	45 FAILURE ADDRESS DEFICIENCY (GWR)	SS20	UNSEALED OPENING IN SPRING BOX	03/31/2015	35

Total Effective Points: 175

OPERATOR CERTIFICATION POINTS

Type	Level Required	Highest Certificate	Points Effective
Distribution	Small System	Dist 1	-10
Treatment			0

Total Effective Points: -10

IPS COMPLIANCE SCHEDULES

Type	Required Activities	Severity	Created	Due
Corrective Action Plan	OPERATING PERMIT OBTAINED	SIG	05/07/2015	09/30/2015
Corrective Action Plan	PLANS AND SPECIFICATIONS SUBMITTED		05/07/2015	06/30/2015
Corrective Action Plan	OPERATING PERMIT OBTAINED	SIG	05/07/2015	09/30/2015
Corrective Action Plan	OPERATING PERMIT OBTAINED	SIG	05/07/2015	09/30/2015
Corrective Action Plan	OPERATING PERMIT OBTAINED	SIG	05/07/2015	09/30/2015
Corrective Action Plan	OPERATING PERMIT OBTAINED	SIG	05/07/2015	09/30/2015
LCNT	Submit Lead/Copper Certification Notice to DDW		06/01/2014	12/29/2014

Agenda Item 4(C)(ii)(b)

Corinne
Presented to the Drinking Water Board
May 13, 2016

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN

APPLICANT'S REQUEST:

Corinne has a project consisting of a Radium 228 Filter System for their well source, spring rehabilitation, and transmission line. The cost of the project is estimated at $555,500. They scored 20.6 points on the project priority list.

STAFF COMMENTS:

The local MAGI for Corinne is $41,329 (99% of the state MAGI), but their after project water bill is 1.79% of the local MAGI. Therefore they do qualify as a hardship community to receive principle forgiveness.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board to authorize $555,500 with an interest rate of 2.85% for 20 years and $113,500 in Principle Forgiveness. The repayable amount would be $442,000. Conditions include that they resolve all issues on their compliance report.

APPLICANT'S LOCATION:

Corinne is located in Box Elder County approximately 6 miles west of Brigham City.

MAP OF APPLICANT'S LOCATION:

PROJECT DESCRIPTION:

The project consists of a Radium 228 Filter System for their well source, spring rehabilitation, and 1100-feet transmission line from their spring.

POPULATION GROWTH:

According to their application, Corinne is expected to grow at an average annual rate of 1% over the next 25 years. Projected populations and number of connections are shown in the table below:

Year	Population	Connections
2020	742	302
2025	777	304
2030	812	306
2035	847	308
2040	882	310

IMPLEMENTATION SCHEDULE:

FA Committee Conference Call:	Apr 2016
DWB Funding Authorization:	May 2016
Complete Design:	May 2016
Plan Approval:	June 2016
Advertise for Bids:	Jun 2016
Begin Construction:	July 2016
Complete Construction:	Oct? 2016

COST ESTIMATE:

Legal – Bonding, Admin	$20,000
Engineering- Plan, Design, CMS	$68,000
Construction	$425,000
Contingency	$42,500
DDW Admin Fee	$0
Total Project Cost	**$555,500**

COST ALLOCATION:

The cost allocation proposed for the project is shown below:

Funding Source	Cost Sharing	Percent of Project
DWB Loan (2.85%, 20-yr)	$442,000	80%
DWB Principle Forgiveness	$113,500	20%
Self-Contribution	$0	0%

ESTIMATED ANNUAL COST OF WATER SERVICE:

Operation and Maintenance	$110,997
Existing DW Debt Service	$67,927
DDW Debt Service (2.85%, 20 yrs):	$29,298
DDW Debt Reserve (10%):	$2,929
DDW Coverage (15%):	n/a
Replacement Reserve Account (5%):	$9,731
Annual Cost/ERC:	$736
Monthly Cost/ERC:	$61.36
Cost as % MAGI:	1.78%

CONTACT INFORMATION:

APPLICANT:	Corinne City 2420 N 4000 W Corinne, UT 84307 435-744-5566
PRESIDING OFFICIAL & CONTACT PERSON:	Brett Merkley Mayor 4278 Corinne Cutoff Corinne, UT 84307 435-730-1407 brettmerkley@msn.com
CONSULTING ENGINEER:	Chris Wight Hansens and Associates 538 N Main Brigham City, UT 84302 435-723-3491 chrisw@haies.net
RECORDER:	Kendra Norman 435-744-5566 kendra@corinnecity.com
FINANCIAL CONSULTANT:	n/a
CITY ATTORNEY:	n/a
BOND ATTORNEY:	n/a

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Corinne
FUNDING SOURCE: Federal SRF
COUNTY: Box Elder
PROJECT DESCRIPTION: Radium 228 Filter System for their well source, spring rehabilitation, and transmission line

80 % Loan & 20 % P.F.

ESTIMATED POPULATION:	690	NO. OF CONNECTIONS:	300 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$59.45 *			PROJECT TOTAL:	$555,500
CURRENT % OF AGI:	1.73%	FINANCIAL PTS:	34	LOAN AMOUNT:	$442,000
ESTIMATED MEDIAN AGI:	$41,329			PRINC. FORGIVE.:	$113,500
STATE AGI:	$41,923			TOTAL REQUEST:	$555,500
SYSTEM % OF STATE AGI:	99%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	3.86%		2.85%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	20	20		20
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.86%		2.85%
REQUIRED DEBT SERVICE:	$22,100.00	$32,121.23		$29,298.86
*PARTIAL COVERAGE (15%):	$0.00	$0.00		$0.00
*ADD. COVERAGE AND RESERVE (10%):	$2,210.00	$3,212.12		$2,929.89
ANNUAL NEW DEBT PER CONNECTION:	$81.03	$117.78		$107.43
O & M + FUNDED DEPRECIATION:	$110,997.00	$110,997.00		$110,997.00
OTHER DEBT + COVERAGE:	$67,927.50	$67,927.50		$67,927.50
REPLACEMENT RESERVE ACCOUNT:	$9,371.95	$9,873.01		$9,731.89
ANNUAL EXPENSES PER CONNECTION:	$627.65	$629.33		$628.85
TOTAL SYSTEM EXPENSES	$212,606.45	$224,130.86		$220,885.14
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$59.06	$62.26		$61.36
% OF ADJUSTED GROSS INCOME:	1.71%	1.81%		1.78%

* Equivalent Residential Connections

R309-700-5

Corinne
Box Elder
March 30, 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	X
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	
	$1,852		
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	
D. 96 to 110% of State Median AGI		9	X
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	
	99%		
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	
	1.78%		
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		34	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED		100	

Corinne

PROPOSED BOND REPAYMENT SCHEDULE

80 % Loan & 20 % P.F.

PRINCIPAL	$442,000.00	ANTICIPATED CLOSING DATE	15-Aug-16
INTEREST	2.85%	FIRST P&I PAYMENT DUE	15-Aug-18
TERM	20	REVENUE BOND	
NOMIN. PAYMENT	$29,298.86	PRINC. FORGIVE.:	$113,500.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT		PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	$442,000.00		$12,597.00	*	$0.00	$12,597.00	$442,000.00	0
2018	$442,000.00		$29,597.00		$17,000.00	$12,597.00	$425,000.00	1
2019	$425,000.00		$29,112.50		$17,000.00	$12,112.50	$408,000.00	2
2020	$408,000.00		$29,628.00		$18,000.00	$11,628.00	$390,000.00	3
2021	$390,000.00		$29,115.00		$18,000.00	$11,115.00	$372,000.00	4
2022	$372,000.00		$29,602.00		$19,000.00	$10,602.00	$353,000.00	5
2023	$353,000.00		$29,060.50		$19,000.00	$10,060.50	$334,000.00	6
2024	$334,000.00		$29,519.00		$20,000.00	$9,519.00	$314,000.00	7
2025	$314,000.00		$28,949.00		$20,000.00	$8,949.00	$294,000.00	8
2026	$294,000.00		$29,379.00		$21,000.00	$8,379.00	$273,000.00	9
2027	$273,000.00		$28,780.50		$21,000.00	$7,780.50	$252,000.00	10
2028	$252,000.00		$29,182.00		$22,000.00	$7,182.00	$230,000.00	11
2029	$230,000.00		$29,555.00		$23,000.00	$6,555.00	$207,000.00	12
2030	$207,000.00		$28,899.50		$23,000.00	$5,899.50	$184,000.00	13
2031	$184,000.00		$29,244.00		$24,000.00	$5,244.00	$160,000.00	14
2032	$160,000.00		$29,560.00		$25,000.00	$4,560.00	$135,000.00	15
2033	$135,000.00		$29,847.50		$26,000.00	$3,847.50	$109,000.00	16
2034	$109,000.00		$29,106.50		$26,000.00	$3,106.50	$83,000.00	17
2035	$83,000.00		$29,365.50		$27,000.00	$2,365.50	$56,000.00	18
2036	$56,000.00		$29,596.00		$28,000.00	$1,596.00	$28,000.00	19
2037	$28,000.00		$28,798.00		$28,000.00	$798.00	$0.00	20
			$598,493.50		$442,000.00	$156,493.50		

*Interest Only Payment

Corinne

DWB Loan Terms		
Local Share (total):	$	-
Other Agency Funding:	$	-
DWB Grant Amount:	$	113,500
DWB Loan Amount:	$	442,000
DWB Loan Term:		20
DWB Loan Interest:		**2.85%**
DWB Loan Payment:	$	29,299

DW Expenses (Estimated)		
Proposed Facility Capital Cost:	$	555,500
Existing Facility O&M Expense:	$	77,497
Proposed Facility O&M Expense:	$	77,497
O&M Inflation Factor:		**1.0%**
Existing Debt Service:	$	54,342

DW Revenue Sources (Projected)		
Beginning Cash:	$	-
Existing Customers (ERC):		300
Projected Growth Rate:		**1.0%**
Impact Fee/Connection Fee:	$	5,000
Current Monthly User Charge:	$	59.45
Needed Average Monthly User Charge:	$	61.36

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%	3	300	214,023	15,000	-	229,023	**-**	**-**	442,000	-	-	54,342	77,497	131,839	-
1	1.0%	3	303	223,094	15,000	-	238,094	**29,597**	**2,930**	425,000	17,000	12,597	54,342	77,497	164,366	1.91
2	1.0%	3	306	225,303	15,000	-	240,303	**29,113**	**2,930**	408,000	17,000	12,113	54,342	78,272	164,656	1.94
3	1.0%	3	309	227,512	15,000	-	242,512	**29,628**	**2,930**	390,000	18,000	11,628	54,342	79,055	165,955	1.95
4	1.0%	3	312	229,721	15,000	-	244,721	**29,115**	**2,930**	372,000	18,000	11,115	54,342	79,845	166,232	1.98
5	1.0%	3	315	231,929	15,000	-	246,929	**29,602**	**2,930**	353,000	19,000	10,602	54,342	80,644	167,518	1.98
6	1.0%	3	318	234,138	15,000	-	249,138	**29,061**	**2,930**	334,000	19,000	10,061	54,342	81,450	167,783	2.01
7	1.0%	4	322	237,083	20,000	-	257,083	**29,519**	**2,930**	314,000	20,000	9,519	54,342	82,265	169,056	2.08
8	1.0%	3	325	239,292	15,000	-	254,292	**28,949**	**2,930**	294,000	20,000	8,949	54,342	83,087	169,308	2.06
9	1.0%	3	328	241,501	15,000	-	256,501	**29,379**	**2,930**	273,000	21,000	8,379	54,342	83,918	170,569	2.06
10	1.0%	3	331	243,710	15,000	-	258,710	**28,781**	**2,930**	252,000	21,000	7,781	54,342	84,757	170,810	2.09
11	1.0%	4	335	246,655	20,000	-	266,655	**29,182**		230,000	22,000	7,182	54,342	85,605	169,129	2.17
12	1.0%	3	338	248,864	15,000	-	263,864	**29,555**		207,000	23,000	6,555	54,342	86,461	170,358	2.11
13	1.0%	3	341	251,073	15,000	-	266,073	**28,900**		184,000	23,000	5,900	54,342	87,326	170,567	2.15
14	1.0%	4	345	254,018	20,000	-	274,018	**29,244**		160,000	24,000	5,244	54,342	88,199	171,785	2.22
15	1.0%	3	348	256,227	15,000	-	271,227	**29,560**		135,000	25,000	4,560	54,342	89,081	172,983	2.17
16	1.0%	4	352	259,172	20,000	-	279,172	**29,848**		109,000	26,000	3,848	54,342	89,972	174,161	2.25
17	1.0%	3	355	261,381	15,000	-	276,381	**29,107**		83,000	26,000	3,107	54,342	90,871	174,320	2.22
18	1.0%	4	359	264,326	20,000	-	284,326	**29,366**		56,000	27,000	2,366	54,342	91,780	175,488	2.30
19	1.0%	3	362	266,535	15,000	-	281,535	**29,596**		28,000	28,000	1,596	54,342	92,698	176,636	2.25
20	1.0%	4	366	269,480	20,000	-	289,480	**28,798**		-	28,000	798	54,342	93,625	176,765	2.36
									Total Paid in Debt Service =		442,000	143,897				

DEQ | Drinking Water

Public Water System Custom Report

Corinne City | PWS ID: UTAH02005 | Rating: Approved | 12/04/1995

Status: Active

Contacts

Type: Administrative Contact
Name: KELLY T NICHOLAS
Office: 435-744-5566
Emergency:
Email: KTNCCC@HOTMAIL.COM

Site Information

Address: PO BOX 118 , CORINNE, UT 84307
Phone: 435-744-5566
County: BOX ELDER COUNTY
System Type: Community
Population: 690

Site Updates

Last Inventory Update: 08/15/2014
Last Surveyor Update: 07/29/2014
Surveyor: TAMMY NORTH
Operating Period: 1/1 - 12/31
Last IPS Update: 05/02/2016 07:00:00

Consumptive Use Zone

Irrigation Zone: 4
Date: 02/15/2013

IPS SUMMARY

Total IPS Points	Admin & Physical Facilities	Quality & Monitoring	Operator Certifications	Significant Deficiency Violations
23	-7	30	0	0

PHYSICAL FACILITY POINTS

Code	Description	Severity	Points Effective	Details
M001	CURRENT EMERGENCY RESPONSE PROGRAM	REC	-10	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
			07/29/2014		-10

Code	Description	Severity	Points Effective	Details
V010	STORAGE FACILITY LACKS PROPER SHOEBOX ACCESS	MIN	3	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
ST001 SMALL TANK		Active	07/29/2014		3

Total Effective Points: -7

CHEMICAL MONITORING RULE VIOLATIONS

Facility	Violation No	Period	Code	Violation Type	Analyte Group	Determined	Seasonality	Points Effective
WS003	2015-4104532	03/18/2015 - 03/18/2017	02	MCL, AVERAGE	RRAD	03/18/2015	S	30

Total Effective Points: 30

IPS COMPLIANCE SCHEDULES

Type	Required Activities	Severity	Created	Due
Bilateral Compliance Agreement	DELIVER AND PROOF OF PN		03/18/2015	06/30/2015
Bilateral Compliance Agreement	DELIVER AND PROOF OF PN		03/18/2015	09/30/2015
Bilateral Compliance Agreement	INSTALL TREATMENT		03/18/2015	03/01/2017
Bilateral Compliance Agreement	ENGR SUBMIT PLANS AND SPECS		03/18/2015	12/31/2015
Bilateral Compliance Agreement	DELIVER AND PROOF OF PN		03/18/2015	12/31/2015

Agenda Item 4(C)(ii)(c)

The Town of Springdale
Presented to the Drinking Water Board
May 13, 2016

DRINKING WATER BOARD
BOARD PACKET FOR CONSTRUCTION LOAN
AUTHORIZATION

APPLICANT'S REQUEST:

The Town of Springdale is requesting financial assistance in the amount of $5,508,350 to construct a new surface water treatment plant and refinance an outstanding Division of Water Resources Loan with a balance of $561,000. The total cost of the project, including the outstanding balance of the existing loan, is expected to be $5,654,000 and they will contribute $145,650 towards the project. They scored 72.3 points on the project priority list.

STAFF COMMENTS:

The Drinking Water Board authorized a $19,000 planning grant to create a Master Plan in 2008, a $2M loan and $769k grant for a tank and waterline project in 2010 and a $40,000 grant to update their Master Plan in 2015. The need for a new surface water treatment plant was identified in the 2015 Master Plan. It will include a new treatment plant with increased capacity and solution for current system deficiencies.

The local MAGI for Springdale is $30,483, which is 75% of the State MAGI. The average residential water bill for Springdale, including an average secondary irrigation bill of $4.65, is approximately $46 per month, which is 1.80% of local MAGI. With a full loan at the calculated interest rate of 2.11% for 20 years, Springdale would need to increase their average water bill to approximately $89/ERC which is 3.49% of their local MAGI. Based on this information, Springdale qualifies for additional subsidization.

The following options were evaluated:

	Total Funding	Principal Forgiveness	Loan	Term	Interest Rate	Water Bill	% of Local MAGI
Option 1	$5,508,350	$1,101,350	$4,407,000	20 yrs	2.11%	$82.39	3.24%
Option 2	$5,508,350	$1,652,350	$3,856,000	30 yrs	1.50%	$72.32	2.85%
Option 3	$5,508,350	$2,203,356	$3,305,000	30 yrs	1.0%	$69.78	2.75%
Option 4	$5,508,350	$1,652,350	$3,856,000	30 yrs	1.25%	$71.83	2.83%

Option 4 was added after the Financial Assistance Committee recommendation was made. Springdale has requested that this option be considered. The City provided additional information demonstrating their commitment and support for a collaboration

between the Towns of Springdale and Rockville for culinary water treatment and supply. This demonstrates a regionalization plan, which qualifies them for further reduction in interest rate.

FINANCIAL ASSISTANCE COMMITTEE RECOMMENDATION:

The Drinking Water Board authorize a loan of $5,508,350 at 1.50% interest for 30 years with $1,652,350 in principal forgiveness to the Town of Springdale.

APPLICANT'S LOCATION:

Springdale is located in Washington County, 40 miles east of St George.

MAP OF APPLICANT'S LOCATION:

PROJECT DESCRIPTION:

The 2015 Culinary Water Master Plan evaluated the need and alternatives to address the deficiencies in their current surface water treatment plant. There are numerous operational challenges and deficiencies with the existing treatment plant. One of the primary concerns is that the current facility only includes a single train or pathway for water to be treated, with no redundancy. There are no other sources which can be immediately utilized, if the plant needed to be taken out of service for maintenance, which is a major concern without having redundant treatment trains in their plant. Additionally, incoming turbidity from the Virgin River has been a challenge with their current plant configuration.

A conventional treatment package plant with at least two trains is planned to be installed. This would require at least two skids to be installed to run in parallel. Additionally, pretreatment will be installed to reduce incoming turbidity. A Granular Activated Carbon process will be added to the end of the treatment plant to address complaints regarding odor and taste of the Town's water. The current treatment plant was constructed in the 1980's and experiences numerous problems related to aging components.

POPULATION GROWTH:

According to the Utah State Governor's Office of Planning and Budgeting, the anticipated growth rate for the Town of Springdale is approximately 2.5% per year over the next 20 years

	Year	Population
Current:	2016	572
Projected:	2040	1,399

IMPLEMENTATION SCHEDULE:

Apply to DWB for Construction Funds:	March 2016
SRF Committee Conference Call:	April 2016
DWB Funding Authorization:	May 2016
Advertise Environmental Assessment:	August 2016
Complete Design:	February 2017
Plan Approval:	February 2017
Advertise for Bids:	February 2017
Bid Opening:	March 2017
Loan Closing:	March 2017
Begin Construction:	April 2017
Complete Construction:	November 2017
Receive Operating Permit:	December 2017

COST ESTIMATE:

Legal and Bonding	$16,000
Administrative	$70,000
Environmental	$30,000
Engineering	$685,500
WR Loan Refinance	$561,000
Construction	$3,731,500
Contingency	$560,000
Total Project Cost	**$5,654,000**

COST ALLOCATION:

The cost allocation proposed for the project is shown below.

Funding Source	Cost Sharing	Percent of Project
DWB Loan (1.5%, 30-yrs)	$3,856,000	68%
DWB Grant	$1,652,350	29%
Local Contribution	$145,650	3%
Total Amount	$5,654,000	100%

ESTIMATED ANNUAL COST OF WATER SERVICE:

Operation and Maintenance plus Depreciation: $565,246
Existing DW Debt Service: $82,500
Replacement Reserve Account: $39,590.34
Annual Cost/ERC: $820.89
Monthly Cost/ERC: $72.32/ERC (includes irrigation bill)
Cost as % MAGI: 2.85%

APPLICANT:	Town of Springdale 118 Lion Blvd. PO Box 187 Springdale UT 84767 Telephone: (435) 772-3434
PRESIDING OFFICIAL & CONTACT PERSON:	Stan Smith Mayor 118 Lion Blvd. PO Box 187 Springdale UT 84767 Telephone: (435) 772-3434 Email: Springdale@infowest.com
CONSULTING ENGINEER:	Dustyn Shaffer Sunrise Engineering 11 North 300 West Washington, UT 84780 (435) 652-8450 dshaffer@sunrise-eng.com
RECORDER:	Dawn Brecke (435) 772-3434 dawnsanders@infowest.com

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Springdale
COUNTY: Washington
PROJECT DESCRIPTION: Treatment Plant

FUNDING SOURCE: Federal SRF

70 % Loan & 30 % P.F.

ESTIMATED POPULATION:	572	NO. OF CONNECTIONS:	1064 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$45.66 *			PROJECT TOTAL:	$5,654,000
CURRENT % OF AGI:	1.80%	FINANCIAL PTS:	53	LOAN AMOUNT:	$3,856,000
ESTIMATED MEDIAN AGI:	$30,483			PRINC. FORGIVE.:	$1,652,350
STATE AGI:	$40,489			TOTAL REQUEST:	$5,508,350
SYSTEM % OF STATE AGI:	75%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	3.86%		1.50%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.86%		1.50%
REQUIRED DEBT SERVICE:	$128,533.33	$219,217.91		$160,560.71
*PARTIAL COVERAGE (15%):	$0.00	$0.00		$0.00
*ADD. COVERAGE AND RESERVE (10%):	$12,853.33	$21,921.79		$16,056.07
ANNUAL NEW DEBT PER CONNECTION:	$132.88	$226.64		$165.99
O & M + FUNDED DEPRECIATION:	$565,246.00	$565,246.00		$565,246.00
OTHER DEBT + COVERAGE:	$82,500.00	$82,500.00		$82,500.00
REPLACEMENT RESERVE ACCOUNT:	$37,988.97	$42,523.20		$39,590.34
ANNUAL EXPENSES PER CONNECTION:	$644.49	$648.75		$645.99
TOTAL SYSTEM EXPENSES	$827,121.63	$931,408.89		$863,953.12
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$69.43	$77.60		$72.32
% OF ADJUSTED GROSS INCOME:	2.73%	3.05%		2.85%

* Equivalent Residential Connections

R309-700-5

Springdale
Washington
March 17, 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	X
G. Over $10,000		0	
	$5,314		
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	
	75%		
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	X
e. Less than 2% of project funds		0	
	2.6%		
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	
	2.85%		
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		53	
TOTAL POSSIBLE POINTS FOR FINANCIAL NEED		100	

Springdale

PROPOSED BOND REPAYMENT SCHEDULE

70 % Loan & 30 % P.F.

PRINCIPAL	$3,856,000.00	ANTICIPATED CLOSING DATE	01-Mar-17
INTEREST	1.50%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	$160,560.71	PRINC. FORGIVE.:	$1,652,350.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT		PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	$3,856,000.00		($9,640.00)	*	$0.00	($9,640.00)	$3,856,000.00	0
2018	$3,856,000.00		$160,840.00		$103,000.00	$57,840.00	$3,753,000.00	1
2019	$3,753,000.00		$160,295.00		$104,000.00	$56,295.00	$3,649,000.00	2
2020	$3,649,000.00		$160,735.00		$106,000.00	$54,735.00	$3,543,000.00	3
2021	$3,543,000.00		$160,145.00		$107,000.00	$53,145.00	$3,436,000.00	4
2022	$3,436,000.00		$160,540.00		$109,000.00	$51,540.00	$3,327,000.00	5
2023	$3,327,000.00		$160,905.00		$111,000.00	$49,905.00	$3,216,000.00	6
2024	$3,216,000.00		$160,240.00		$112,000.00	$48,240.00	$3,104,000.00	7
2025	$3,104,000.00		$160,560.00		$114,000.00	$46,560.00	$2,990,000.00	8
2026	$2,990,000.00		$160,850.00		$116,000.00	$44,850.00	$2,874,000.00	9
2027	$2,874,000.00		$160,110.00		$117,000.00	$43,110.00	$2,757,000.00	10
2028	$2,757,000.00		$160,355.00		$119,000.00	$41,355.00	$2,638,000.00	11
2029	$2,638,000.00		$160,570.00		$121,000.00	$39,570.00	$2,517,000.00	12
2030	$2,517,000.00		$160,755.00		$123,000.00	$37,755.00	$2,394,000.00	13
2031	$2,394,000.00		$160,910.00		$125,000.00	$35,910.00	$2,269,000.00	14
2032	$2,269,000.00		$161,035.00		$127,000.00	$34,035.00	$2,142,000.00	15
2033	$2,142,000.00		$160,130.00		$128,000.00	$32,130.00	$2,014,000.00	16
2034	$2,014,000.00		$160,210.00		$130,000.00	$30,210.00	$1,884,000.00	17
2035	$1,884,000.00		$160,260.00		$132,000.00	$28,260.00	$1,752,000.00	18
2036	$1,752,000.00		$160,280.00		$134,000.00	$26,280.00	$1,618,000.00	19
2037	$1,618,000.00		$160,270.00		$136,000.00	$24,270.00	$1,482,000.00	20
2038	$1,482,000.00		$160,230.00		$138,000.00	$22,230.00	$1,344,000.00	21
2039	$1,344,000.00		$161,160.00		$141,000.00	$20,160.00	$1,203,000.00	22
2040	$1,203,000.00		$161,045.00		$143,000.00	$18,045.00	$1,060,000.00	23
2041	$1,060,000.00		$160,900.00		$145,000.00	$15,900.00	$915,000.00	24
2042	$915,000.00		$160,725.00		$147,000.00	$13,725.00	$768,000.00	25
2043	$768,000.00		$160,520.00		$149,000.00	$11,520.00	$619,000.00	26
2044	$619,000.00		$160,285.00		$151,000.00	$9,285.00	$468,000.00	27
2045	$468,000.00		$161,020.00		$154,000.00	$7,020.00	$314,000.00	28
2046	$314,000.00		$160,710.00		$156,000.00	$4,710.00	$158,000.00	29
2047	$158,000.00		$160,370.00		$158,000.00	$2,370.00	$0.00	30
			$4,807,320.00		$3,856,000.00	$951,320.00		

*Interest Only Payment

Springdale

DWB Loan Terms		
Local Share (total):	$	145,650
Other Agency Funding:	$	-
DWB Grant Amount:	$	1,652,350
DWB Loan Amount:	$	3,856,000
DWB Loan Term:		30
DWB Loan Interest:		**1.50%**
DWB Loan Payment:	$	160,561

DW Expenses (Estimated)		
Proposed Facility Capital Cost:		#VALUE!
Existing Facility O&M Expense:	$	565,246
Proposed Facility O&M Expense:	$	565,246
O&M Inflation Factor:		**1.0%**
Existing Debt Service:	$	66,000

DW Revenue Sources (Projected)		
Beginning Cash:	$	-
Existing Customers (ERC):		1,064
Projected Growth Rate:		**1.0%**
Impact Fee/Connection Fee:	$	5,000
Current Monthly User Charge:	$	41.01
Needed Average Monthly User Charge:	$	67.67

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%	11	1,064	523,632	55,000	-	578,632	**-**	**-**	3,856,000	-	-	66,000	565,246	631,246	-
1	1.0%	11	1,075	872,885	55,000	-	927,885	**160,840**	**16,056**	3,753,000	103,000	57,840	66,000	565,246	808,142	1.60
2	1.0%	10	1,085	881,005	50,000	-	931,005	**160,295**	**16,056**	3,649,000	104,000	56,295	66,000	570,898	813,250	1.59
3	1.0%	11	1,096	889,937	55,000	-	944,937	**160,735**	**16,056**	3,543,000	106,000	54,735	66,000	576,607	819,399	1.62
4	1.0%	11	1,107	898,869	55,000	-	953,869	**160,145**	**16,056**	3,436,000	107,000	53,145	66,000	582,374	824,575	1.64
5	1.0%	11	1,118	907,800	55,000	-	962,800	**160,540**	**16,056**	3,327,000	109,000	51,540	66,000	588,197	830,793	1.65
6	1.0%	11	1,129	916,732	55,000	-	971,732	**160,905**	**16,056**	3,216,000	111,000	49,905	66,000	594,079	837,040	1.66
7	1.0%	12	1,141	926,476	60,000	-	986,476	**160,240**	**16,056**	3,104,000	112,000	48,240	66,000	600,020	842,316	1.71
8	1.0%	11	1,152	935,408	55,000	-	990,408	**160,560**	**16,056**	2,990,000	114,000	46,560	66,000	606,020	848,636	1.70
9	1.0%	12	1,164	945,152	60,000	-	1,005,152	**160,850**	**16,056**	2,874,000	116,000	44,850	66,000	612,080	854,986	1.73
10	1.0%	11	1,175	954,084	55,000	-	1,009,084	**160,110**	**16,056**	2,757,000	117,000	43,110	66,000	618,201	860,367	1.73
11	1.0%	12	1,187	963,827	60,000	-	1,023,827	**160,355**		2,638,000	119,000	41,355	66,000	624,383	850,738	1.76
12	1.0%	12	1,199	973,571	60,000	-	1,033,571	**160,570**		2,517,000	121,000	39,570	66,000	630,627	857,197	1.78
13	1.0%	12	1,211	983,315	60,000	-	1,043,315	**160,755**		2,394,000	123,000	37,755	66,000	636,933	863,688	1.79
14	1.0%	12	1,223	993,059	60,000	-	1,053,059	**160,910**		2,269,000	125,000	35,910	66,000	643,303	870,213	1.81
15	1.0%	12	1,235	1,002,803	60,000	-	1,062,803	**161,035**		2,142,000	127,000	34,035	66,000	649,736	876,771	1.82
16	1.0%	13	1,248	1,013,359	65,000	-	1,078,359	**160,130**		2,014,000	128,000	32,130	66,000	656,233	882,363	1.87
17	1.0%	12	1,260	1,023,102	60,000	-	1,083,102	**160,210**		1,884,000	130,000	30,210	66,000	662,795	889,005	1.86
18	1.0%	13	1,273	1,033,658	65,000	-	1,098,658	**160,260**		1,752,000	132,000	28,260	66,000	669,423	895,683	1.90
19	1.0%	12	1,285	1,043,402	60,000	-	1,103,402	**160,280**		1,618,000	134,000	26,280	66,000	676,118	902,398	1.89
20	1.0%	13	1,298	1,053,958	65,000	-	1,118,958	**160,270**		1,482,000	136,000	24,270	66,000	682,879	909,149	1.93
									Total Paid in Debt Service =		2,374,000	835,995				

DRINKING WATER BOARD FINANCIAL ASSISTANCE EVALUATION

SYSTEM NAME: Springdale
COUNTY: Washington
PROJECT DESCRIPTION: Treatment Plant

FUNDING SOURCE: Federal SRF

70 % Loan & 30 % P.F.

ESTIMATED POPULATION:	572	NO. OF CONNECTIONS:	1064 *	SYSTEM RATING:	APPROVED
CURRENT AVG WATER BILL:	$45.66 *			PROJECT TOTAL:	$5,654,000
CURRENT % OF AGI:	1.80%	FINANCIAL PTS:	53	LOAN AMOUNT:	$3,856,000
ESTIMATED MEDIAN AGI:	$30,483			PRINC. FORGIVE.:	$1,652,350
STATE AGI:	$40,489			TOTAL REQUEST:	$5,508,350
SYSTEM % OF STATE AGI:	75%				

	@ ZERO % RATE	@ RBBI MKT RATE		AFTER REPAYMENT PENALTY & POINTS
	0%	3.86%		1.25%
SYSTEM				
ASSUMED LENGTH OF DEBT, YRS:	30	30		30
ASSUMED NET EFFECTIVE INT. RATE:	0.00%	3.86%		1.25%
REQUIRED DEBT SERVICE:	$128,533.33	$219,217.91		$154,928.46
*PARTIAL COVERAGE (15%):	$0.00	$0.00		$0.00
*ADD. COVERAGE AND RESERVE (10%):	$12,853.33	$21,921.79		$15,492.85
ANNUAL NEW DEBT PER CONNECTION:	$132.88	$226.64		$160.17
O & M + FUNDED DEPRECIATION:	$565,246.00	$565,246.00		$565,246.00
OTHER DEBT + COVERAGE:	$82,500.00	$82,500.00		$82,500.00
REPLACEMENT RESERVE ACCOUNT:	$37,988.97	$42,523.20		$39,308.72
ANNUAL EXPENSES PER CONNECTION:	$644.49	$648.75		$645.73
TOTAL SYSTEM EXPENSES	$827,121.63	$931,408.89		$857,476.03
TAX REVENUE:	$0.00	$0.00		$0.00
RESIDENCE				
MONTHLY NEEDED WATER BILL:	$69.43	$77.60		$71.81
% OF ADJUSTED GROSS INCOME:	2.73%	3.05%		2.83%

* Equivalent Residential Connections

Springdale

PROPOSED BOND REPAYMENT SCHEDULE

70 % Loan & 30 % P.F.

PRINCIPAL	$3,856,000.00	ANTICIPATED CLOSING DATE	01-Mar-17
INTEREST	1.25%	FIRST P&I PAYMENT DUE	01-Jan-18
TERM	30	REVENUE BOND	
NOMIN. PAYMENT	$154,928.46	PRINC. FORGIVE.:	$1,652,350.00

YEAR	BEGINNING BALANCE	DATE OF PAYMENT	PAYMENT		PRINCIPAL	INTEREST	ENDING BALANCE	PAYM NO.
2017	$3,856,000.00		($8,033.33)	*	$0.00	($8,033.33)	$3,856,000.00	0
2018	$3,856,000.00		$155,200.00		$107,000.00	$48,200.00	$3,749,000.00	1
2019	$3,749,000.00		$154,862.50		$108,000.00	$46,862.50	$3,641,000.00	2
2020	$3,641,000.00		$154,512.50		$109,000.00	$45,512.50	$3,532,000.00	3
2021	$3,532,000.00		$155,150.00		$111,000.00	$44,150.00	$3,421,000.00	4
2022	$3,421,000.00		$154,762.50		$112,000.00	$42,762.50	$3,309,000.00	5
2023	$3,309,000.00		$155,362.50		$114,000.00	$41,362.50	$3,195,000.00	6
2024	$3,195,000.00		$154,937.50		$115,000.00	$39,937.50	$3,080,000.00	7
2025	$3,080,000.00		$154,500.00		$116,000.00	$38,500.00	$2,964,000.00	8
2026	$2,964,000.00		$155,050.00		$118,000.00	$37,050.00	$2,846,000.00	9
2027	$2,846,000.00		$154,575.00		$119,000.00	$35,575.00	$2,727,000.00	10
2028	$2,727,000.00		$155,087.50		$121,000.00	$34,087.50	$2,606,000.00	11
2029	$2,606,000.00		$154,575.00		$122,000.00	$32,575.00	$2,484,000.00	12
2030	$2,484,000.00		$155,050.00		$124,000.00	$31,050.00	$2,360,000.00	13
2031	$2,360,000.00		$154,500.00		$125,000.00	$29,500.00	$2,235,000.00	14
2032	$2,235,000.00		$154,937.50		$127,000.00	$27,937.50	$2,108,000.00	15
2033	$2,108,000.00		$155,350.00		$129,000.00	$26,350.00	$1,979,000.00	16
2034	$1,979,000.00		$154,737.50		$130,000.00	$24,737.50	$1,849,000.00	17
2035	$1,849,000.00		$155,112.50		$132,000.00	$23,112.50	$1,717,000.00	18
2036	$1,717,000.00		$155,462.50		$134,000.00	$21,462.50	$1,583,000.00	19
2037	$1,583,000.00		$154,787.50		$135,000.00	$19,787.50	$1,448,000.00	20
2038	$1,448,000.00		$155,100.00		$137,000.00	$18,100.00	$1,311,000.00	21
2039	$1,311,000.00		$155,387.50		$139,000.00	$16,387.50	$1,172,000.00	22
2040	$1,172,000.00		$154,650.00		$140,000.00	$14,650.00	$1,032,000.00	23
2041	$1,032,000.00		$154,900.00		$142,000.00	$12,900.00	$890,000.00	24
2042	$890,000.00		$155,125.00		$144,000.00	$11,125.00	$746,000.00	25
2043	$746,000.00		$155,325.00		$146,000.00	$9,325.00	$600,000.00	26
2044	$600,000.00		$154,500.00		$147,000.00	$7,500.00	$453,000.00	27
2045	$453,000.00		$154,662.50		$149,000.00	$5,662.50	$304,000.00	28
2046	$304,000.00		$154,800.00		$151,000.00	$3,800.00	$153,000.00	29
2047	$153,000.00		$154,912.50		$153,000.00	$1,912.50	$0.00	30
			$4,639,841.67		$3,856,000.00	$783,841.67		

*Interest Only Payment

Springdale

DWB Loan Terms		
Local Share (total):	$	145,650
Other Agency Funding:	$	-
DWB Grant Amount:	$	1,652,350
DWB Loan Amount:	$	3,856,000
DWB Loan Term:		30
DWB Loan Interest:		**1.25%**
DWB Loan Payment:	$	154,928

DW Expenses (Estimated)		
Proposed Facility Capital Cost:		#VALUE!
Existing Facility O&M Expense:	$	565,246
Proposed Facility O&M Expense:	$	565,246
O&M Inflation Factor:		**1.0%**
Existing Debt Service:	$	66,000

DW Revenue Sources (Projected)		
Beginning Cash:	$	-
Existing Customers (ERC):		1,064
Projected Growth Rate:		**1.0%**
Impact Fee/Connection Fee:	$	5,000
Current Monthly User Charge:	$	41.01
Needed Average Monthly User Charge:	$	67.16

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%	11	1,064	523,632	55,000	-	578,632	**-**	**-**	3,856,000	-	-	66,000	565,246	631,246	-
1	1.0%	11	1,075	866,341	55,000	-	921,341	**155,200**	**15,493**	3,749,000	107,000	48,200	66,000	565,246	801,939	1.61
2	1.0%	10	1,085	874,400	50,000	-	924,400	**154,863**	**15,493**	3,641,000	108,000	46,863	66,000	570,898	807,254	1.60
3	1.0%	11	1,096	883,265	55,000	-	938,265	**154,513**	**15,493**	3,532,000	109,000	45,513	66,000	576,607	812,613	1.64
4	1.0%	11	1,107	892,130	55,000	-	947,130	**155,150**	**15,493**	3,421,000	111,000	44,150	66,000	582,374	819,016	1.65
5	1.0%	11	1,118	900,995	55,000	-	955,995	**154,763**	**15,493**	3,309,000	112,000	42,763	66,000	588,197	824,453	1.67
6	1.0%	11	1,129	909,859	55,000	-	964,859	**155,363**	**15,493**	3,195,000	114,000	41,363	66,000	594,079	830,935	1.67
7	1.0%	12	1,141	919,530	60,000	-	979,530	**154,938**	**15,493**	3,080,000	115,000	39,938	66,000	600,020	836,450	1.72
8	1.0%	11	1,152	928,395	55,000	-	983,395	**154,500**	**15,493**	2,964,000	116,000	38,500	66,000	606,020	842,013	1.71
9	1.0%	12	1,164	938,066	60,000	-	998,066	**155,050**	**15,493**	2,846,000	118,000	37,050	66,000	612,080	848,623	1.75
10	1.0%	11	1,175	946,931	55,000	-	1,001,931	**154,575**	**15,493**	2,727,000	119,000	35,575	66,000	618,201	854,269	1.74
11	1.0%	12	1,187	956,602	60,000	-	1,016,602	**155,088**		2,606,000	121,000	34,088	66,000	624,383	845,471	1.77
12	1.0%	12	1,199	966,272	60,000	-	1,026,272	**154,575**		2,484,000	122,000	32,575	66,000	630,627	851,202	1.79
13	1.0%	12	1,211	975,943	60,000	-	1,035,943	**155,050**		2,360,000	124,000	31,050	66,000	636,933	857,983	1.81
14	1.0%	12	1,223	985,614	60,000	-	1,045,614	**154,500**		2,235,000	125,000	29,500	66,000	643,303	863,803	1.82
15	1.0%	12	1,235	995,285	60,000	-	1,055,285	**154,938**		2,108,000	127,000	27,938	66,000	649,736	870,673	1.84
16	1.0%	13	1,248	1,005,761	65,000	-	1,070,761	**155,350**		1,979,000	129,000	26,350	66,000	656,233	877,583	1.87
17	1.0%	12	1,260	1,015,432	60,000	-	1,075,432	**154,738**		1,849,000	130,000	24,738	66,000	662,795	883,533	1.87
18	1.0%	13	1,273	1,025,909	65,000	-	1,090,909	**155,113**		1,717,000	132,000	23,113	66,000	669,423	890,536	1.91
19	1.0%	12	1,285	1,035,580	60,000	-	1,095,580	**155,463**		1,583,000	134,000	21,463	66,000	676,118	897,580	1.89
20	1.0%	13	1,298	1,046,056	65,000	-	1,111,056	**154,788**		1,448,000	135,000	19,788	66,000	682,879	903,666	1.94
									Total Paid in Debt Service =		2,408,000	690,513				

DEQ | Drinking Water

Public Water System Custom Report

Springdale Town Water System Rating: Approved 03/11/1980

PWS ID: UTAH27017 Status: Active

Contacts

Type: Administrative Contact
Name: ROBERT STOY TOTTEN III
Office: 435-772-3434
Emergency: 435-772-0402
Email: rtotten@infowest.com

Site Information

Address: PO BOX 187 , SPRINGDALE, UT 84767
Phone: 435-772-3434
County: WASHINGTON COUNTY
System Type: Community
Population: 529

Site Updates

Last Inventory Update: 03/07/2016
Last Surveyor Update: 08/13/2014
Surveyor: PAUL WRIGHT
Operating Period: 1/1 - 12/31
Last IPS Update: 05/02/2016 07:00:00

Consumptive Use Zone

Irrigation Zone: 6
Date: 02/15/2013

IPS SUMMARY

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

PHYSICAL FACILITY POINTS

Code	Description	Severity	Points Effective	Details
M001	CURRENT EMERGENCY RESPONSE PROGRAM	REC	-10	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
			10/18/2011		-10

Code	Description	Severity	Points Effective	Details
PS17	PS - PIPING OR APPURTENANCES LEAKING	REC	0	View Details (1)
SP09	NO DWSP REVISION SUBMITTED AFTER REDEV OF SOURCE	MIN	20	Hide Details (1)

Facility	comments	Status	Determined Date	Point Not Effective	Point Assessed
	WS004 - Big Spring has disapproved DWSP delineations				

Total Effective Points: 10

Rockville Pipeline Company

P.O. Box 630212
Rockville Utah 84763

May 4, 2016

Utah Division of Drinking Water
Michael J. Grange, P.E.
195 North 1950 West
Salt Lake City, UT 84116

Dear Mr. Grange,

This letter is to acknowledge the association between the Springdale Town Public Works and the Rockville Pipeline Company (RPC). The RPC provides drinking water to the majority of homes in Rockville, Utah. There is a physical connection between the culinary water systems of the Town of Springdale and the RPC. This connection is utilized, under an agreement with Springdale in the case of emergency to facilitate the RPC purchasing water from Springdale.

We've had an agreement since 2006 to provide water to Rockville on an emergency basis, which has been the case several times over the past 10 years. We need a stable supply to meet possible shortfalls in water from the wells as well the potential of blending water to deal with the possibility of high radium measurements, which happened in 2011 and 2012.

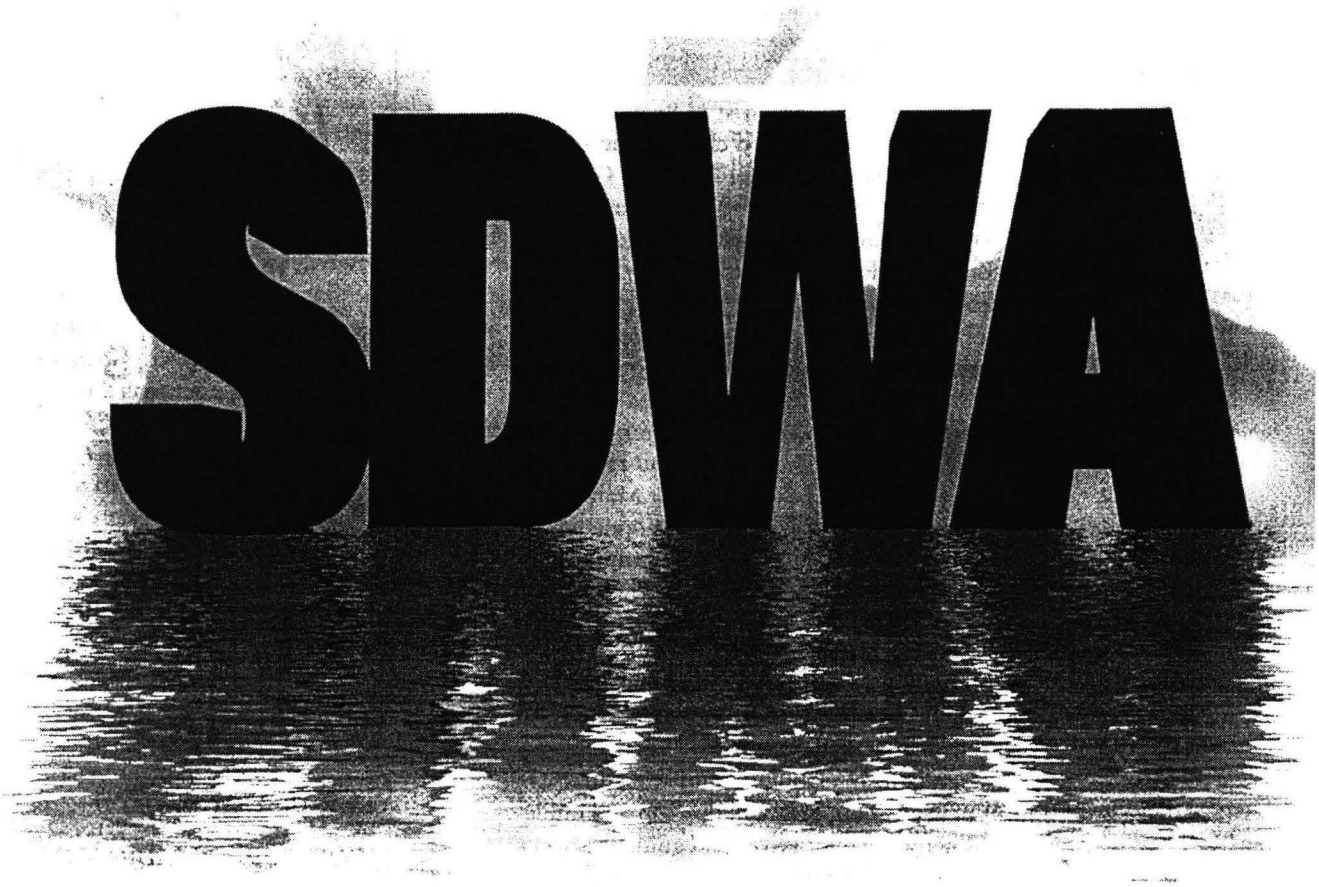
It is my concern that current sources are not going to be sufficient for Rockville's long term needs as shown in the master plan done by Sunrise Engineering in 2015.

The RPC is working through issues with water rights and a point of diversion change on existing rights and once those issues are addressed we'll be ready to move forward towards an agreement with the Town of Springdale to ensure a stable supply of culinary water to the Town of Rockville.

Sincerely,

Robert Snyder, President
Rockville Pipeline Company

Agenda Item 7(A)



J. ALAN ROBERSON AND MICHELLE M. FREY

An SDWA Retrospective:
20 Years After the 1996 Amendments

NEARLY 20 YEARS SINCE THE 1996 AMENDMENTS TO THE SAFE DRINKING WATER ACT WERE PASSED, THERE HAVE BEEN SOME SUCCESSES, BUT ADDITIONAL WORK IS NEEDED TO OVERCOME CHALLENGES AND ENSURE THE SAFETY AND RELIABILITY OF DRINKING WATER IN THE UNITED STATES.

The Safe Drinking Water Act (SDWA) was first passed into law more than 40 years ago in response to discoveries of widespread contamination in drinking water (PL 93-523, 1974). Concerns were raised over industrial pollutants found throughout the Mississippi River Basin and trihalomethanes found in drinking water distribution systems. With the founding of the US Environmental Protection Agency (USEPA) in 1972, the SDWA quickly became a key initiative for the new agency.

However, struggles to create a sustainable regulatory framework for drinking water kept USEPA from making substantial progress in promulgating new drinking water standards. In fact, from 1974 until 1986 when SDWA amendments were passed, USEPA promulgated only one truly new regulation—and that was for the control of total trihalomethanes (TTHMs) for systems serving more than 10,000 people. The other regulatory action was to finalize 22 existing standards from the US Public Health Service under the SDWA (Table 1).

Frustrated by the lack of regulatory progress, Congress passed the first set of amendments to the SDWA in 1986 (PL 99-359, 1986), mandating a schedule for the regulation of 83 specific contaminants, as well as regulations for an additional 25 contaminants every three years—in effect, a "regulatory treadmill." In addition, the amendments mandated that USEPA require the filtration of surface water supplies used as drinking water sources. USEPA soon fell behind in meeting the statutory deadlines, and the agency found itself in a series of litigations and negotiations with the Bull Run Coalition to continually extend the regulatory schedule. While USEPA did not meet the mandated schedule set in the amendments, it did eventually publish regulations for all 83 contaminants and issued its first treatment technique rulemaking in the Surface Water Treatment Rule (Table 1).

In the midst of this active regulatory environment, bipartisan concerns arose over how to ensure that USEPA was addressing the most significant drinking water risks. Then, in 1993, the *Cryptosporidium* outbreak in Milwaukee occurred, further raising concerns about drinking water quality. Added to that, the AIDS crisis was in full swing in the United States during this time, and these patients, as well as other immunocompromised individuals such as the elderly and cancer patients, were more vulnerable to *Cryptosporidium*. The outbreak, combined with litigation over the delays in promulgating regulations under the 1986 amendments and the bipartisan desire to get USEPA off the "regulatory treadmill," spurred Congress to take action once more, and the 1996 amendments to the SDWA were passed (PL 104-110, 1996).

Although the amendments contained specific requirements for USEPA to address microbial and disinfectant/disinfection by-product (D/DBP) issues in drinking water, they also took a longer view on the overall regulatory program (Table 2). In lieu of mandating specific contaminants to be regulated within a defined period, Congress required USEPA to create a process by which contaminants of concern could be identified and assessed for occurrence and potential health implications in drinking water supplies, and to decide whether a national regulation

The 1986 amendments to the SDWA mandated a schedule for the regulation of 83 specific contaminants, as well as regulations for an additional 25 contaminants every three years.

TABLE 1 Safe Drinking Water Act (SDWA) Timeline

Time Period	SDWA Policy Initiative	Regulatory Actions[a]
1974–1986	Discovery of widespread occurrence of disinfection by-products in drinking water along with other industrial contaminants. The SDWA was intended to create a regulatory program for ensuring the delivery of safe drinking water to the public.	1976—Conversion of 22 US Public Health Service contaminant limits to drinking water standard. 1983—Standard for Total Trihalomethanes (4)
1986–1996	Frustrated by the lack of regulatory progress, Congress passed the 1986 amendments and proscribed a schedule for the regulation of 83 contaminants in addition to the requirement for effective filtration and disinfection of surface water supplies.	1987—Phase I Volatile Organic Chemicals (8) 1989—Total Coliform Rule (1) and the Surface Water Treatment Rule (5) 1991—Phase II Synthetic Organic Chemicals and Inorganic Chemicals (39) 1991—Lead and Copper Rule (2) 1992—Phase V Synthetic Organic Chemicals and Inorganic Chemicals (23)
1996–present	*Cryptosporidium* outbreaks led Congress to mandate tougher standards for microbial control with mandatory disinfection for all water supplies. USEPA used a Federal Advisory Committee Act process for setting these standards, and issued an Information Collection Rule to gather data directly from water suppliers about their treatment processes and water quality. The amendments listed three additional contaminants for regulation (i.e., arsenic, sulfate, radon). The focus of the amendments shifted from defining a process by which contaminants of regulatory concern can be identified and to the provision of greater public transparency about drinking water quality.	1996—Information Collection Rule 1998—Stage 1 Disinfectants and Disinfection Byproducts Rule (6) and the Interim Enhanced Surface Water Treatment Rule (2) 2000—Radionuclides Rule (5) 2001—Arsenic Rule (1) 2003—Stage 2 Disinfectants and Disinfection Byproducts Rule (6) and Long-Term 2 Enhanced Surface Water Treatment Rule (2)

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[a]The number of contaminants for which National Primary Drinking Water Standards were set in each action is shown in parentheses.

would meaningfully reduce public health risk. Additional cost–benefit considerations in the regulatory development process were mandated. Schedules were provided for the process, and a six-year period was defined for the review of existing regulations—to determine whether they should be modified or possibly eliminated. The 1996 amendments contained several provisions for state primacy agencies, including requirements for source water assessments and protection programs, operator training and certification, and creation of the Drinking Water State Revolving Fund (DWSRF) program. Public information was emphasized through requirements for Consumer Confidence Reports (CCRs) (Table 2).

To its credit, USEPA met almost all of its SDWA mandates in the first 10 years after the 1996 amendments. Seventeen workgroups under the National Drinking Water Advisory Council (NDWAC) were established to provide stakeholder input on the mandated regulations. Requirements for the new state programs were developed, and the state primacy agencies met these requirements. USEPA finalized seven national primary drinking water regulations from 1996 to 2006, and twice used its discretionary authority to set regulations at higher concentrations for cost–benefit considerations: uranium and arsenic. The DWSRF program was created at both the federal and state levels, and loans were made to states and water systems; these loans began to get paid back so that the funding really started to revolve. Water systems learned how to develop and deliver the required CCRs, and USEPA recently approved electronic delivery for these reports.

We are now approaching 20 years since passage of the 1996 amendments. This retrospective is intended to identify where the amendments have succeeded in improving the safety and reliability of drinking water in the United States, how AWWA has contributed to regulatory activity, where more work may be needed to achieve these goals, and what new challenges the drinking water community faces in the future. Many of these challenges can likely

TABLE 2 Provisions of the 1996 amendments to the Safe Drinking Water Act (SDWA)

Provision	Policy Intent	Implementation Notes
Contaminant identification	Devise a scientific methodology that can be used to identify contaminants of potential regulatory concern.	Methodology created by USEPA does not prioritize contaminants appropriately. Improvement is needed, and AWWA has recommended an alternative methodology for consideration.
Monitoring and unregulated contaminant monitoring	As needed, require monitoring for unregulated contaminants under regulatory consideration to determine national occurrence levels and prevalence.	USEPA has implemented reasonable monitoring programs, but improvements are needed to target appropriate contaminants, ensure laboratory capacity with sufficiently sensitive and accurate analytical methods, and provide an effective means for all monitoring data to be used in making regulatory determinations (including the Six-Year Review process).
Standard setting and specific contaminants	Require a review process for all existing regulations every six years; mandate new standards for arsenic, sulfate, radon, and disinfection of all public water supplies; and revise existing standards for microbial agents of concern (specifically *Cryptosporidium*) and additional disinfection by-products.	USEPA successfully met the mandate for new regulatory standards to be set and used the cost–benefit criteria to set standards above what was feasible in two cases (i.e., arsenic, uranium). Additional work is needed in the Six-Year Review process for monitoring data integration and accessibility.
Public notification and Consumer Confidence Reports (CCRs)	Require CCRs to be issued annually by water suppliers and public notifications for noncompliance events to improve transparency to the public.	For both public notices and CCRs, restrictive language requirements limit the effectiveness of these tools. The wide variability of state implementation leads to uncertain outcomes in terms of true transparency and effective notification when public action is needed (e.g., boil-water advisories).
Drinking Water State Revolving Fund (DWSRF) program	Establish funding levels for the DWSRF to help water suppliers implement capital improvements necessary to comply with new standards.	In general, the DWSRF program has been successful. Improvements in the ease of the application process and standardized practices across states would be beneficial.
Source water assessment and protection	Require all water suppliers to identify potential sources of contamination in their source waters and implement appropriate protection measures.	Although source water assessment programs were performed, translating the assessments to meaningful protection measures has been limited. Routine updating of the assessment process is needed, but there is no provision or guidance for this.
Operator certification	Require states to establish standards for water system operator certification and to implement necessary training and certification programs.	USEPA successfully produced reasonable guidance, and all states except Wyoming have implemented operator certification programs. Although this is a great success, limitations such as reciprocity of licenses between states, sufficient funding to meet training program needs, and greater consistency in programs should be addressed moving forward.

USEPA—US Environmental Protection Agency

be addressed through modifications of ongoing SDWA implementation programs, but some may be good candidates for new provisions in the next re-authorization of the SDWA, whenever that may be.

MISSION ACCOMPLISHED?

In considering the outcomes of the 1996 amendments, the question that must be asked is, "Was it successful?" To answer this, it is necessary to first articulate what success means. The overall intent of the SDWA is to ensure the provision of safe drinking water to US consumers. This infers three requirements to define success:

- Drinking water supplies as delivered to consumers today are safer than they were in 1996.
- US consumers have as much if not greater access to these drinking water supplies today than they did in 1996.
- The causative factor for the water being safer and consumers having access is the implementation of the regulatory program required under the 1996 amendments.

A recent study by Seidel et al. (2014) created a methodology for assessing multiple risks compiled in a single index that could be used to inform utilities and policymakers alike of the relative concern various contaminants may pose in drinking water. The Relative Health Indicator (RHI) was used to evaluate regulated and selected nonregulated contaminants in drinking water nationally and at 10 utility case study locations. The results showed that there are clear differences in the risks posed by contaminants, and those of greatest concern—both from the health impact and likelihood of relevant exposure levels. In order of concern, these include

- microbes,
- arsenic,
- select individual DBPs (ie, bromodichloromethane, trichloroacetic acid, dichloroacetic acid, dibromochloromethane, chloroform),
- nitrate,
- selenium, and
- radium.

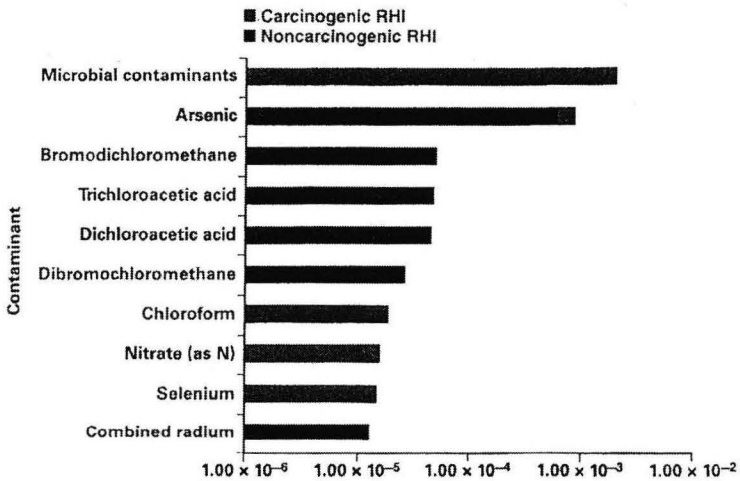
Figure 1 illustrates the RHI outcomes for each of the above contaminants based on national occurrence and risk levels from exposure through drinking water. An order-of-magnitude difference in risk separates microbes from the next-most significant contaminant of concern (i.e., arsenic), and multiple orders of magnitude differentiate microbes and arsenic from the next set of contaminants.

Microbes, DBPs, and arsenic were considered by USEPA to be "priority contaminants" as reflected by the mandated deadlines in the 1996 SDWA amendments, and it is an interesting confluence of risk and policy that these three contaminants provided the largest health risk reduction based on the 2014 Seidel et al. study. Nitrate and selenium have been regulated since 1976 with no further modifications, so no net change in water supply safety would be expected as a result of the 1996 amendments. Further, while a Radionuclides Rule was published as a result of the 1996 amendments, the regulation of radium was not altered from the original standard promulgated in 1976.

> The 1996 amendments contained several provisions for state primacy agencies, including requirements for source water assessments and protection programs.

As part of its rulemaking process, USEPA estimates the number of waterborne disease events that can be avoided if a regulatory action is

FIGURE 1 Relative health indicator for national risk of drinking water contaminants



Source: Seidel et al. 2014; ©Water Research Foundation and Drinking Water Inspectorate

RHI—relative health indicator

implemented. In the case of the D/DBP Rule (DBPR) and the arsenic regulation, the illnesses to be avoided were fatal and nonfatal cancer cases. Between these two rulemakings, nearly 320 cancer cases were estimated to be avoided with the majority associated with the DBPR (Table 3). The total national benefit annually for such illness avoidance was approximately $2.4 billion, while the total national cost to implement these regulations was estimated to be less than $200 million/year (USEPA 2005a; 66 FR 6975, 2001).

When examining the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), between 170,000 and 336,000 cases of nonfatal illnesses as well as 39 to 74 deaths each year were estimated to be avoided annually (Table 3). The national benefits were estimated to be between $335 million and $645 million per year with a total national cost of only $110 million to $120 million per year (USEPA 2005b).

The mission of the 1996 amendments to address drinking water safety was successful in that its regulation of microbes, DBPs, and arsenic have contributed to reduced drinking water risks. However, the national compliance picture shows that more needs to be done. From 1996 to 2011, the percentage of community water systems meeting health-based standards increased from 85.6 to 93.2% (USEPA 2013a). While the increase over that time frame is laudable, 93% compliance shows that there is room for improvement.

The mission of the 1996 amendments to address drinking water safety was successful in that its regulation of microbes, DBPs, and arsenic have contributed to reduced drinking water risks.

Additionally, ensuring that this health benefit is realized from tap water may be challenged by changes in consumer water consumption behaviors and the ongoing affordability of drinking water for all consumers. Since 2001, a nearly 60% increase in the selection of bottled water over other beverages has occurred (Thompson 2013). Further, the average person consumes more than twice the bottled water volume per year than nearly 20 years ago when the 1996 amendments were first passed (Statista 2015). While bottled water consumption accounts only for approximately 15% of the average consumer's daily water intake, it is still an important trend that could discount the value (i.e., benefits) attributed to drinking water regulations for public water supplies. The regulation of bottled water under the US Food and Drug Administration (FDA) does have "pass through" provisions to ensure that all drinking water standards are met by bottled water, but the monitoring and reporting processes differ widely, and the differences in the aging and delivery processes are not considered.

With respect to the affordability of drinking water supplies, there is no question that drinking water rates have risen significantly since 1996. Over the last five years alone, a 41% increase in water rates was found by a pricing survey of the top 30 cities in the United States (Walton 2015). An analysis performed by *USA Today* showed that between 2000 and 2012, at least one in four municipalities out of the 100 surveyed had doubled their water rates. Further, water costs have increased 34% (inflation adjusted), while natural gas and electricity increased only 12% and 7%, respectively, across the same period (Kepple et al. 2012). In both rural areas and some lower-income urban areas, affordability of water and wastewater services is becoming more of an issue. Serving the growing US population, as well as replacing and rehabilitating existing infrastructure, puts pressure on local officials to increase rates (US Conference of Mayors 2015). Addressing the affordability of public water supplies needs to be a consideration as the drinking water community explores trade-offs in potential benefits with the cost of compliance when looking beyond the 1996 SDWA amendments.

TABLE 3 Benefits and costs estimated by USEPA for key regulations from the 1996 SDWA amendments

Regulation	Illness Cases Avoided	Annualized Benefits *millions of $/year*	Annualized Cost *millions of $/year*
DBPR[a]	Fatal and nonfatal cancer: 280	2,290	80
LT2ESWTR[b]	Nonfatal illnesses: 170,000–336,000 Fatal illnesses: 39–74	335–645	110–120
Arsenic[c]	Nonfatal cancers: 7–17 Fatal cancers: 11–19	70–120	115

DBPR—Disinfectants and Disinfection Byproducts Rule, LT2ESWTR—Long Term 2 Enhanced Surface Water Treatment Rule, SDWA—Safe Drinking Water Act, USEPA—US Environmental Protection Agency

[a]USEPA 2005a
[b]USEPA 2005b
[c]USEPA 2001

HOW HAS AWWA SHAPED REGULATORY OUTCOMES?

More focused advocacy work was needed for the regulatory mandates and schedules in the 1986 SDWA amendments, and these mandates and schedules did not fit with the traditional AWWA committee structure. In 1987, the AWWA Water Utility Council established a series of technical advisory workgroups to collect data and information and to provide technical and policy input into the regulatory development process. At the same time, several water organizations started the Water Industry Technical Action Fund (WITAF) to provide funding for contracts for data collection and analysis, and to pay for volunteer travel for meetings to develop the technical and policy input. WITAF has funded several hundred projects since the late 1980s that have played a major role in framing all of the regulations that resulted from the 1996 SDWA amendments. WITAF started out being funded with an assessment to water systems, and later, when the funding from those assessments started to run out in the early 1990s, shifted to being funded by a portion of AWWA organizational members' dues.

AWWA responded to the 1996 SDWA amendments by increasing staff in its Washington, D.C., office and increasing volunteer involvement in the 17 NDWAC workgroups. This active volunteer involvement in the regulatory development process continued to the present day.

Taking time to look back at the last 20 years of the regulatory development process, one can see several instances in which AWWA has positively "shaped" regulations. It's not that AWWA "won," because with a winner, typically there is a loser, and nobody wants USEPA or drinking water consumers to be the "losers" of drinking water regulations and public health protection. But AWWA has the capability to collect data that USEPA cannot because of budgetary and data collection restrictions, and this capability has ensured that all of the national primary drinking water regulations over the past 20 years have been based on the best available science.

To follow is a list of the drinking water regulations that AWWA has been most effective in helping to shape, and how, over the past 20 years:

- Lead and Copper Rule: no lead maximum contaminant level (MCL) at the tap was implemented, as was originally proposed
- Arsenic: 10 µg/L instead of 5 µg/L as proposed, using the new discretionary authority in the 1996 SDWA amendments to set an MCL at a higher level than is strictly feasible
- Uranium: MCL set at 30 µg/L, using the same discretionary authority
- Filter Backwash Recycling Rule (FBRR): no mandated treatment for filter backwash
- Information Collection Rule (ICR): successful implementation of the rule, the largest mandated drinking water data collection effort that served as the foundation for the Microbial/DBP (M/DBP) cluster of regulations
- LT2ESWTR: a toolbox of compliance options rather than an MCL for *Cryptosporidium*
- Stage 2 DBPR: no MCL for total organic carbon and the 80/60 µg/L locational running annual average (LRAA) for TTHMs and five haloacetic acids (HAA5) instead of a 40/30 MCL, and the operational evaluation level that synthesizes the LRAA instead of a "single hit" of 100 µg/L
- Ground Water Rule: no mandate for all groundwater systems to disinfect
- Revised Total Coliform Rule (RTCR): eliminating the total coliform MCL and replacing it with the "find and fix" regulatory framework through the Level 1 and Level 2 assessments
- RTCR (which was originally called the Revised Total Coliform and Distribution System Rule): no distribution system regulations being promulgated
- CCRs: electronic delivery approved
- Fire hydrants: not required to meet the revised lead-free standards

AWWA is always looking for volunteers who have an interest in national drinking water policy to participate in the regulatory development process and needs knowledgeable volunteers who have a desire to learn more, and, most importantly, the ability to step back and think about how the subject being debated might affect all systems across the country.

WHAT ARE THE NEXT BIG CHALLENGES?

As we contemplate the potential re-authorization of the SDWA in 2016 (or thereafter), two questions will need to be answered. What are the challenges that should be addressed at the national level? Or has the SDWA accomplished its mission, meaning our focus should be on improving compliance rates, addressing the capital challenges of municipalities to maintain their infrastructure, and building public confidence in both the value and safety of public water supplies?

Since 1996, several events outside of the traditional SDWA regulatory development processes have complicated utilities' planning efforts as a result of the uncertain scope of the potential impacts. The events of 9/11 led to additional SDWA amendments in 2002 that required water systems serving more than 10,000 people to develop vulnerability assessments and emergency response plans. Since then, emergency preparedness has evolved from meeting the regulatory requirements for vulnerability assessments and emergency response plans

to an all-hazards approach that addresses a wide range of potential natural and man-made threats, as well as cybersecurity and responses to changes in climate and precipitation patterns.

More recently, the 4-methylcyclohexanemethanol (4-MCHM) spill in West Virginia and the algal bloom in Lake Erie that led to a "do not drink/do not boil" order in Toledo, Ohio, are just a couple of examples of the evolving threats to source waters. Generally, the current SDWA regulatory development processes are not designed for a timely reaction to such evolving threats. However, one thing is clear: the development of new standards and the revision of existing standards has slowed—and that may or may not be a good thing.

The 1996 SDWA amendments mandated two regulatory development processes. For new contaminants, the Contaminant Candidate List (CCL) serves as the starting point, with decisions made from the CCL on whether a contaminant would provide a "meaningful opportunity for health risk reduction." Since the 1996 SDWA amendments, USEPA made one final positive determination for perchlorate in 2011, and a preliminary positive determination for strontium in 2014. No final regulations have been developed for any CCL contaminants.

It should be noted that perchlorate was listed on the first CCL (CCL1) in 1998 and was included in the Unregulated Contaminant Monitoring Rule 1 in 1999, and the scientific debate about its potential health effects from drinking water exposure continues. The preliminary positive determination for strontium was primarily based on a reduction in the health reference level from 4,200 µg/L to 1,500 µg/L. The debate is ongoing as to whether a national drinking water regulation for either one of these contaminants would provide a "meaningful opportunity for risk reduction" as mandated by the SDWA.

The process for reviewing and potentially revising existing drinking water regulations every six years appears to be working a little better than the process for identifying and potentially regulating new contaminants. USEPA, on the basis of recommendations from another NDWAC workgroup process, published the final RTCR in 2013. Because of the extensive stakeholder effort through the NDWAC workgroup, this revision took 10 years, as the 1989 Total Coliform Rule was identified as the first regulation that needed revision in the first Six-Year Review in 2003.

The process by which USEPA identifies potential contaminants for regulation lacks a cohesive and well-coordinated research agenda. Outside of the research plans developed for arsenic and M/DBPs in the mid-1990s, USEPA has not developed an effective research plan for a new contaminant that has been listed on any CCL. Although there are many contaminants that may be in the environment, without further research on analytical methods, health effects, and occurrence/exposure potential, USEPA seems to be struggling to support reasonable decisions on regulatory need and to develop appropriate regulatory standards.

Another aspect of the drinking water regulatory development is how USEPA does (or does not) use the many resources available to it from its other programs:

- The Pesticide Program could provide information on human toxicity issues.
- The Air Program has unintentionally affected the formation of brominated DBPs downstream of power plants that have installed bromide scrubbers to remove mercury from emissions.
- The Clean Water Act, if managed differently or at least in concert with the SDWA, could significantly reduce the effect on the quality of source waters for many utilities.
- The Integrated Risk Information System, if better funded, could more quickly inform USEPA on human health risks of many contaminants.

ARE LOCALIZED ISSUES OUTWEIGHING NATIONAL CONCERNS FOR WATER QUALITY?

When considering the challenges facing the drinking water community, the ability to effectively respond to and manage local water quality events is important. Spill events occur frequently in our nation's water supplies, and the threat level posed depends on the volume and location of specific spills. The majority of these spills are small enough in volume so as to go undetected in drinking water supplies. However, when large spills occur, utilities are often working with insufficient information about the nature of the spill. Having greater transparency between water utilities and chemical producers and retailers when spill events occur is critical. Establishing a standard practice and conditions by which proprietary information on spilled chemicals can be shared is important to ensuring that utilities can respond appropriately under a range of spill conditions. Additionally, greater access to emergency remediation systems, laboratory capabilities, and alternative water supplies (e.g., tank trucks, interconnections when available) are important to assisting utilities affected by major spill events in their watershed.

Additionally, national drinking water standards may not be necessary for contaminants that may occur in a handful of states. Clearly, a contaminant that occurs in 25 states at a level of health concern warrants a thorough analysis to determine if a national regulation is warranted. But a different approach may be needed for a contaminant that occurs in five or six states. It may make more sense from a policy perspective for

USEPA to develop guidelines that those five or six states could use for their own state-level standards and not impose a regulatory burden on the balance of the states to follow a national regulation or on the water systems to conduct the first round of initial monitoring under a national regulation.

WHERE DO WE GO FROM HERE?

Overall, the 1996 SDWA amendments have been successful in addressing important public health concerns in drinking water. But this does not mean that we are done. There are several areas where improvement is needed in the implementation of the 1996 amendments. The following improvements fall outside of new legislative initiatives but should be a focus for the drinking water community as we move forward.

- **Increase compliance with existing regulations.** The most recent data available on compliance from 2013 show that improvements are occurring nationally, but work is still needed (USEPA 2013b). Only 3% of public water systems were identified as priorities for enforcement because of the severity of their noncompliance conditions—a reduction of 1% from 2012. However, 25% of public water systems were identified in 2013 as having at least one significant noncompliance event for either health-related (7%) or monitoring- and reporting-related (18%) violations. Improvement is needed to ensure that all US consumers receive the health benefits intended through the 1996 amendments.
- **Enhance the methodology for identifying contaminants of regulatory concern.** The methodology used by USEPA to produce CCLs does not produce prioritized results whereby the best opportunities for meaningful risk-reduction are likely to be available. Further, with the large number of contaminants that make up the CCLs, USEPA does not have the resources for the necessary research and information collection to make appropriate regulatory determinations. AWWA has provided recommendations on ways to improve the agency's methodology to achieve more targeted and meaningful outcomes.
- **Retire the regulation of contaminants that are no longer of concern in the Six-Year Review process.** Because of concerns over potential back-sliding for public health protection, USEPA has not made any regulatory determinations within the Six-Year Review process to retire the regulation of contaminants that are no longer of national concern in drinking water (e.g., dichlorodiphenyltrichloroethane [DDT], asbestos fibers). Some of these regulations can impose substantial monitoring expenses, and they can also confuse the public as to what might or might not be in their drinking water supplies. Attention is needed to define a method for retiring nonrelevant regulations that will not raise concerns for the potential back-sliding of public health protection.
- **Implement a consistent and streamlined process to access DWSRF money.** Improved use of the DWSRF could help ensure that water costs remain affordable and ensure continued accessibility to high-quality drinking water for all US consumers. A more streamlined funding application process with less red tape should be put in place to provide consistency in loan approval processes and encourage utilities to fund improvements through the DWSRF.

As to the future for reauthorization of the SDWA, a number of policy initiatives should be considered to address the dynamic and increasingly complex problems facing drinking water utilities and their consumers:

- Notification methods for relevant spill events in local watersheds
- Authorization for the development of an emergency water supply network of providers for such services as laboratory analyses, portable treatment systems, and tanked/trained water supplies, in coordination with the Federal Emergency Management Agency (FEMA) and beyond FEMA-managed events
- Process by which proprietary chemicals, when spilled in the environment, must be sufficiently identified to enable detection and facilitate an assessment of the appropriate methods for remediation
- Additional drinking water policy research to start collecting data that inform decision-making for potential reauthorization of the SDWA and for changing the implementation of the current SDWA, as well as to start the process of developing a broader suite of SDWA metrics beyond simple compliance with the regulations

The SDWA and its 1996 amendments have improved the quality of drinking water in the United States, but more work is needed and the future is expected to hold greater successes still. This is an exciting time to be a part of the drinking water community.

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REFERENCES

66 FR 6975, 2001. National Primary Drinking Water Regulation; Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring. www.gpo.gov/fdsys/granule/FR-2001-01-22/01-1668 (accessed Feb. 5, 2016).

Kepple, K.A.; Gaines, D.; Murphy, J.; Carroll, D.; McCoy, K.; St. John, O.; & McGarrity, T., 2012. USA Today Analysis—Water Costs Gush Higher. *USA Today,* Sept. 27. www.usatoday.com/story/money/business/2012/09/27/rising-water-rates/1595651/ (accessed Nov. 11, 2015).

PL (Public Law) 93-523, 1974. Safe Drinking Water Act. *88 Statue 1660.*

PL 99-359, 1986. Safe Drinking Water Act Amendments of 1986. *88 Statute 642.*

PL 104-110, 1996. Safe Drinking Water Act Amendments. *88 Statue 1613.*

Seidel, C.; Gosh, A.; Tang, G.; Hubbs, S.; Raucher, R.; & Crawford-Brown, D., 2014. Identifying Meaningful Opportunities for Drinking Water Health Risk Reduction in the United States. Water Research Foundation, Denver.

Statista, 2015. Per Capita Consumption of Bottled Water in the United States from 1999 to 2014 (in Gallons). www.statista.com/statistics/183377/per-capita-consumption-of-bottled-water-in-the-US-since-1999/ (accessed Nov. 11, 2015).

Thompson, D., 2013. How America Drinks: Water and Wine Surge, Cheap Beer and Soda Crash. *The Atlantic,* Jan. 15. www.theatlantic.com/business/archive/2013/01/how-america-drinks-water-and-wine-surge-cheap-beer-and-soda-crash/267153/ (accessed Nov. 11, 2015).

US Conference of Mayors, 2015. Struggling Local Government Finances and Decelerating Public Water Investment. www.usmayors.org/urbanwater/publicwaterinvestmentreport2015.pdf (accessed Nov. 11, 2015).

USEPA (US Environmental Protection Agency), 2013a. Fiscal Year 2011 Drinking Water and Ground Water Statistics. EPA Document 816-R-13-003. Office of Water, Washington.

USEPA, 2013b. Providing Safe Drinking Water in America: 2013 National Public Water System Compliance Report. EPA Document 305-R-15-001. Office of Enforcement and Compliance Assurance, Washington.

USEPA, 2005a. Economic Analysis for the Final Stage 2 Disinfectants and Disinfection Byproducts Rule. EPA Document 815-R-05-010. Office of Water, Washington.

USEPA, 2005b. Economic Analysis for the Final Long Term 2 Enhanced Surface Water Treatment Rule. EPA Document 815-R-06-001. Office of Water, Washington.

Walton, B., 2015. Price of Water 2015: Up 6 Percent in 30 Major U.S. Cities; 41 Percent Since 2010.www.circleofblue.org/waternews/2015/world/price-of-water-2015-up-6-percent-in-30-major-u-s-cities-41-percent-rise-since-2010/ (accessed Nov. 11, 2015).

AWWA RESOURCES

- The Middle-Aged Safe Drinking Water Act. Roberson, J.A., 2014. *Journal AWWA,* 106:8:96. Product No. JAW_0080655.
- State Drinking Water Program Perspectives. Forbes, C., 2015. Proc. 2015 Annual Conference and Exposition. Catalog No. ACE_0082501.
- Drinking Water Regulation. AWWA. www.awwa.org/legislation-regulation/regulations/drinking-water-regulation.aspx.

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