State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

Utah Water Quality Board Meeting
DEQ Room Great Salt Lake West 3134
195 North 1950 West
Salt Lake City, UT 84116

March 25, 2020
Meeting Begins at 8:30 am

AGENDA

Water Quality Board Meeting – Roll Call

A. Minutes:
Approval of minutes for February 26, 2020 Water Quality Board Meeting..... Jennifer Grant

B. Executive Secretary's Report .....Erica Gaddis

C. Funding Requests:
1. Financial Report ..... Emily Cantón
2. Intended Use Plan..... Emily Cantón
3. South Davis Sewer District – Reauthorization..... Ken Hoffman
4. Lewiston City – Authorization..... John Mackey
5. Millville City – Authorization..... Ken Hoffman

D. Rule Making:
1. Rescission and replacement of rules governing graywater systems (R317-401).....Robert Beers
2. Adoption of new rules governing UPDES public notice requirements (R317-8)....Jeffrey Studenka

E. Public Comment Period

F. Meeting Adjournment

Next Meeting April 22, 2020 at 8:30 am
DEQ Board Room 1015
195 North 1950 West
Salt Lake City, UT 84116

Revised 3/20/2020
DWQ-2020-006252
In compliance with the American Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Larene Wyss, Office of Human resources, at (801) 536-4281, TDD (801) 536-4284, or by email at lwyss@utah.gov at least five working days prior to the scheduled meeting.

State of Utah

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MINUTES

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

UTAH WATER QUALITY BOARD
195 North 1950 West
Room 1015
Salt Lake City, UT 84116

February 26, 2020
8:30 am

UTAH WATER QUALITY BOARD MEMBERS PRESENT

Scott Baird	Mike Luers
Steven Earley	Emily Niehaus (Via Google Hangouts)
Gregg Galecki	James Vanderslice (Via Google Hangouts)
Brandon Gordon	
Jennifer Grant	

Excused: James Webb

DIVISION OF WATER QUALITY STAFF MEMBERS PRESENT

Marsha Case	Ken Hoffman
Skyler Davies	Brenda Johnson
Emily Cantón	John Mackey
Angela Gunderson	Erica Gaddis
James Harris	Beth Wondimu
Lisa Stevens	Sarah Leavitt Ward
Dan Hall	Scott Ericson

OTHERS PRESENT

Brad Rasmussen	Aqua Engineering
Donna Spangler	EDO
Julie Bergeson	Lewiston City
Kelly Field	Lewiston City
Katie Reams	Lewiston City – JUB
Zan Murray	Lewiston City – JUB
Chad Brown	Millville City
David Hair	Millville City

OTHERS PRESENT

Corey Twedt	Millville City
Dal Wayment	South Davis Sewer District
Matt Myers	South Davis Sewer District
Joan Powell	Wellington City
Jesse Ralphs	Wellington City – Sunrise Engineering
Linsey Shafer	University of Denver
Jeanette Johnson	

Ms. Grant called the Board meeting to order at 8:30 AM and took roll call for the members of the Board and audience.

APPROVAL OF MINUTES OF JANUARY 22, 2020 MEETING

Motion: **Mr. Galecki moved to approve the minutes of the January 22, 2020 meeting. Mr. Luers seconded the motion. The motion passed unanimously.**

EXECUTIVE SECRETARY REPORT

National Level

- Dr. Gaddis reported to the Board that on January 23, 2020 the EPA and the Army finalized the Navigable Waters Protection Rule that will define the "Waters of the United States" that include four simple categories of jurisdictional waters.
    - The territorial seas and traditional navigable waters,
    - Perennial and intermittent tributaries to those waters,
    - Certain lakes, ponds and impoundments, and
    - Wetlands adjacent to jurisdictional waters.

State Level

- Dr. Gaddis updated the Board on the legislative session.
    - HB 226 Storm Water Permitting Amendments
    - HB 297 Yurt Amendments
    - HB 88 School Water Testing Requirements
    - SB 88 Environmental Quality Revisions
    - The Agricultural Water Quality Incentive Program – Water Quality is asking for $3 Million.
    - HAB appropriation transferred to Forestry Fire and State Lands (FFSL) for Utah Lake treatment.

Division

- Dr. Gaddis updated the Board on Storm Water permit revisions.
- Ms. Cantón introduced a new staff member, Angela Gunderson, who is the new Finance

Division

- Dr. Gaddis updated the Board on Storm Water permit revisions.
- Ms. Cantón introduced a new staff member, Angela Gunderson, who is the new Finance Manager for Water Quality.
- Dr. Gaddis informed the Board that there are 8 vacancies due to retirements and employees moving to different jobs. Water Quality is currently recruiting for the Surface Water Manager to replace Matt Garn.

Board

- Dr. Gaddis reminded the Board that there is a work meeting for the Finance Committee on March 3, 2020 at 2:00 pm.
- Dr. Gaddis gave an update of the survey that was sent to Board members.
- Ms. Grant requested that the board be updated on storm water permits at an upcoming work meeting.
- Board survey feedback was discussed. Important topics included improving technology for remote participation in meetings, adding detail to financial assistance feasibility reports, and board retreats.

FUNDING REQUESTS

Financial Report: Ms. Cantón updated the Water Quality Board on the Loan Funds and Hardship Grant Funds, as indicated in the packet.

Wellington City – Request for Hardship Design Grant: Mr. Davies introduced the Wellington City request for a Hardship Design Grant in the amount of a $350,000 for design and other pre-construction costs related to replacement and renewal of major portions of the City's sewer system.

Motion: **Mr. Luers moved to approve the staff recommendation to authorize a $350,000 Grant to the City of Wellington for the Pre-Construction Engineering Costs for the project with the Water Quality Board authorizing conversion of existing advances totaling $83,573.86 to a hardship grant with the remaining $45,026.14 of those funds being deobligated. Mr. Galecki seconded the motion. The motion passed unanimously.**

Millville City – Funding Request Introduction: Mr. Hoffman presented the Millville City request for financial assistance from the Utah Water Quality Board in the amount of $12,300,000 to construct a new sewerage system. The City is also requesting a design advance from the Utah Water Quality Board in the amount of $694,500.

Motion: **Mr. Galecki moved to approve a $350,000 grant. Mr. Gordon seconded the motion. The motion passed unanimously.**

Lewiston City – Funding Request Introduction: Ms. Wondimu presented the Lewiston City request for financial assistance in the amount $3,064,000 for construction of sewerage and treatment works improvements. The City is also requesting a hardship design advance in the amount of $186,000.

interest rate of 0.55% and a 20-year term, including $2,500,000 in principal reserved for SRF eligible nonpoint source project funding.[1]

[1] As motioned by Mr. Luers and seconded by Ms. Grant on February 22, 2017. This motion passed with Mr. Galecki and Mr. Bunker voting in opposition.

ENFORCEMENT

Pitman Settlement Agreement: Ms. Ward presented the request for approval of a Settlement Agreement and Order of Consent for Pitman Family Farms, Inc.

Motion: **Mr. Galecki moved to approve the request for approval of the Settlement Agreement and Order of Consent for Pitman Family Farms, Inc. Mr. Earley seconded the motion. The motion passed with a majority vote and with no vote recorded from Dr. VanDerslice.**

Public Comments: No public comments.

Meeting Adjournment

Motion: **Mr. Gordon moved to adjourn the meeting. Mr. Luers seconded the motion. The motion passed unanimously.**

To listen to the full recording of the Board meeting go to: http://www.utah.gov/pmn/index.html

Next Meeting – March 25, 2020 at 8:30 am
195 North 1950 West
Room 1015
Salt Lake City, UT 84116

_____
Jennifer Grant, Chair
Utah Water Quality Board

DWQ-2020-005562

LOAN FUNDS
FINANCIAL STATUS REPORT
MARCH 2020

STATE REVOLVING FUND (SRF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025	State Fiscal Year 2026
Funds Available							
2016 - 2019 Capitalization Grants	24,671,801	-	-	-	-	-	-
2017 - 2019 State Match	4,800,000	-	-	-	-	-	-
Future Capitalization Grants (estimated)	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Future State Match (estimated)	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
SRF - 2nd Round	85,486,526	107,806,133	58,649,674	16,911,541	(5,132,626)	914,433	27,700,658
Interest Earnings at 2.866%	816,767	3,090,047	1,681,076	484,736	-	26,210	793,984
Loan Repayments	4,007,334	14,684,494	18,091,792	17,121,097	17,247,059	17,160,015	15,904,662
Total Funds Available	129,382,428	135,180,674	88,022,541	44,117,374	21,714,433	27,700,658	53,999,304
Project Obligations							
Duchesne City	(27,295)	-	-	-	-	-	-
Logan City	(10,000,000)	(13,131,000)	(10,000,000)	-	-	-	-
Moab City	(80,000)	-	-	-	-	-	-
Salem City	(469,000)	-	-	-	-	-	-
Loan Authorizations							
Central Valley Water Reclamation Facility	(5,000,000)	(15,000,000)	(23,850,000)	(21,250,000)	-	-	-
Provo City	-	(15,000,000)	(25,000,000)	(23,000,000)	(15,800,000)	-	-
*South Davis Sewer District (with NPS)	(6,000,000)	(20,000,000)	(2,851,000)	-	-	-	-
South Salt Lake City (B)	-	-	(4,410,000)	-	-	-	-
Planned Projects							
Future Project Reserve	-	(5,000,000)	(5,000,000)	(5,000,000)	(5,000,000)	-	-
*Millville City	-	(8,400,000)	-	-	-	-	-
Total Obligations	(21,576,295)	(76,531,000)	(71,111,000)	(49,250,000)	(20,800,000)	-	-
SRF Unobligated Funds	$ 107,806,133	$ 58,649,674	$ 16,911,541	$ (5,132,626)	$ 914,433	$ 27,700,658	$ 53,999,304

UTAH WASTEWATER LOAN FUND (UWLF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025	State Fiscal Year 2026
Funds Available							
UWLF	20,485,716	11,603,732	6,813,524	7,962,130	10,910,418	13,842,009	16,773,043
Sales Tax Revenue	-	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500
Loan Repayments	864,441	3,357,992	3,031,806	2,582,488	2,565,791	2,565,235	2,418,354
Total Funds Available	21,350,157	18,549,224	13,432,830	14,132,118	17,063,709	19,994,743	22,778,897
General Obligations							
State Match Transfers	(6,400,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)
DWQ Administrative Expenses	(405,425)	(1,621,700)	(1,621,700)	(1,621,700)	(1,621,700)	(1,621,700)	(1,621,700)
Project Obligations							
South Salt Lake City (A)	(1,941,000)	(2,249,000)	(2,249,000)	-	-	-	-
Loan Authorizations							
Kane Co Water Conservancy Dist (Duck Creek)	(1,000,000)	-	-	-	-	-	-
Planned Projects							
*Millville City	-	(3,200,000)	-	-	-	-	-
*Lewiston City	-	(3,065,000)	-	-	-	-	-
Total Obligations	(9,746,425)	(11,735,700)	(5,470,700)	(3,221,700)	(3,221,700)	(3,221,700)	(3,221,700)
UWLF Unobligated Funds	$ 11,603,732	$ 6,813,524	$ 7,962,130	$ 10,910,418	$ 13,842,009	$ 16,773,043	$ 19,557,197

*WQB Agenda Items

HARDSHIP GRANT FUNDS
FINANCIAL STATUS REPORT
MARCH 2020

HARDSHIP GRANT FUNDS (HGF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025	State Fiscal Year 2026
Funds Available							
Beginning Balance		2,917,915	4,315,910	4,862,331	5,306,810	5,712,506	6,076,616
Federal HGF Beginning Balance	6,784,759	-	-	-	-	-	-
State HGF Beginning Balance	1,923,990	-	-	-	-	-	-
Interest Earnings at 2.866%	83,206	83,636	123,707	139,369	152,109	163,738	174,174
UWLF Interest Earnings at 2.866%	195,727	332,598	195,296	228,219	312,725	396,753	480,766
Hardship Grant Assessments	632,902	974,418	854,384	731,418	623,670	514,199	396,397
Interest Payments	147,072	403,983	373,034	345,473	317,191	289,421	261,668
Advance Repayments	-	880,000		-	-	-	-
Total Funds Available	9,767,657	5,592,550	5,862,331	6,306,810	6,712,506	7,076,616	7,389,622
Financial Assistance Project Obligations							
Eagle Mountain City - Construction Grant	(510,000)	-	-	-	-	-	-
Emigration Sewer Imp Dist - Planning Grant	(26,158)	-	-	-	-	-	-
Green River	(54,000)	-	-	-	-	-	-
Kane Co Water Conservancy Dist (Duck Creek) - Hardship Grant	(2,034,500)	-	-	-	-	-	-
Lewiston City - Hardship Design Advance	(186,000)	-	-	-	-	-	-
Millville City - Hardship Design Advance	(347,000)						
USU Extension - Hardship Grant	(3,083)	-	-	-	-	-	-
Wasatch Co. Study	(100,000)						
Wellington City - Hardship Design Grant	(350,000)						
Non-Point Source/Hardship Grant Obligations							
Fitzgerald ARDL interest-rate buy down	(51,056)	-	-	-	-	-	-
McKees ARDL interest-rate buy down	(55,261)	-	-	-	-	-	-
Munk Dairy ARDL interest-rate buy down	(16,017)						
(FY11) Gunnison Irrigation Company	(48,587)	-	-	-	-	-	-
(FY12) Utah Department of Agriculture	(385,393)	-	-	-	-	-	-
(FY13) DEQ - Great Salt Lake Advisory Council	(173,009)	-	-	-	-	-	-
(FY15) DEQ - Ammonia Criteria Study	(46,630)	-	-	-	-	-	-
(FY15) DEQ - Nitrogen Transformation Study	(14,500)	-	-	-	-	-	-
(FY17) DEQ - GW Quality Study	(5,051)	-	-	-	-	-	-
(FY17) DEQ - Utah Lake Water Quality Study	(206,150)	(172,749)	-	-	-	-	-
UofU - Utah Lake Sediment - Water Nutrient Interactions	(70,785)	-	-	-	-	-	-
BYU - Bioassays to Investigate Nutrient Limitation	(41,798)	(26,282)	-	-	-	-	-
USU - Historic Trophic State/Nutrient Concentrations Paleo	(155,766)	(77,609)	-	-	-	-	-
FY 2015 - Remaining Payments	(4,223)	-	-	-	-	-	-
FY 2016 - Remaining Payments	(2,386)	-	-	-	-	-	-
FY 2017 - Remaining Payments	(29,723)	-	-	-	-	-	-
FY 2018 - Remaining Payments	(148,781)	-	-	-	-	-	-
FY 2019 - Remaining Payments	(602,220)	-	-	-	-	-	-
FY 2020 - Remaining Payments	(834,667)	-	-	-	-	-	-
Future NPS Annual Allocations	-	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
Planned Projects							
*Millville City - Hardship Design Advance	(347,000)						
Total Obligations	(6,849,742)	(1,276,641)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
HGF Unobligated Funds	$ 2,917,915	$ 4,315,910	$ 4,862,331	$ 5,306,810	$ 5,712,506	$ 6,076,616	$ 6,389,622

*WQB Agenda Items

State of Utah
Wastewater Project Assistance Program
Project Priority List

As of Feb 18 2020

Rank	Project Name	Funding Authorized	Total Points	Point Categories			
				Project Need	Potential Improvement	Population Affected	Special Consideration
1	Provo City	x	144	50	24	10	60
2	Central Valley Water Reclamation Facility	x	143	50	23	10	60
3	South Davis Sewer District	x	138	50	18	10	60
4	Millville City		114	45	46	3	20
5	Wellington City		74	10	21	3	40
6	Lewiston City		67	10	16	1	40
7	Kane County Water Conservancy District (Duck Creek)	x	62	40	21	1	0

DWQ-2020-006675

State of Utah

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DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
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MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD

THROUGH: John Mackey, P.E.

FROM: Emily Cantón

DATE: March 25, 2020

SUBJECT: Request for Public Comment on the FY 2020 Intended Use Plan

The Division of Water Quality is requesting approval from the Utah Water Quality Board to initiate the public comment period for review of the FY 2020 Intended Use Plan.

As a condition of CWSRF funding, the U.S. Environmental Protection Agency requires that the State of Utah provide an annual IUP. The IUP identifies both long and short-term goals and addresses specific program requirements such as additional subsidy, green project reserve, and proportionality of state match. The IUP also contains the Project Priority List which shows current projects ranked using criteria like project need, potential improvement, and population affected. However, due to the dynamic nature of wastewater projects, the documents will be updated on an ongoing basis throughout the fiscal year. The Water Quality Board will be apprised of these updates by way of the Financial Status Report, the Project Priority List, and feasibility reports.

The Division of Water Quality will publish notification in the newspaper to advertise the IUP. Staff will post the document on the Division of Water Quality's website for public review and comment.

Following the public comment period, the IUP will be submitted to EPA as part of the 2020 CWSRF Capitalization Grant application.

DWQ-2020-006806

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www.deq.utah.gov

UTAH DEPARTMENT of ENVIRONMENTAL QUALITY

State Revolving Fund Intended Use Plan FY20

Prepared by
The Division of Water Quality

March 2020

STATE REVOLVING FUND INTENDED USE PLAN

FY20

Prepared by

Engineering Section and Administrative Services

Utah Department of Environmental Quality
Division of Water Quality
195 North 1950 West
Salt Lake City, UT 84116

March, 2020

CONTENTS

CHAPTER 1. Introduction

The Intended Use Plan is used by the Department to apply for the EPA Capitalization Grant. The primary purpose of the Plan is to identify current and projected projects that may be awarded funding from federal grant awards. The federal award for FY20 is estimated to be $8,458,000. See Table 2 for a list of State Revolving Fund projects. In addition, the Plan identifies current and projected projects that may be awarded from State monies, including the Utah Wastewater Loan Program and Hardship Grant Funds. See Table 3 and 4 for a list of these respective projects.

As required under Sections 606(c) and 610(b) of the Clean Water Act, the State of Utah has prepared an Intended Use Plan (IUP) for the Clean Water State Revolving Fund (CWSRF) program. The purpose of the IUP is to facilitate the negotiation process for the Fiscal Year 2020 CWSRF Capitalization Grant agreement. This IUP outlines the short-term and long-term goals of the program and proposes a schedule of payment between the Department of Environmental Quality – Division of Water Quality and the Environmental Protection Agency – Region 8. This document also describes the intended uses for: the State Revolving Fund (SRF), the Utah Wastewater Loan Fund (UWLF), and the Hardship Grant Funds (HGFs). All data provided in the 2020 IUP are projections of funding for the listed projects. Ultimately, the Utah Water Quality Board will determine loan amounts and financing terms as projects are presented for authorization.

The CWSRF is a financial assistance program that provides low-cost financing for treatment works, sewerage systems, storm water projects, decentralized systems, and nonpoint source projects. The operation of Utah's CWSRF program is coordinated between the Utah Water Quality Board (the Board) and the Department of Environmental Quality – Division of Water Quality. Projects financed through the State Revolving Fund may receive funding from the following sources: (a) SRF Capitalization Grants; (b) SRF loan repayments; and (c) State matching funds. Occasionally, an SRF-eligible project will be financed through the Utah Wastewater Loan Program or Hardship Grant Funds. If this occurs, the project may be removed from the SRF Project Priority List. Similarly, if an SRF-eligible project does not proceed, it may be removed from this list. The Intended Use Plan includes any project listed on the FY 2020 Project Priority List as well as any unanticipated projects that may be added during the year. Projects are listed on the Project Priority List prior to being presented to the Water Quality Board for authorization. Projects will be considered for funding according to their priority and readiness to proceed.

CHAPTER 2. Program Operations

Since its inception in 1989, Utah's CWSRF program has received appropriations from the federal government through capitalization grants. For FY20, Utah estimates its capitalization grant award will be approximately $8,458,000.

In addition to federal dollars, The Department of Environmental Quality – Division of Water Quality is required to provide a twenty percent (20%) state match. Utah has met the state match requirement by using money from the Utah Wastewater Loan Fund (UWLF). Revenues into the UWLF are comprised of principal repayments from state loans and from a state sales tax allocation. For FY20, Utah anticipates receiving its full measure of sales tax dollars, which is $3,587,500. The entire 20% state matching amount will be used toward eligible project costs before draws are made from the capitalization grant. Once the requirement is met, draws will be made from the federal award as a 100% federal share.

The Department of Environmental Quality – Division of Water Quality will use SRF administrative funds of up to $400,000 for costs associated with administering the program. In addition, loan origination fees, equal to 1% of the principal loan amount, are charged to loan recipients. That revenue may also be used for program administration expenses. The Division of Water Quality estimates that $938,000 will be collected from loan origination fees by the end of Fiscal Year 2020.

2.1 Transfer of Clean Water State Revolving Funds

The Water Quality Board and Division of Water Quality reserve authority to transfer funds from the Clean Water SRF program to the Drinking Water SRF (DWSRF) program. The amount reserved for future transfers is up to 33% of the DWSRF capitalization grant award. The table below indicates the reserved transfer amount by award year.

For FY20, the projected amount of funds to be transferred is $0, with no short- or long-term impacts on the fund. Justification for any transfers to the Drinking Water SRF program, including amount, type of funds,and fund impact, will be documented in a future Intended Use Plan (IUP).

The intended use plan will reserve the authority to transfer funding to the DWSRF program. A Memorandum of Understanding between the divisions to process the actual transfers will require the Water Quality Board approval.

TABLE 1 – TRANSFER AMOUNTS

Award Year	*DWSRF Capitalization Grant Award*	*Reserved Transfer Amount*
2019	*$11,004,000*	*$3,631,320*
2020	*$11,011,000*	*$3,633,630*
	Total	*$7,264,950*

2.2 Extended Financing Terms

As of July 1, 2019, the Utah Water Quality Board has authorized extended financing to three SRF recipients: Central Valley Water Reclamation Facility, South Salt Lake City, and Provo City. The Division of Water Quality estimates that the long term impact of extended financing on the SRF program is less than a 1% revolving level reduction over 60 years. This estimate does not include an adjustment for inflation.

In cases of extreme hardship, the maximum affordable loan amount may not provide sufficient capital to cover project costs. In these cases, the Board would be requested to provide hardship grant funds to make these projects feasible. Extended-term financing can increase the loan amount that a community qualifies for under the 1.4% median adjusted gross household income (MAGI) affordability guideline. The extended terms also benefit the SRF program by replacing an award of grant dollars with additional loan repayments, albeit in years 21-30.

2.3 Additional Subsidization

The FY20 capitalization grant may allow states to provide additional subsidization in the form of principal forgiveness and negative interest loans. A minimum of $835,800 and maximum of $2,574,000 additional subsidization amounts will be outlined in the programmatic terms and conditions of the award. The Water Quality Board uses principal forgiveness agreements as its mechanism for awarding additional subsidization.

Additional subsidy may be provided to disadvantaged communities, communities addressing water-efficiency or energy-efficiency goals, communities mitigating storm water runoff, or to encourage sustainability. For the Water Quality Board to qualify a community as disadvantaged, the community must have a demonstrated hardship based on its cost of sewer service relative to 1.4% of the MAGI, unemployment, poverty level, or economic trends. Table 2: FY20 List of SRF Projects identifies those projects that may meet any additional subsidization requirement. However, the Water Quality Board may authorize principal forgiveness to additional projects presented for authorization during the year.

2.4 Green Project Reserve

The FY20 capitalization grant allocation requires that, to the extent there are sufficient eligible projects applications, not less than 10% of the SRF funds shall be used for projects that address green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities. For The required amount for FY20 is $835,800. The State of Utah will meet this objective by identifying projects that meet green infrastructure requirements and providing funding, in whole or in part, as they proceed to construction. Table 2: FY20 List of SRF Projects identifies projects that may meet the Green Project Reserve requirement.

2.5 Program Assurances

The State of Utah must comply with its Operation Agreement with EPA and Utah Administrative Code, R-317-102, Utah Wastewater State Revolving Fund (SRF). Assurances include:

- Section 602(a)-Environmental Reviews
- Section 602(b)(3)-Certify binding commitments within one year
- Section 602(b)(4)-Certify expeditious and timely expenditures
- Section 602(b)(5)-First use for enforceable requirements

The Division of Water Quality will complete the one-page worksheet through the Clean Benefits Reporting database for all binding commitments in the quarter that they are made.

CHAPTER 3. CWSRF Project Funding

Eligible projects to be funded by the SRF include loans closed with remaining draws, authorized loans, and anticipated loans. Loans closed with remaining draws are projects that are currently under construction. Authorized loans are projects that have been authorized by the Utah Water Quality Board and are in the design phase. Anticipated loans are projects that are in the beginning stages of planning.

Funding through the SRF can include federal dollars from the capitalization grant awards, principal repayments, interest payments, and investment fund interest earnings. Table 2 shows the projects that are expected to be funded from the Clean Water SRF. Projects must meet specific programmatic requirements including federal cross cutters and "super cross-cutters," Davis-Bacon wages, American Iron and Steel (AIS), NEPA-like environmental review, Single Audit Act, Disadvantaged Business Enterprise (DBE), and Architectural and Engineering Services procurement.

As determined by the Utah Water Quality Board, SRF loan recipients may be charged a hardship grant assessment in lieu of interest. Upon collection, the hardship grant assessment will be placed into the Federal Hardship Grant Fund. If a hardship grant assessment is derived from a loan funded directly by EPA Capitalization Grant monies, the assessment shall be used for purposes identified in 40 CFR Part 31.25. If a hardship grant assessment is derived from a loan funded by SRF loan repayments, the assessment may be used to provide grants to communities for projects that are economically unfeasible without grant assistance.

3.1 Long Term Goals

1. Provide a permanent funding source for water quality construction projects that supplements a community's own resources and/or other funding sources.

2. Distribute SRF funds to projects with the highest water quality and infrastructure needs by evaluating and prioritizing proposed projects throughout the state.

3. Support EPA's Sustainability Policy by balancing a community's economic and water quality needs with the perpetuity of the SRF program.

4. Assist communities with all phases of a project, including sufficient planning, project design, environmental work, and construction.

3.2 Short Term Goals

1. Present eligible projects to the Water Quality Board for authorization and assist communities through the application and award process.

2. Collaborate with other agencies (e.g., Utah Permanent Community Impact Board, U.S. Department of Agriculture Rural Development, and U.S. Army Corps of Engineers) to sufficiently fund projects.

3. Solicit and fund eligible nonpoint source and storm water projects.

4. Provide funding, equal to at least ten percent (10%) of the capitalization award, for energy efficiency and recycled water and water reuse projects to the extent such projects exist.

5. Increasing the profile of the SRF program as a potential funding source for low income and rural Utah communities.

TABLE 2 – LIST OF FY20 SRF PROJECTS

LOAN RECIPIENT	PERMIT NUMBER	NEEDS CATEGORY	ASSISTANCE AMOUNT	FUNDING TYPE	INTEREST RATE	TERM (YRS)	ADDITIONAL SUBSIDY AMOUNT (Principal Forgiveness)	GREEN PROJECT RESERVE AMOUNT	BINDING COMMITMENT / CONSTRUCTION START	INITIATION OF OPERATION
LOANS CLOSED WITH REMAINING DRAWS										
Duchesne City	UT0020095	I-Secondary Treatment	$2,700,000	1st Round	0.25%	30	$400,000	$262,295	May-2017	Jul-2019
Logan City	UT002199920	II-Advanced Wastewater Treatment	$69,131,000	2nd Round	0.75%	20			Mar-2016	Jan-2022
Logan City	UT002199920	II-Advanced Wastewater Treatment	$20,000,000	2nd Round	1.50%	30			Dec-2018	Jan-2022
Moab City	UT0020419	I-Secondary Treatment	$14,200,000	1st Round	1.15%	20		$502,937	Apr-2017	Nov-2019
Salem City	UT0020249	I-Secondary Treatment	$20,000,000	2nd Round/1st Round	1.15%	30			Jul-2018	Aug-2022
San Juan Spanish Valley SSD	See Moab	IVa-New Collectors	$968,000	1st Round	0%	30	$1,997,000		Jan-2019	Jan-2020
AUTHORIZED LOANS										
Central Valley WRF	UT0024392	I-Secondary Treatment	$65,100,000	1st Round	1.50%	20			Dec-2018	Dec-2024
Provo City	UT0021717	II- Advanced Treatment	$75,800,000	1st Round	0.50%	20	$2,000,000		Dec-2018	Jan-2025
South Davis Sewer Dist	UT0021628	II-Advanced Treatment	$28,851,000	1st Round	0.55%	20		$26,351,000	Feb-2017	Dec-2024
South Salt Lake City	See CVWRF	I-Secondary Treatment	$2,413,000	1st Round	0%	20	$2,000,000		Dec-2018	Dec-2024
ANTICIPATED LOANS										
Millville City	N/A	Iva-New Collectors	$8,400,000				$2,000,000		Mar-2020	Dec-2020
Spanish Fork City	UT0020109	II-Advanced Treatment	Unknown						Jun-2024	
TOTAL			**$307,563,000**				**$8,397,000**	**$27,116,232**		

CHAPTER 4. Utah Wastewater Loan Program

The Utah Wastewater Loan program is a state-funded loan program similar to the SRF. Revenue for the Utah Wastewater Loan program is derived from sales tax dollars and principal repayments. Monies may be authorized in the form of loans or interest-rate buy downs.

Projects eligible for funding through the Utah Wastewater Loan program have been divided into three categories: closed loans with remaining draws, authorized loans, and anticipated loans. Closed loans with remaining draws are projects that have held loan closing and are currently under construction. Authorized loans are those projects which have received authorization from the Utah Water Quality Board, but have not yet held loan closing and are still in the planning or design phase. Anticipated loans are those projects that may be presented to the Utah Quality Board for authorization in the next fiscal year.

Please refer to Table 3 for a list of projects to be funded from the Utah Wastewater Loan Fund.

TABLE 3 – LIST OF FY20 UTAH WASTEWATER LOAN PROGRAM PROJECTS

LOAN RECIPIENT	ASSISTANCE AMOUNT	INTEREST RATE	TERM (YEARS)	BINDING COMMITMENT	CONSTRUCTION START	CONSTRUCTION END
LOAN CLOSED WITH REMAINING DRAWS						
Eagle Mountain City	1,793,000	1%	20	Mar-2018	Aug-2018	Mar-2021
Grantsville City	4,880,000	1.75%	30	Sep-2018	Start Sep 2018	Apr-2020
South Salt Lake	6,835,000	0%	20	Dec-2018	Start Feb 2020	June-2024
AUTHORIZED LOANS						
KCCWD-Duck Creek	1,000,000	0%	30	Aug-2018	May-2020	Nov-2022
ANTICIPATED LOANS						
Lewiston City	3,064,000	Unknown	Unknown	Unknown	Sept 2017	Jul-2021
Millville	3,200,000	Unknown	Unknown	Unknown	2020	2023
TOTAL	**$20,772,000**					

CHAPTER 5. Hardship Grant Funds

The State of Utah provides hardship grants for several types of projects. First, hardship grant funds may be authorized as planning advances or grants and design advances. Advances are repaid once construction funding has been secured through a loan closing. Second, funds may be awarded as hardship construction grants to entities that may not otherwise be able to afford to complete an eligible project. The Water Quality Board may consider authorizing a hardship grant when the estimated annual cost of sewer service exceeds 1.4% of the local MAGI. Third, hardship grants may be awarded for water quality improvement projects such as non-point source, water quality studies, and educational outreach efforts. Projects eligible for Hardship Grant Funds may be added to the list once authorization has been received from the Board.

Please refer to Table 4 for a list of projects to be funded from the Hardship Grant Funds.

TABLE 4 – LIST OF FY20 HARDSHIP GRANT FUND PROJECTS

Recipient	Assistance Amount Balance	Type
HARDSHIP GRANTS		
Duchesne City	$122,488	Construction Grant
Eagle Mountain City (White Hills)	510,000	Construction Grant
Emigration SID	26,158	Planning Grant
Green River	54,000	Planning Grant
Kane County WCD (Duck Creek)	2,034,500	Design/Construction Grant
Wasatch Co Study	100,000	Hardship Grant
USU Ext Study	3,083	Hardship Grant
Lewiston City	186,000	Design Advance
Millville City	347,250	Design Advance
Wellington City	350,000	Design Grant
NON-POINT SOURCE GRANTS		
DEQ - Ammonia Criteria	$46,630	NPS Grant
DEQ – Nitrogen Transformation Study	14,500	NPS Grant
DEQ – San Juan River Monitoring	125,083	NPS Grant
DEQ-Great Salt Lake Advisory Council	173,009	NPS Grant
Gunnison Irrigation Company	48,587	NPS Grant
Utah Department of Agriculture	385,393	NPS Grant
DEQ - GW Quality Study	5,051	NPS Grant
DEQ – Utah Lake Water Quality Study	206,150	NPS Grant
UofU-Utah Lake Sediment	70,785	Hardship Grant
BYU-Utah Lake Bioassays to Nutrient Limitation	41,798	Hardship Grant
USU-Utah Lake Paleo	155,766	Hardship Grant
FY15 – FY20 Remaining Payments	1,753,711	Various NPS Grants
TOTAL	**$6,759,942**	

CHAPTER 6. Payment Schedule

Utah's Clean Water SRF has met "first use" requirements of Section 602(b) (5). SRF funds will be distributed using the method, criteria, and eligible activities that are outlined in Section R-317-101 and 102 of the Utah Administrative Code. The methods and criteria provide affordable assistance as well as maximum benefit to the long-term viability of the fund.
If the dollar amount of projects in the FY 2020 Intended Use Plan exceeds the actual amount of funds available during the planning period, one of the following may occur:

1. Projects listed may not be funded.

2. Projects may be funded using available credit enhancement techniques.

3. Projects may need to be delayed until funds are available.

Please see the CASH FLOW PROJECTIONS for the detail of revenue and expenses for the State Revolving Fund, Utah Wastewater Loan Fund, and Hardship Grant Funds.

6.1 Cash Flow Projections – State Revolving Fund

STATE REVOLVING FUND (SRF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022
Funds Available			
2016 - 2019 Capitalization Grants	24,671,801	-	-
2017 - 2019 State Match	4,800,000	-	-
Future Capitalization Grants (estimated)	8,000,000	8,000,000	8,000,000
Future State Match (estimated)	1,600,000	1,600,000	1,600,000
SRF - 2nd Round	85,486,526	107,806,133	58,649,674
Interest Earnings at 2.866%	816,767	3,090,047	1,681,076
Loan Repayments	4,007,334	14,684,494	18,091,792
Total Funds Available	129,382,428	135,180,674	88,022,541
Project Obligations			
Duchesne City	(27,295)	-	-
Logan City	(10,000,000)	(13,131,000)	(10,000,000)
Moab City	(80,000)	-	-
Salem City	(469,000)	-	-
Loan Authorizations			
Central Valley Water Reclamation Facility	(5,000,000)	(15,000,000)	(23,850,000)
Provo City	-	(15,000,000)	(25,000,000)
*South Davis Sewer District (with NPS)	(6,000,000)	(20,000,000)	(2,851,000)
South Salt Lake City (B)	-	-	(4,410,000)
Planned Projects			
Future Project Reserve	-	(5,000,000)	(5,000,000)
*Millville City	-	(8,400,000)	-
Total Obligations	(21,576,295)	(76,531,000)	(71,111,000)
SRF Unobligated Funds	$ 107,806,133	$ 58,649,674	$ 16,911,541

6.2 *Cash Flow Projections – Utah Wastewater Loan Fund*

UTAH WASTEWATER LOAN FUND (UWLF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022
Funds Available			
UWLF	20,485,716	11,603,732	6,813,524
Sales Tax Revenue	-	3,587,500	3,587,500
Loan Repayments	864,441	3,357,992	3,031,806
Total Funds Available	21,350,157	18,549,224	13,432,830
General Obligations			
State Match Transfers	(6,400,000)	(1,600,000)	(1,600,000)
DWQ Administrative Expenses	(405,425)	(1,621,700)	(1,621,700)
Project Obligations			
South Salt Lake City (A)	(1,941,000)	(2,249,000)	(2,249,000)
Loan Authorizations			
Kane Co Water Conservancy Dist (Duck Creek)	(1,000,000)	-	-
Planned Projects			
*Millville City	-	(3,200,000)	-
*Lewiston City	-	(3,065,000)	-
Total Obligations	(9,746,425)	(11,735,700)	(5,470,700)
UWLF Unobligated Funds	$ 11,603,732	$ 6,813,524	$ 7,962,130

6.3 *Cash Flow Projections – Hardship Grant Funds*

HARDSHIP GRANT FUNDS (HGF)	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022
Funds Available			
Beginning Balance		2,917,915	4,371,544
Federal HGF Beginning Balance	6,784,759	-	-
State HGF Beginning Balance	1,923,990	-	-
Interest Earnings at 2.866%	83,206	83,636	125,302
UWLF Interest Earnings at 2.866%	195,727	388,233	315,394
Hardship Grant Assessments	632,902	974,418	854,384
Interest Payments	147,072	403,983	373,034
Advance Repayments	-	880,000	
Total Funds Available	9,767,657	5,648,185	6,039,658
Financial Assistance Project Obligations			
Eagle Mountain City - Construction Grant	(510,000)	-	-
Emigration Sewer Imp Dist - Planning Grant	(26,158)	-	-
Green River	(54,000)	-	-
Kane Co Water Conservancy Dist (Duck Creek) - Hardship Grant	(2,034,500)	-	-
Lewiston City - Hardship Design Advance	(186,000)	-	-
Millville City - Hardship Design Advance	(347,000)		
USU Extension - Hardship Grant	(3,083)	-	-
Wasatch Co. Study	(100,000)		
Wellington City - Hardship Design Grant	(350,000)		
Non-Point Source/Hardship Grant Obligations			
Fitzgerald ARDL interest-rate buy down	(51,056)	-	-
McKees ARDL interest-rate buy down	(55,261)	-	-
Munk Dairy ARDL interest-rate buy down	(16,017)		
(FY11) Gunnison Irrigation Company	(48,587)	-	-
(FY12) Utah Department of Agriculture	(385,393)	-	-
(FY13) DEQ - Great Salt Lake Advisory Council	(173,009)	-	-
(FY15) DEQ - Ammonia Criteria Study	(46,630)	-	-
(FY15) DEQ - Nitrogen Transformation Study	(14,500)	-	-
(FY17) DEQ - GW Quality Study	(5,051)	-	-
(FY17) DEQ - Utah Lake Water Quality Study	(206,150)	(172,749)	-
UofU - Utah Lake Sediment - Water Nutrient Interactions	(70,785)	-	-
BYU - Bioassays to Investigate Nutrient Limitation	(41,798)	(26,282)	-
USU - Historic Trophic State/Nutrient Concentrations Paleo	(155,766)	(77,609)	-
FY 2015 - Remaining Payments	(4,223)	-	-
FY 2016 - Remaining Payments	(2,386)	-	-
FY 2017 - Remaining Payments	(29,723)	-	-
FY 2018 - Remaining Payments	(148,781)	-	-
FY 2019 - Remaining Payments	(602,220)	-	-
FY 2020 - Remaining Payments	(834,667)	-	-
Future NPS Annual Allocations	-	(1,000,000)	(1,000,000)
Planned Projects			
*Millville City - Hardship Design Advance	(347,000)		
Total Obligations	(6,849,742)	(1,276,641)	(1,000,000)
HGF Unobligated Funds	$ 2,917,915	$ 4,371,544	$ 5,039,658

CHAPTER 7. Project Priority List (PPL)

State of Utah

Wastewater Project Assistance Program

Project Priority List

As of Feb 26 2020

Rank	Project Name	Funding Authorized	Total Points	Point Categories			
				Project Need	Potential Improvement	Population Affected	Special Consideration
1	Provo City	18-Dec	144	50	24	10	60
2	Central Valley Water Reclamation Facility	18-Dec	143	50	23	10	60
3	South Davis Sewer District	17-Feb	138	50	18	10	60
4	Millville City		114	45	46	3	20
5	Wellington City		74	10	21	3	40
	Lewiston City		67	10	16	1	40
7	Kane County Water Conservancy District (Duck Creek)	18-Aug	62	40	21	1	0

DWQ-2020-006808

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

WATER QUALITY BOARD
FEASIBILITY REPORT FOR WASTEWATER TREATMENT
REAUTHORIZATION

APPLICANT:	South Davis Sewer District 1800 West 1200 North West Bountiful, UT 84087
PRESIDING OFFICIAL:	Dee C. Hansen, P.E., Chairman of the Board
TREASURER/RECORDER:	Dal D. Wayment P.E., Treasurer
CONSULTING ENGINEER:	L. Scott Rogers, P.E. Principal Aqua Engineering 533 West 2600 South #275 Bountiful, UT 84010 Telephone: 801-299-1327
BOND COUNSEL:	James Burr, Attorney at Law Chapman and Cutler LLP 215 South State Street Salt Lake City, UT 84111 Telephone 801-533-0066

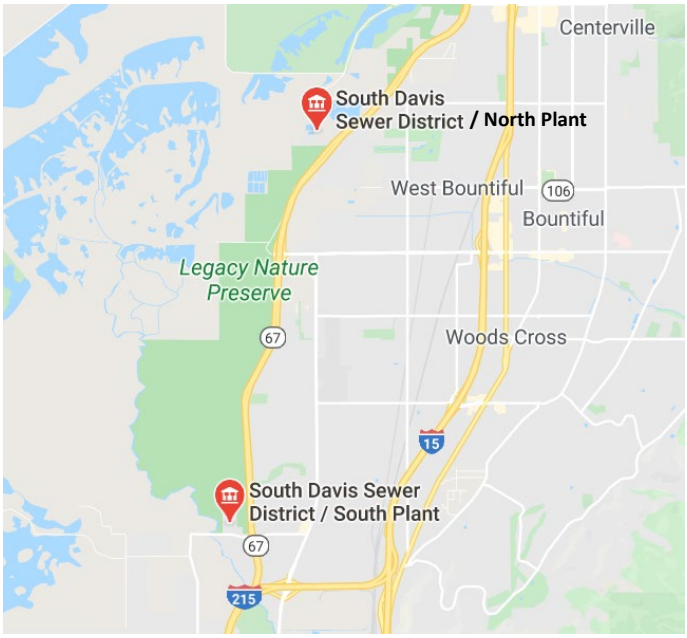
APPLICANT'S REVISED MARCH 2020 REQUEST:

South Davis Sewer District (SDSD) is requesting a construction loan from the Utah Water Quality Board (Board) to be used for construction of a new tertiary wastewater treatment extension at SDSD's North Plant. SDSD is requesting a *loan of $14,176,000, including $1,000,000 in principal reserved for SRF eligible nonpoint source project funding.*

APPLICANT'S LOCATION:

South Davis Sewer District is located in Davis County and provides wastewater services to the southern half of Davis County; consisting of Bountiful, Centerville, North Salt Lake, West Bountiful, Woods Cross, and the unincorporated areas south of Lund Lane. South Davis Sewer District operates two treatment plants a North Plant (12 MGD) in West Bountiful and a South Plant (4 MGD) in North Salt Lake.

MAP OF APPLICANT'S LOCATION



BACKGROUND:

The District owns two wastewater treatment plants and provides sewer services to 27,124 equivalent residential units (ERU). South Davis Sewer District (SDSD) originally requested a construction loan from the Board for construction of a new tertiary wastewater treatment extension at SDSD's South Plant in February 2017. SDSD was authorized by Board in February 2017 for a *loan of $28,851,000 with an interest rate of 0.55% and a 20-year term, including $2,500,000 in principal reserved for SRF eligible nonpoint source project funding.* Based on discussions at the March 3, 2020 Water Quality Finance Committee SDSD elected to reduce their funding request due to the limitations on Board funding. SDSD's is hopeful the Board will consider a reduction in interest rate on this reduced funding request due to having to secure the difference in funding on the private market.

SDSD is facing more stringent effluent limits for phosphorus and ammonia. In December 2017, the ammonia effluent limits were lowered on both the South and North Plants based on an

updated Jordan River Watershed wasteload analysis that evaluated all POTWs discharges to the Jordan River. At the North Plant, monthly average effluent limits were reduced for: Spring (Apr-Jun) from 15.0 mg/L to 12.0 mg/L, and Summer (Jul-Sep) 9.0 mg/L to 8.0 mg/L. At the South Plant, monthly average effluent limitations were reduced for: Winter (Mar) 15.0 to 8.0 mg/L, Spring (Apr-Jun) from 20.0 mg/L to 12.0 mg/L, and Summer (Jul-Sep) 20.0 mg/L to 8.0 mg/L. SDSD has found it challenging to comply with these limitations because their trickling filters are not always effective for removal of ammonia. In addition, the South Plant has been struggling with an industrial discharger coming online and overloading the plant with high ammonia loads. In addition on January 1, 2020, the technology based phosphorus effluent limit (TBPEL) with its annual average of 1.0 mg/L total phosphorus limit became effective. Both plants are currently complying with this standard using chemical addition.

PROJECT NEED

SOUTH PLANT UPDATE

The SDSD South Plant was originally placed in service in 1962, and was last expanded and upgraded in 1994. The SDSD South Plant serves the cities of North Salt Lake, Woods Cross and a portion of Bountiful. It has a design flow rate of 4 million gallons per day (MGD). The South Plant uses a two-stage trickling filter treatment process with chlorination and dechlorination. The plant consists of fine screens, one grit chamber, three primary clarifiers, one primary trickling filter, one intermediate clarifier, two final trickling filters, two final clarifiers, two granular media filters (not in use), one chlorine contact chamber, dechlorination, a re-aeration basin, sludge gravity thickener, two anaerobic digesters run in series, and sludge drying beds.

Wasatch Resource Recovery (WWR) is Utah's first and only anaerobic digestion system dedicated to food waste conversion operated under a public-private partnership between ALPRO Energy & Water and SDSD. WRR processes organic wastes such as food scraps, liquid waste and food manufacturing waste products. The process turns the organic wastes into sustainable resources: biogas and bio-based fertilizer. Construction of WRR was completed in 2018 and accepted the first loads of food waste in February 2019. WRR was expected to generate a significant load of ammonia to the South Plant. Based on the expected ammonia load and the TBPEL, the SDSD elected to pursue an innovative algae treatment technology with the company CLEARAS.

CLEARAS offers a biological-based wastewater treatment solution for nutrient recovery. CLEARAS promises a technology to cost-effectively recover phosphorus and nitrogen. CLEARAS is a bolt-on technology utilizing glass tubing and LED lights to grow algae, a membrane for algae separation, a centrifuge to dewater the algae, and a drum drier to dry the algae into a marketable product.

In 2017, the Board authorized a construction loan for $26.3 million toward the construction of a 4.0 mgd CLEARAS treatment system at the South Plant. To certify algae for future sale, SDSD

constructed a 10 gpm South Plant Pilot Plant (South Pilot). Utilizing the South Pilot, DWQ staff required SDSD to demonstrate CLEARAS's treatment performance and to establish design parameters for the full scale construction. Over the span of the past three years the South Pilot has failed to consistently and effectively treat South Plant effluent phosphorus. In conjunction with these pilot studies, numerous experiments and investigations were conducted. The results of these investigations indicated that the South Plant wastewater inhibits the growth of algae which is critical to CLEARAS's treatment system. Although SDSD has not been able to pin point the source of this inhabitation/toxicity, the most likely cause is wastewater from two refineries that are connected to the plant. It is believed CLEARAS's treatment system works best at plants that serve municipal wastewater without significant industrial inputs. This led SDSD to propose to move the CLEARAS treatment system to the North Plant.

With the startup of the WRR next to the South Plant, the South Plant has begun receiving a higher load of ammonia and has been unable to treat this load and comply with effluent limitation. Effluent limit exceedances began in July 2019 and peaked in January 2020 at 119 mg/L, well in excess of the 30 mg/L daily maximum effluent limitation. Based on these discharges, DWQ issued a Notice of Violation on December 18, 2019 to SDSD. Settlement and compliance plans for resolution of these violations are being negotiated.

Due to these conditions SDSD is, at least for now, abandoning the CLEARAS treatment system for use at the South Plant.

NORTH PLANT UPDATE

The SDSD North Wastewater Treatment Plant (North Plant) serves the cities of Centerville, Woods Cross, West Bountiful and portions of Bountiful with a daily average design flow of 12 million gallons per day (MGD) and a design population equivalent of 75,000. The facility functions in single-stage trickling filter mode. Unit operations and processes at the North Plant include influent pumping, screening, grit removal, primary clarification, biological processing using trickling filters, secondary clarification, chlorination, and dechlorination prior to release into the State Canal. Sludge generated during unit processes is stabilized in two-stage mesophilic anaerobic digesters and dried in drying beds.

During 2018, SDSD was investigating why CLEARAS at the South Pilot wasn't working. As part of the investigation, CLEARAS supplied a mobile pilot system to the North Plant (North Pilot). The North Pilot was operated from approximately September-November 2018. During this operation the North Pilot ran with no issues on North Plant effluent reducing TP concentrations to well below 1.0 mg/L. To further evaluate the South Pilot problems, South Plant effluent was trucked to the North Pilot and the North Pilot ceased proper treatment of this effluent after approximately two weeks. Later, North Plant effluent was trucked to the South Pilot with successful results. At this time, the South Pilot has been successfully running on trucked North Plant effluent since December 4, 2019. From December 4, 2019 to January 13, 2020 the average effluent North Plant TP concentration trucked to the South Pilot was 1.69 mg/L and for this period, the South Pilot produced an average effluent concentration of 0.20 mg/L total

phosphorus. From January 14, 2020 to February 12, 2020 the average effluent North Plant TP concentration trucked to the South Pilot was 1.03 mg/L. During this time, the South Pilot produced an average effluent concentration of 0.11 mg/L total phosphorus. Lower North Plant TP concentrations observed during this period resulted from chemical additions at the North Plant for phosphorus control. Further, during this run ammonia was monitored and was being reduced from an average concentration of 10.5 mg/L to an average of 1.5 mg/L or less.

ALTERNATIVES EVALUATED:

These pilot studies have led SDSD to prepare a Capital Facilities Plan to evaluate projects needed at the South and North Plants.

The alternatives evaluated for the South Plant are as follows.

	Capital Costs	O&M	20-Year Net Present Value
	(in millions)		
Chemical precipitation and Denitrification Filter	$13	$1.5	$35
Biological Nutrient Removal	$36	$0.8	$48
Chemical Addition and Anoxic Basin	$20	$0.5	$28
Aeration for Ammonia Nitrification	$6	$0.3	$10

Based on this analysis, SDSD plans to add a nitrification tank to the South Plant at the approximate cost of $6.1 million. This project will convert the ammonia to nitrate and is anticipated to be in compliance with ammonia effluent limitations by June 2021. In addition to this aeration project, the South Plant is in need of $4.2 million in Plant Rehabilitation. To complete these projects at the South Plant, SDSD secured a $12.2 million loan from Zions Bank at a 2.05% interest rate, fixed for 15 years and variable for the last 5 years.

The alternatives evaluated at the North Plant are as follows.

	Capital Costs	O&M	20-Year Net Present Value
	(in millions)		
Chemical precipitation and Denitrification Filter	$19.4	$2.9	$84
Biological Nutrient Removal	$58	$1	$79
Chemical Addition and Anoxic Basin	$31	$1	$52
Without algae revenue			
6 mgd of CLEARAS	$37	$1.4	$66
12 mgd of CLEARAS	$64	$1.4	$116
With projected algae revenue			
6 mgd of CLEARAS	$37	-$1.1	$20
12 mgd of CLEARAS	$64	-$2.6	$22

Based on this alternatives analysis and the pilot projects, SDSD plans to pursue a 6 mgd CLEARAS project at the North Plant. SDSD believes in the CLEARAS treatment process and has a contract currently to sell the algae for $0.75 a pound for the next few years. This project is projected to be completed in mid-2024. However, this project could be interrupted as the North Plant has exceeded its monthly average ammonia effluent limitation during November 2019, December 2019, and January 2020. If these exceedances continue, the North Plant will need to investigate expediting this project or implementing an alternative nitrification project such as the one the South Plant is undertaking.

PROJECT DESCRIPTION:

The proposed project is to implement a tertiary treatment technology that can be incorporated into the treatment train without significant modification to, or disruption of, the existing plant. The proposed project will add an algae blending tank (trickling filter effluent equalization tank), greenhouses, the algae reactor system, membrane filtration tanks, ultraviolet light (UV) disinfection, centrifuges (for dewatering the algae product), drum driers, and associated infrastructure. The project is proposed to treat 6.0 mgd or about half the flow of the North Plant. The project will remove total phosphorus from 1.8 mg/L to 0.2 mg/L. This stream would then be blended with the remainder of the plant effluent (about 6 MGD) resulting in an average total effluent concentration of less than 1.0 mg/L. In addition, the project should remove ammonia down to 1.5 mg/L resulting in a blended effluent ammonia concentration of approximately 6.0 mg/L, which will comply with the ammonia effluent limits at the North Plant.

POSITION ON PROJECT PRIORITY LIST:

This project is ranked **No. 3** of 9 projects on the Wastewater Treatment Project Priority List.

POPULATION GROWTH:

The population of Davis County is projected to grow at an annual rate of 1.6% by the Governor's Office of Planning and Budget. Current population and associated effective residential units (ERUs) are shown in the table below.

	SDSD
2014 Population	91,359
2014 ERUs	27,124
2040 Population	105,608
2040 ERUs	38,474

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT:

SDSD has conducted multiple public Board meetings over the past 2 years regarding their treatment plant projects. The SDSD Board authorized SDSD management to pursue funding for

the project. SDSD is currently proposing a $2.50 per year rate increase for five years. Overall, the public sentiment at this hearing was that the public was impressed by the length of time since the last rate increase.

IMPLEMENTATION SCHEDULE:

The schedule for implementation of the SDSD for the North Plant construction project is as follows:

WQB Introduction	January 30, 2017
WQB Funding Authorization:	February 22, 2017
WQB Reauthorization	February 2020
Bid Opening	December 2021
Complete Construction	December 2024

APPLICANT'S CURRENT USER CHARGE:

The 2018 median adjusted gross income (MAGI) for SDSD is approximately $58,346, which was 22 percent higher that the state average of $48,000. The SDSD had not increased user fees since 1988 but since 2017 has increased them by $5/month. The current user fee is $10 per month per residence or residential equivalent. The District also collects a property tax assessment. Together with the monthly sewer fees, the average monthly fee received per ERU is about $20.27. The maximum affordable sewer fee based on 1.4% of the MAGI is $68.07 per month per ERU.

COST SHARING:

The SDSD has paid for development of the Capital Facilities Plan and will complete the design without need of financial support. The SDSD intends to expedite project preparation by beginning engineering design using a portion of the local contribution. In total, the SDSD will bring $23,659,000 in local contribution to the project.

Funding Source	Cost Sharing	Percent of Project
Local Contribution (cash)	$ 23,659,000	30%
Local Private Loan @ 2.01%	$ 13,176,000	35%
WQB Loan	$ 13,176,000	35%
Total	$ 36,835,000	100%

EFFORTS TO SECURE FINANCING FROM OTHER SOURCES:

Currently, SDSD has been able to secure private funding at 2.05%; however SDSD has stated that securing similar funding for an innovative process might be more challenging. On March 17, 2020 SDSD indicates this rate is down further to 1.71%.

COST ESTIMATE:

The estimated cost of the proposed WWTP project is outlined in the following table:

Item	SDSD Contribution	Funded Project Cost
Legal/Bonding		$ 50,000
DWQ Loan Origination		$ 263,000
Construction	$ 12,543,000	$ 12,863,000
Contingency 25%	$ 6,352,000	
Engineering 15%	$ 4,764,000	
Total	$ 23,659,000	$ 13,176,000
Project Cost	**$ 36,835,000**	

ESTIMATED ANNUAL COST FOR SEWER SERVICE:

Staff prepared a static cost model for this project, provided here as Attachment 1. A second cost model was developed for all the SDSD projects totaling $58 million. This model shows the project is affordable at interest rates above 5.5%. In addition, these cost models do not reflect the projected algae revenue. The SDSD Facilities Plan estimates an income of $2,463,750 a year in revenue from the sale of algae. This is based on an 80% algae recovery and a sales price of $0.60 per pound.

Current market rates index as of March 2020 are as follows:

US 20-year Treasury Bond[1] 1.60%
US 30-year Treasury Bond[2] 1.77%
MBIS Municipal Bond Index, 20-year[2] 2.465%

Starting at an average rate of 2.05%, staff recommends the Board discount this interest rate by 1.1% with a resulting 20 year recommended rate of 0.95%, based on the following factors:

1. The project's need, including water quality protection and regional importance;
2. "Green Project Reserve" contribution;
3. Water Quality Board support for innovation that will benefit the State and advance the state of wastewater technology; and

[1] U.S. Department of The Treasury https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield

[2] EMMA Municipal Securities and Rulemaking Board. https://emma.msrb.org/ToolsAndResources/MarketIndicators

4. First and second round federal funding requirements.

NONPOINT SOURCE PROJECT FUNDING:

Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. Nonpoint source pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. Funding nonpoint source pollution control projects is difficult because the projects are not readily tied to a sufficient revenue stream that would repay a loan, and grant funds are limited. Federal SRF funds can be used to support nonpoint source projects such as: (1) decentralized treatment or septic system rehabilitation or replacement, (2) stormwater best management practices (BMPs) implementation, (3) agriculture and forestry BMPs implementation, (4) conservation easement purchases or land acquisition for riparian protection, (5) wetland protection and construction, (6) underground storage tank remediation and removal, (7) monitoring, capping, and on-site treatment at brownfield sites and sanitary landfills, and (8) remediation of mining sites.

At the time of authorization SDSD requested additional funding to conduct nonpoint source project(s) in partnership with the Board and as part of the District's proposed project. The Board has previously partnered with other utilities to support important nonpoint source projects such as the Ogden River Restoration project that was funded by Central Weber Sewer Improvement District.

The mechanism proposed for funding the joint nonpoint source projects, was to provide loan funds in excess of those required for the base project and then offset the additional loan repayment amount with a reduced interest rate that holds the loan affordability constant. In effect, this mechanism enables the Board to make hardship grant assessment funds available today at their net present value, as opposed to receiving them over the term of a loan as with "interest." Funds used in this manner are subject to the requirements of the SRF grant as opposed to the requirements of the Hardship Grant Fund.

Staff analyzed a loan scenario that would add $1,000,000 in principal to the base loan amount. Then, staff discounted the interest rate in the analysis to arrive at approximately the same annual loan payment as the base loan case. A summary of these scenarios with a base project interest rate of 0.95% and 20 years term (recommended above) is provided in the following tables.

$13,176,000 in Funding with $0 in Non-point source	
Interest Rate	Debt Service
0.70%	$708,291.06
0.75%	$711,907.61
0.80%	$715,534.96
0.85%	$719,173.10
0.90%	$722,822.03
0.95%	**$726,481.73**
1.00%	$730,152.19
1.05%	$733,833.40
1.10%	$737,525.34
1.15%	$741,228.00
1.20%	$744,941.38

$14,176,000 in Funding with $1,000,000 in Non-point source	
Interest Rate	Debt Service
0.00%	$708,800.00
0.05%	$712,527.09
0.10%	$716,265.96
0.15%	$720,016.59
0.20%	$723,778.97
0.25%	**$727,553.11**
0.30%	$731,338.98
0.35%	$735,136.58
0.40%	$738,945.89
0.45%	$742,766.91
0.50%	$746,599.62

Nonpoint Source Funding	WQB Loan Amount	DWQ Staff Recommended Interest Rate	WQB Loan Debt Service	Monthly Sewer Cost/ERU
$0	$13,176,000	0.95%	$908,102	$34.24
$1,000,000	$14,176,000	0.25%	$909,441	$34.24

This analysis shows how the interest rate is reduced from the recommended 0.95% to 0.25% to include $1.0 million in NPS funding. Since the authorization was awarded, DWQ staff and SDSD staff worked to identify high priority nonpoint source projects for this funding. DWQ issued an RFP for low impact development (LID) demonstration projects and identified three priority projects which were presented to the Board in March 2018. The Board voted to use $1,000,000 of the SDSD nonpoint source funding for the following projects:

- $341,000 for the University of Utah
- $347,400 for Woods Cross City
- $311,600 for Sandy City

These awards are contingent on SDSD's loan closing and have not yet been executed. SDSD has again agreed to carry NPS funding with their reauthorized project. Based off the previously Board approved projects and current limitation of funding staff only reanalyzed funding for $1,000,000 in nonpoint source funding.

STAFF COMMENTS:

The proposed advanced biological algae treatment is a developing technology. The District

conducted pilot-scale tests treating North Plant effluent and demonstrated good results in removing ammonia, total inorganic nitrogen, and phosphorus. The technology is currently being scaled up to production (full) scale application in several locations; however, it is not a "time tested" or "tried and proven" technology. If successful, this could be a powerful technology for nutrient removal and energy efficiency at POTWs in Utah and the industry.

As a tertiary "bolt-on" technology with demonstrated capability for nutrient removal and seemingly good potential for producing a steady revenue stream, the technology offers potential for cost effective nutrient control. Important considerations that will affect the cost effectiveness of the technology include: (1) the ability to economically separate and concentrate algae to market specifications; (2) the reliability and robustness of the market for the product algae; and (3) cost of raw materials (e.g., carbon dioxide must be supplied to the algae reactors).

The importance of the algae-product revenue stream to the economic feasibility of the project is at least somewhat facility dependent. Coupled with SDSD's low rates and large service area, this utility is well insulated from the higher risk of implementing a developing / innovative technology in other locations. As an innovative process the project does carry more risk and uncertainty than traditional technologies.

The attached static cost model (Attachment 2) shows that the required user rates will be 0.70% MAGI, well below the Board's affordability criterion of 1.4% MAGI, i.e., a loan is affordable at interest rates that exceed those of the current market. Staff believes the project will satisfy Green Project Reserve capitalization grant requirements.

Staff supports SDSD's project to build an innovative treatment technology with to potential to be a powerful technology for nutrient treatment and treatment sustainability.

In discussion with SDSD on March 17, 2020, the District indicated interest in having the board waive the emergency repair and replacement reserve requirement of the loan. The District indicated that they will continue to meet a debt coverage ratio of 1.25%. Given the financial capacity of the district and its ability to meet our debt coverage requirements this is acceptable. The impact to the District will be a reduction in the net loan payment of the first 6 years of 13%. Staff recommends that the board approve the requested waiver in its special conditions of the authorization.

STAFF RECOMMENDATION:

Staff recommends that the Board authorize a ***loan of $14,176,000 with an interest rate of 0.25% and a 20-year term, including $1,000,000 in principal reserved for SRF eligible nonpoint source project funding.***

1. SDSD must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).

2. SDSD must replace the innovative biological (algae) treatment with a proven conventional process, equipment, and materials capable of meeting the District's UPDES permit if the proposed project cannot consistently meet the requirements of this permit.
3. SDSD is not required to fund and maintain separate emergency repair and replacement reserves for this loan so long and SDSD maintains a minimum debt coverage reserve ratio of 1.25 percent throughout the life of the loan.

Attachments: South Davis Cost Model 1 – North Plant 6 mgd CLEARAS
South Davis Cost Model 2 – All Projects
Nonpoint Source Funding Amount and Interest Rate Options

File:SDSD, Admin, Section 1
DWQ-2020-007103

Attachment 1 – Static Cost Model - South Davis – North Plant 6 mgd CLEARAS

STATIC COST MODEL - South Davis - North Plant 6 mgd CLEARAS with $1,000,000 nonpoint source funding

Project Costs

Legal/Bonding	$ 50,000
DWQ Loan Origination Fee	$ 263,000
North Plant ABNR	$ 25,406,000
Engineering	$ 4,764,000
Contingency (approx 20% const. cost)	$ 6,352,000
Total Project Cost:	$ 36,835,000

Current Customer Base & User Charges

ERU's	27,124
MAGI (2018):	$58,346
Affordable Monthly Rate at 1.4%	$68.07
Current Impact Fee (per ERU):	$1,596.00
Current Monthly User Fee (per ERU)	$20.27
Existing O&M expenses Treatment & Collection	$6,213,949
New O&M expenses Treatment & Collection	$7,563,949
Existing Sewer Debt Service	$937,146

Project Funding		
Applicant Contribution	$	23,659,000
WQB Loan	$	13,176,000
NPS Funding		Varies
Total Project	**$**	**36,835,000**

Funding Conditions

Loan Repayment Term:	20
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE

WQB NPS Funding Amount	WQB Loan Amount	WQB Loan Interest Rate	WQB Loan Debt Service	WQB Loan Reserve	Annual Sewer O&M Cost	New Sewer Debt Service	Total Annual Sewer Cost	Monthly Sewer Cost/ERU	Sewer Cost as a % of MAGI
-	36,835,000	2.05%	2,263,592	565,898	8,501,095		11,330,585	34.81	0.72%
-	13,176,000	0.90%	722,822	180,706	8,501,095	1,733,898	11,138,521	34.22	0.70%
-	**13,176,000**	**0.95%**	**726,482**	**181,620**	**8,501,095**	**1,733,898**	**11,143,095**	**34.24**	**0.70%**
-	13,176,000	1.00%	730,152	182,538	8,501,095	1,733,898	11,147,683	34.25	0.70%
-	13,176,000	1.05%	733,833	183,458	8,501,095	1,733,898	11,152,285	34.26	0.70%
-	13,176,000	1.10%	737,525	184,381	8,501,095	1,733,898	11,156,900	34.28	0.70%
1,000,000	14,176,000	0.10%	716,266	179,066	8,501,095	1,733,898	11,130,325	34.20	0.70%
1,000,000	14,176,000	0.15%	720,017	180,004	8,501,095	1,733,898	11,135,014	34.21	0.70%
1,000,000	14,176,000	0.20%	723,779	180,945	8,501,095	1,733,898	11,139,717	34.22	0.70%
1,000,000	**14,176,000**	**0.25%**	**727,553**	**181,888**	**8,501,095**	**1,733,898**	**11,144,434**	**34.24**	**0.70%**
1,000,000	14,176,000	0.30%	731,339	182,835	8,501,095	1,733,898	11,149,167	34.25	0.70%
1,000,000	14,176,000	0.35%	735,137	183,784	8,501,095	1,733,898	11,153,914	34.27	0.70%

Attachment 2 – Static Cost Model 2 – South Davis – All Projects

STATIC COST MODEL - South Davis - All Projects - $58 million

Project Costs

Legal/Bonding	$	50,000
DWQ Loan Origination Fee	$	263,000
North Plant ABNR	$	36,521,125
North Plant Rehabilitation	$	10,755,375
South Plant Nutrient Removal	$	6,139,275
South Plant Rehabilitiation	$	4,181,154
Total Project Cost:	$	57,909,929

Current Customer Base & User Charges

ERU's	27,124
MAGI (2018):	$58,346
Affordable Monthly Rate at 1.4%	$68.07
Current Impact Fee (per ERU):	$1,596.00
Current Monthly User Fee (per ERU)	$20.27
Existing O&M expenses Treatment & Collection	$6,213,949
New O&M expenses Treatment & Collection	$7,823,949
Existing Sewer Debt Service	$0

Funding Conditions

Loan Repayment Term:	20
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE

WQB Grant Amount	WQB Loan Amount	WQB Loan Interest Rate	WQB Loan Debt Service	WQB Loan Reserve	Annual Sewer O&M Cost	New Sewer Debt Service	Total Annual Sewer Cost	Monthly Sewer Cost/ERU	Sewer Cost as a % of MAGI
-	57,909,929	2.05%	3,558,693	889,673	7,823,949	0	12,272,315	37.70	0.78%
-	57,909,929	0.00%	2,895,496	723,874	7,823,949	0	11,443,320	35.16	0.72%
-	57,909,929	0.25%	2,972,104	743,026	7,823,949	0	11,539,079	35.45	0.73%
-	57,909,929	0.50%	3,049,910	762,478	7,823,949	0	11,636,337	35.75	0.74%
-	57,909,929	0.75%	3,128,910	782,228	7,823,949	0	11,735,087	36.05	0.74%
-	57,909,929	1.00%	3,209,097	802,274	7,823,949	0	11,835,320	36.36	0.75%
-	57,909,929	1.25%	3,290,465	822,616	7,823,949	0	11,937,030	36.67	0.75%
-	57,909,929	1.50%	3,373,006	843,252	7,823,949	0	12,040,207	36.99	0.76%
-	57,909,929	1.75%	3,456,715	864,179	7,823,949	0	12,144,842	37.31	0.77%
-	57,909,929	2.00%	3,541,581	885,395	7,823,949	0	12,250,926	37.64	0.77%
-	57,909,929	2.25%	3,627,598	906,899	7,823,949	0	12,358,446	37.97	0.78%
-	57,909,929	5.50%	4,845,864	1,211,466	7,823,949	0	13,881,279	42.65	0.88%

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

WATER QUALITY BOARD
FEASIBILITY REPORT FOR CONSTRUCTION ASSISTANCE
AUTHORIZATION

APPLICANT:	Lewiston City 29 South Main Lewiston, Utah 84320 435-258-2141
PRESIDING OFFICIAL:	Mayor Kelly Field
CONTACT PERSON:	Mayor Kelly Field
TREASURER:	Mary Simpson
RECORDER:	Julie Bergeson
CONSULTING ENGINEER:	Gary Vance, P.E. J-U-B Engineers. 466 North 900 West Kaysville, Utah 84103 801-547-0393
CITY ATTORNEY:	Miles P. Jensen Olson & Hoggan P.C. 130 South Main, Suite 200 Logan, Utah 84321 435-752-1551
BOND COUNSEL:	TBD

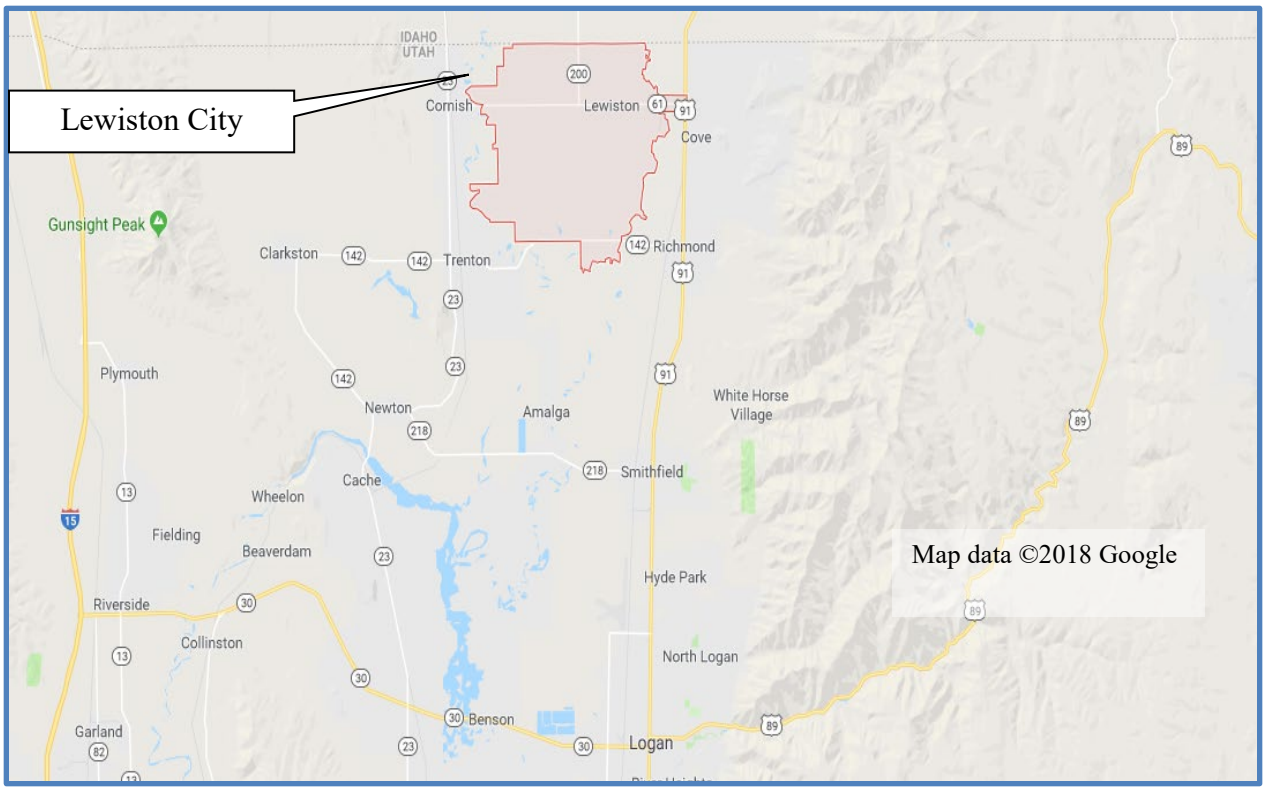
APPLICANT'S REQUEST

Lewiston City is requesting financial assistance in the amount $3,064,000 for construction of sewerage and treatment works improvements. Included in this amount is the hardship design advance of $186,000 that the City awarded at the February 26, 2020 WQB meeting.

At the March 3, 2020 Finance Committee Meeting, the Water Quality Board asked staff to evaluate additional financing alternatives for the project and consider different metrics of affordability beyond the board's conventional threshold of 1.4 percent of median adjusted gross household income (MAGI) of the City. This report presents new financing alternatives and affordability metrics that are based on the expanded guidance of the report "Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector," prepared jointly by AWWA, NACWA, and WEF, April 2019.

APPLICANT'S LOCATION

Lewiston City is located approximately 104 miles north of Salt Lake City on the Utah-Idaho border. The City is located in the northern portion of Cache County.



BACKGROUND

The City owns and operates sewerage and lagoon wastewater treatments systems. The collection system includes one lift station, approximately 3.3 miles of 8-inch and 1.3 miles of 10-inch bell and spigot concrete pipe that were constructed in 1974. The treatment system was also constructed in 1974 and was designed as a three-cell total containment facultative lagoon

treatment system. Chlorine disinfection and sulfur dioxide de-chlorination were added to the treatment facility in 1999. The lagoons discharge two or three months out of the year to the Cub River.

PROJECT NEED

The existing lift station is 50 years old and has reached the end of its useful life. The existing pumps are old and seasonally have insufficient capacity to meet demand, necessitating operation of the redundant spare pump to keep pace with the incoming flow. Maintenance of these pumps has become increasingly costly as a result of their age, increased utilization, and configuration is nearing capacity and will not be able to meet the needs of the City in the very near future. A new lift station and pumps configuration is proposed to overcome these issues, prevent sewer back up, and provide continued reliable service as the community grows.

Two sewer system improvements are needed to eliminate a sewage conveyance bottleneck and reroute a line that cannot be maintained because a large commercial structure was built on top of it. The gravity sewer that receives wastewater from the lift station has insufficient slope to accommodate seasonal peak flows, resulting in backups into the lift station and risk of sewer surcharge and the possibility of overflow. The City proposed to upsize and steepen this line to overcome this bottleneck. The covered line must be rerouted so that it can be properly serviced.

The existing lagoon treatment system has several deficiencies:

- The headworks facility has no screening or grinding equipment, which results in accumulation of trash and other floating debris accumulating on the lagoon banks and causing odor.
- The organic loading to the primary cell periodically causes treatment limitations in this cell.
- The existing chlorination and dechlorination systems do not have proper storage facilities and control equipment, which has resulted in extensive corrosion of equipment and in the building.
- The treatment system has been challenged to comply with its dissolved oxygen discharge limit in part because they have no effluent reaeration system.
- The City is also planning for long-term effluent phosphorus compliance with the technology-based phosphorus effluent cap for lagoons.

The City completed a Wastewater Collections and Treatment System Facilities Master Plan in January 2020. The Facilities Plan recommended updated collection, treatment and land application to deal with future capacity and nutrient limits that could be imposed with the phosphorus loading cap and growth in the community.

PROJECT DESCRIPTION

The proposed project consists of the following improvements and upgrades. These improvements are needed to replace aging infrastructure, eliminate capacity limitations, improve wastewater treatment performance and enhance the overall system maintainability, flexibility, reliability, and customer service.

- Construct a new lift station with increased capacity
- Replace/reroute 7,200 feet of sewers
- Manually cleaned racks are proposed to be incorporated into the headworks that will minimize nuisance conditions and reduce labor costs.
- Floating mechanical aerators are proposed to increase treatment capacity and improve treatment performance.
- Chlorination and dechlorination facilities will be modernized and fitted with code compliant safety and control equipment.
- The City is proposing to construct an effluent reaeration system to ensure compliance with its dissolved oxygen limit.
- The City intends to provide for future Type 2 reuse water pumping in conjunction with the reaeration structure proposed above. This feature of the reaeration system will simplify future implementation of reuse and phosphorus compliance.

ALTERNATIVES EVALUATED

The Facilities Plan evaluated the following alternatives:

- Alternative 1: No action
- Alternative 2: Upgrade Collection and Lagoon Systems
- Alternative 3: Upgrade Lagoons, Winter Storage, and Land Apply All Effluent
- Alternative 4: Full Regionalization with Richmond

The recommended alternative is No. 2, which is the collection and lagoon systems improvement.

PROJECT PRIORITY LIST

The proposed project was ranked 7 out of 8 on the project priority list.

POPULATION GROWTH

The population of the City is projected to grow at an annual rate of 2.09% by the Governor's Office of Planning and Budget. Current populations and associated equivalent residential units (ERUs) are shown in the table below along with the 20-year projection.

	Year	Population[1]	ERU[2]
Current	2019	1776	280
Design	2039	2515	456

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT

The City held a public meeting on December 2019, as required by the Utah Wastewater State Revolving Fund (SRF) program. The City will hold a final public hearing once funding is secured. The City has taken the following steps to include the public in their proposed project planning:

The City has had several public meetings regarding the project over the past year. The City believes the public is well informed on the need for the project including replacing the existing sewer lift station, collection system improvements, and upgrades at the lagoon treatment system. In July 2019 the public was notified of a sewer rate increase and sewer connection fee increase to support the upcoming sewer improvements project. The proposed project has been discussed as an agenda item in several public City Council meetings over the past year, including most recently in December 2019 and January 2020. The City Council is supportive of the project and demonstrated their commitment by (1) increasing sewer rates; (2) increasing sewer connection fees; (3) adopting a Wastewater Facilities Master Plan; and (4) applying for financial assistance with both Division of Water Quality (DWQ) and U.S. Department of Agriculture - Rural Development (USDA –RD).

IMPLEMENTATION SCHEDULE:

Public Meeting	December 2019
Apply to WQB for Funding:	February 2020
Public Hearing:	February 2020
WQB Funding Authorization:	March 2020
Advertise EA (FONSI):	March 2020
Engineering Report Approval:	March 2020

[1] The average population growth through the year 2039 is estimated to be 2.09% from 2020-2030, 3.16% from 2030-2040 by the Governor's Office of Planning and Budget
[2] Only about one half of the city is on sewer; the remainder are generally on large lots with septic tanks

Commence Design:	March 2020
Issue Construction Permit:	July 2020
Advertise for Bids:	July 2020
Bid Opening:	August 2020
Loan Closing:	August 2020
Commence Construction:	September 2020
Complete Construction	July 2021

APPLICANT'S CURRENT USER CHARGE

The 2018 median adjusted gross income (MAGI) for Lewiston City was $46,500, which is 97 percent of the state average of $48,000. Based on 1.40 percent of the MAGI, the City's maximum affordable sewer service charge is $68.07 per month per ERU. The City currently charges a sewer service fee of $31.00 per month per residential and non-residential connection. This fee is equivalent to 0.80 percent of the MAGI. The City intends to raise the sewer user rate by $5 per month each year for the foreseeable future.

COSTS SHARING:

The total cost of the project is $3,064,000. The following cost sharing is proposed for this project:

Funding Source	Cost Sharing	Percent of Project
WQB Financial Assistance	$3,064,000	100%
USDA - RD	TBD	TBD
Total:	$3,064,000	100%

EFFORTS TO SECURE FINANCING FROM OTHER SOURCES:

The City is in the process of applying for additional financial assistance from USDA- RD. An update of the status of this request will be provided to the board at the March meeting. USDA-RD expects to act on this funding request at their April 2020 meeting.

COST ESTIMATE:

Engineering - Planning	$41,000
Engineering - Design	$165,000
Engineering – Other	$41,000
Engineering – CMS	$186,000
Construction	$2,067,500
Contingency (20% construction)	$414,000
DWQ Loan Origination Fee	$20,500
Environmental/ NEPA	41,000
Legal/Bonding/ Easement/Water Rights	$88,000
Total:	$3,064,000

ESTIMATED ANNUAL COST FOR SEWER SERVICE

Staff developed a static cost model to evaluate several financing alternatives for the project, which is presented in Attachment 1. The basic cost data used in modeling financial alternatives for the project are provided below.

When establishing loan terms, the Board had applied a basic affordability threshold of 1.4% of the MAGI for sewer rates. Based on the local MAGI of $46,500, the maximum affordable monthly sewer bill would be $54 /month/ERU. To hold the rate at this level would require $2,424,000 in grant and $640,000 in loan at 0% and a 20 year term.

From the cost model in Attachment 1, the best deal for the City that is reasonably in reach for the two funding agencies is for the Board to award grant only, with USDA-RD awarding the balance in the form of 80:20 loan-to-grant proportions, with a 40 years term and 2.25 percent interest. With $500,000 in grant from the board, the sewer bill would cost $66.37 or 1.71 percent MAGI. Because this is well in excess of the Board's usual affordability threshold of 1.4%, staff prepared a supplemental affordability analysis based on recent national guidance. This supplemental analysis is provided in Attachment 2.

This analysis shows that the proposed financing package results in moderate financial impacts for residents and moderate-high impacts for the financially distressed population, up to an average monthly sewer bill of about $90 per month. There is a large financially distressed population living in Lewiston (45 percent live at <200% of the federal poverty level) that is more susceptible to sewer/water costs. The analysis also recognizes that the proposed rates do not account for the utility's financial capacity to implement capital improvements of the project infrastructure beyond basic loan reserve fund requirements. These additional costs if managed simply as "funding depreciation," would result in a high residential burden.

STAFF COMMENTS AND RECOMMENDATION:

Staff supports the city's project for collection and treatment improvements that will protect the water quality in the Cub River. The proposed project is a critical element of the City's facility master plan. An updated collection and treatment improvement project will enable the City to sustain its public health, current rate of growth and aging infrastructure.

The Board authorized a design advance of $186,000 at the February 26, 2020 meeting. Staff recommends that the Board authorize Lewiston City grant in the amount of $500,000, which includes the design advance amount. The Board may wish to emphasize that these funds be directed to benefit financially distressed members of the community, although this may be challenging for the community to implement. The Board may wish to also offer up to $1,000,000 in loan at an interest rate of 0%, 20 year term loan to support the project as a contingency to the USDA RD final deal. Financially, this does not advantage the City unless they are unable to secure the funding described in the cost model.

All funding should be subject to the following special conditions:

1. The City must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
2. As part of the facility planning, the City must complete a Water Conservation and Management Plan.
3. Lewiston must pursue and retain remaining funding necessary to fully implement the project prior to loan closing.
4. Lewiston must develop, implement, and commit to fund at plan levels, an asset management program that is consistent with EPA's Fiscal Sustainability Plan guidance.

Attachment 1

Lewiston City - Water Quality Board

20 Year Loan Static Cost Model (Attachment 1)

Project Costs

Engineering - Planning	$	41,000
Legal/Bonding	$	88,000
DWQ Loan Origination Fee	$	20,500
Engineering - Design	$	165,000
Engineering - other	$	41,000
Engineering - CMS	$	186,000
Construction	$	2,067,500
Contingency	$	414,000
Environment/NEPA	$	41,000
Total Project Cost:	**$**	**3,064,000**

Project Funding

Lewiston City	
USDA RD Loan	80%
USDA RD Grant	20%
WQB Loan	
WQB Grant	
Total Project Cost:	**100%**

Total ERU's		280
MAGI for Lewiston (2018)	$	46,500
Affordable Monthly Rate at 1.4%	$	54
Combined Impact Fee (per ERU):	$	2,278
Current Monthly Fee (per ERU)	$	31
Proposed Ponthly Fee Increase (per ERU)	$	5
Existing Sewer Debt Service	$	-
Asset Replacement Cost	$	2,067,500
Asset Life, years		25
New Annual O& M expense (per ERU)	$	40.90
Existing Annual Storm Water Cost (per ERU)	$	1.49

Funding Conditions

USDA RD Loan Repayment Term, years	40
Reserve Funding Period:	10
WQB Loan Repayment Term, years	20
Reserve Funding Period:	6
New Annual Sewer O& M expense	137,000

ESTIMATED COST OF SEWER SERVICE

USDA RD Grant	USDA RD Loan	USDA RD Interest Rate	USDA RD Debt Service	USDA RD Reserve	WQB Grant	WQB Loan	WQB Interest Rate	WQB Debt Service	WQB Reserve	Annual O&M Cost	Total Annual Sewer Cost	Monthly Sewer Cost/ERU	Sewer Cost as a % of MAGI
-	3,064,000	2.25%	117,000	4,000			0.00%	-	-	137,000	263,000	78.27	2.02%
613,000	2,451,000	2.25%	94,000	4,000			0.00%	-	-	137,000	240,000	71.43	1.84%
0	0	2.25%	0	0		3,064,000	3.00%	205,949	51,487	137,000	399,000	118.75	3.06%
0	0	2.25%	0	0		3,064,000	0.00%	153,200	38,300	137,000	334,000	99.40	2.57%
0	0	2.25%	0	0	186,000	2,878,000	0.00%	143,900	35,975	137,000	322,000	95.83	2.47%
0	0	2.25%	0	0	500,000	2,564,000	0.00%	128,200	32,050	137,000	302,000	89.88	2.32%
0	0	2.25%	0	0	2,424,000	640,000	0.00%	32,000	8,000	137,000	182,000	54.17	1.40%
576,000	2,302,000	2.25%	88,000	3,000	186,000	0	0.00%	-	-	137,000	233,000	69.35	1.79%
513,000	2,051,000	2.25%	78,000	3,000	500,000	0	0.00%	-	-	137,000	223,000	66.37	1.71%
313,000	1,251,000	2.25%	48,000	2,000	500,000	1,000,000	0.00%	50,000	12,500	137,000	255,000	75.89	1.96%
413,000	**1,651,000**	**2.25%**	**63,000**	**2,000**	**500,000**	**500,000**	**0.00%**	**25,000**	**6,250**	**137,000**	**238,000**	**70.83**	**1.83%**
213,000	851,000	2.25%	32,000	1,000	1,500,000	500,000	0.00%	25,000	6,250	137,000	206,000	61.31	1.58%
153,000	611,000	2.25%	23,000	1,000	1,900,000	400,000	0.00%	20,000	5,000	137,000	191,000	56.85	1.47%
53,000	211,000	2.25%	8,000	0	2,500,000	300,000	0.00%	15,000	3,750	137,000	169,000	50.30	1.30%
93,000	371,000	2.25%	14,000	1,000	2,500,000	100,000	0.00%	5,000	1,250	137,000	163,000	48.51	1.25%

Attachment 2. Lewiston City Supplemental Project Affordability Analysis

Staff developed an expanded affordability analysis that incorporates components of three significant affordability and hardship criteria identified in the body of research and guidance that has evolved since 1997 - when EPA incorporated storm water, including combined sewer overflows (CSOs), utility financial capacity, "a total water approach," and integrated permitting considerations into its affordability determination guidance[3]. The following statistics were compiled from the applicant's application, 2014-2019 US Census Bureau (estimates), City or District 2019 Financial Statements, and consulting engineer's estimates when necessary. These statistics represent current conditions, prior to financing the proposed project. Financial impacts of the proposed project are discussed later in this report.

Table 1. Lewiston City Affordability Statistics

Total Project Asset Value	$3,0648,000
Loan Term	20 years
Median Household Income (MHI)	$55,862
Median Adjusted Gross Household Income (MAGI)	$46,500
Number of Effective Residential Units (ERUs)	280 (sewer)
Average Annual Sewer Bill per ERU	$433.45
Average Annual Water Bill per ERU	$574.17
Average Annual Storm Water Bill per ERU	$7.94
Average Total Water Bill per ERU	$1,015.56
Federal Poverty Level (FPL), family of four	$25,750
200% FPL	$51,500
20% Lower Quintile Income (LQ1)	$29,545

Using the above statistics, staff prepared the following criteria that can be used to measure project affordability and potential hardship. These criteria and associated threshold levels are generally based on AWWA et al. or UAC R317-101 guidance, discussed below.

Table 2. Lewiston City Current Affordability Metrics

Affordability Metrics	Community Value
Sewer Bill as % of Local MAGI	0.93%
Sewer + Storm Water as % of Local MHI	0.79%
Total Water Bill as % of Local MHI	1.82%
Poverty Prevalence Indicator (PPI): % Households below 200% FPL	45%
Household Burden Indicator (HBI): Total Water Bill as % of Income at LQI	3.44%

Utah has used the median adjusted gross household income (MAGI) as its primary indicator of hardship, establishing an affordability threshold of 1.4% MAGI where grant should be

[3] April 2019 "Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector," prepared jointly by AWWA, NACWA, and WEF, April 2019.

considered as part of a finance package for municipal wastewater systems. The Board has exercised flexibility to award (or not) grant funds for projects that result in sewer rates near the threshold value, taking into consideration other community financial conditions. Most other states rely on the median household income (MHI) in their affordability determinations, and most guidance incorporates MHI as one indicator of hardship, in spite of its weakness in addressing distressed populations most vulnerable to increases in water costs.

Current guidance of water affordability employs Table 3 to measure impacts to residents in general, with % MHI serving as the Residential Indicator or RI. Table 3 focuses of the combined cost of sanitary and storm sewer (including CSOs) service, excluding drinking water. Guidance recommends using Table 4 to focus on local low-income populations, recognizing the distribution of incomes and examining the segment of the community that is most vulnerable to affordability challenges. In Table 4, the household burden indicator measures economic burden of the most distressed population (LQ1) and the poverty prevalence indicator measures its prevalence. The costs of all water services, including drinking water, are included in Table 4.

Table 3. Residential Financial Impact - Cost per Household as a Percentage of MHI

Financial Impact	Residential Indicator CPH as % of MHI
Low	<1.0
Mid-Range	1.0 – 2.0
High	>2

EPA Final Guidance for CSO Financial Capacity Indicator, EPA 832-B-97-004

Table 4. Economic Burden of Distressed Population

HBI- Water Costs as a Percent of Income at LQ1	PPI - Percent of Households Below 200% of FPL		
	>=35%	20% to 35%	<= 20%
>=10%	Very High Burden	High Burden	Moderate-High Burden
7% to 10%	High Burden	Moderate-High Burden	Moderate-Low Burden
< 7%	Moderate-High Burden	Moderate-Low Burden	Low Burden

Comparing Table 2 metrics with guidance in Tables 3 and 4 tells us:

- The current financial impacts of combined sanitary and storm sewer service are low.
- The current economic burden of all water service on the most distressed population segment is moderate-high.

The financial impacts of the proposed project are discussed in the context of Tables 3 and 4 in the Estimated Annual Cost of Sewer Service section below.

Affordability Analysis Results

Table 5 summarizes affordability metrics as discussed above and incorporates potential costs to the community for financing the project through a combination of DWQ and RD loans and grants, and borrowing on the commercial market (see cost model Attachment 1). The Table 5 results indicate moderate financial impacts for residents and moderate-high impacts for the financially distressed population, up to an average monthly sewer bill of about $90 per month, allowing some room for future increases in storm water and drinking water costs (up to Total Water Bill as % of MHI < 4.5%). The City has a relatively high PPI at 45 percent.

Table 5. Lewiston City Affordability Results for Project Financing Alternatives

	DWQ "Affordable"	DWQ $500,000 / $500,000 Loan/Grant	EPA Max. "Affordable RI"	Commercial Loan at 3.0%
Affordability Metrics / Monthly Bill:	$54.17	$71.13	$92.26	$118.75
Sewer Bill as % of Local MAGI	1.40%	1.84%	2.38%	3.06%
Sewer + Storm Water as % of Local MHI	1.18%	1.54%	2.00%	2.57%
Total Water Bill as % of Local MHI	2.21%	2.57%	3.02%	3.59%
Poverty Prevalence Indicator (PPI): % Households below 200% FPL	45%	45%	45%	45%
Household Burden Indicator (HBI): Total Water Bill as % of LQ1 Income	4.17%	4.86%	5.72%	6.79%
Residential Burden, Table 3	Moderate	Moderate	High	High
Distressed Population Burden, Table 3	Moderate-High	Moderate-High	Moderate-High	Moderate-High

Table 5 takes no account of the utility's financial capacity to implement capital improvements of the project infrastructure beyond basic loan reserve fund requirements. Utility financial capacity is another important element of affordability guidance. For example, if the City were to fund basic depreciation of the public component of the sewer project ($3,064,000) at a straight line rate of 2.5% per year, the average cost of the sewer bill assuming no salvage value would increase by $22.80 per month per ERU, not including similar costs for other existing assets. At this point, the HBI would exceed 7% for the commercial loan alternative in Table 5 and the distressed population burden will become high. With inflation, the renewal costs will increase significantly over the asset life.

Balancing the costs of sustaining water system operations with the capacity to implement capital improvements, collectively financial capacity, is the job of asset management. An effective asset management system would track and update replacement costs, direct inform renewal projects, and direct future rate setting decisions needed to maintain an established level of service. Further, implementing asset management should strengthen the utility's financial position, minimize its dependency on debt beyond its needs to accommodate growth, and account for its true cost of service in its service fees. This balancing of costs should be considered in the Board's financing decision.

DWQ-2020-006667
File: SRF-Lewiston City, Planning, Section 1

Lewiston City - Water Quality Board

20 Year Loan Static Cost Model (Attachment 1)

Project Costs

Engineering - Planning	$	41,000
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Total Project Cost:	**$**	**3,064,000**

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WQB Grant	
Total Project Cost:	**100%**

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Funding Conditions

USDA RD Loan Repayment Term, years	40
Reserve Funding Period:	10
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New Annual Sewer O& M expense	137,000

ESTIMATED COST OF SEWER SERVICE

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313,000	1,251,000	2.25%	48,000	2,000	500,000	1,000,000	0.00%	50,000	12,500	137,000	255,000	75.89	1.96%
413,000	**1,651,000**	**2.25%**	**63,000**	**2,000**	**500,000**	**500,000**	**0.00%**	**25,000**	**6,250**	**137,000**	**238,000**	**70.83**	**1.83%**
213,000	851,000	2.25%	32,000	1,000	1,500,000	500,000	0.00%	25,000	6,250	137,000	206,000	61.31	1.58%
153,000	611,000	2.25%	23,000	1,000	1,900,000	400,000	0.00%	20,000	5,000	137,000	191,000	56.85	1.47%
53,000	211,000	2.25%	8,000	0	2,500,000	300,000	0.00%	15,000	3,750	137,000	169,000	50.30	1.30%
93,000	371,000	2.25%	14,000	1,000	2,500,000	100,000	0.00%	5,000	1,250	137,000	163,000	48.51	1.25%

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

WATER QUALITY BOARD
FEASIBILITY REPORT FOR SEWERAGE PROJECT
AUTHORIZATION

APPLICANT:	Millville City 510 East 300 South Millville, UT 84326 Telephone: (435) 750-0924
PRESIDING OFFICIAL:	David Hair, Mayor
TREASURER/RECORDER:	Corey Twedt, Recorder
CONSULTING ENGINEER:	Chad Brown, Engineer Franson Civil Engineers 115 Golf Course Rd, Suite D Logan, UT 84321 (435) 754-7661
BOND COUNSEL:	Eric Johnson, Partner Blaisdell Church & Johnson, LLC 5995 South Redwood Rd Salt Lake City, UT 84123 (801) 261-3407

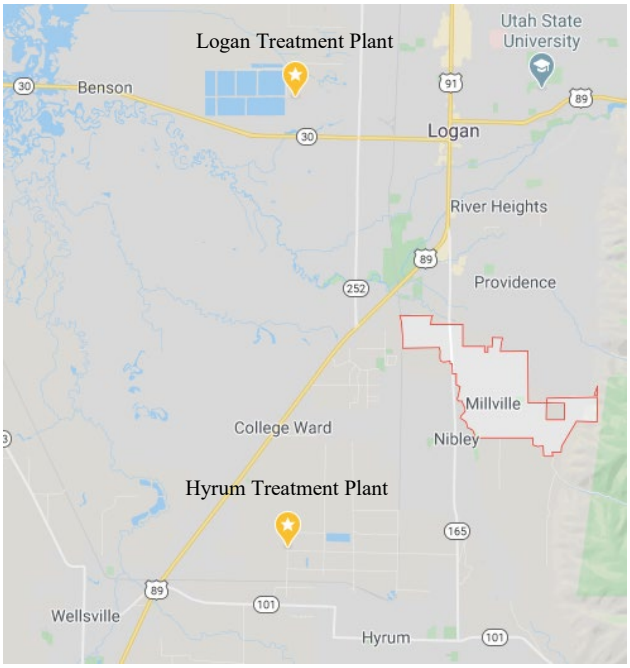
APPLICANT'S REQUEST:

Millville City is requesting financial assistance from the Utah Water Quality Board in the amount of $14,300,000 to construct a new sewerage system.

APPLICANT'S LOCATION:

Millville City is located in Cache County. The City is approximately 7 miles from the Logan Treatment Plant and approximately 5 miles from the Hyrum Treatment Plant.

MAP OF APPLICANT'S LOCATION:



BACKGROUND AND PROJECT NEED:

Since at least 1993, elevated concentrations of nitrate have been detected in the drinking water aquifer that supplies Millville City's drinking water (USGS Publication Water-Resources Investigations Report 93-4221, 1994). Nitrate affects the ability of the body to carry oxygen, and is particularly harmful to infants and young children. The primary drinking water standard maximum contaminant level (MCL) for nitrate as nitrogen (NO_3-N) is 10 mg/L.

Nitrate concentrations in the City's Glenridge Well have increased steadily over the years. In 1993, the ground water nitrate concentration was reported to be 3.3 mg/L and in the spring of 2019, a nitrate concentration of 8.8 mg/L was measured for the Glenridge Well (UGS Report of Investigation 275, 2016).

The primary sources of nitrate to the aquifer are believed to be agricultural and septic tank discharges into the subsurface from individual homes. Since at least the year 2000, increases in ground water nitrate concentrations have tracked population growth in the City implicating septic

tanks as a principal source of the continuing degradation of ground water quality.

Septic tanks discharge approximately 50 - 60 mg/L of nitrogen into the subsurface, most of which becomes oxidized to nitrate in the shallow soils. There are a variety of site conditions that allow septic discharges to be protective of water supplies and an acceptable means for wastewater disposal. Conditions such as fast draining soils, and shallow, unconfined aquifers, increase the probability of contamination reaching the water supply. Under these conditions, as at Millville City, as the number of septic discharges increase over an aquifer, so does the risk of ground water contamination. In these cases, the housing density affects a community's ability to protect their water supply.

A septic density study completed for Cache Valley in 2003 (UGS Special Study 101, 2003) suggested that a density of three acres per home would limit ground water degradation to 1 mg/L. Today, the housing density in parts of Millville City is approximately one-half acre per home, exceeding the UGS study recommendation by six times. Figure 1 shows the highest housing densities (half-acre lots) in red, lowest densities in green and animal concentrations in purple; septic tanks are shown as "x". Figure 2 illustrated the nitrate concentrations and contaminant plume for this area.

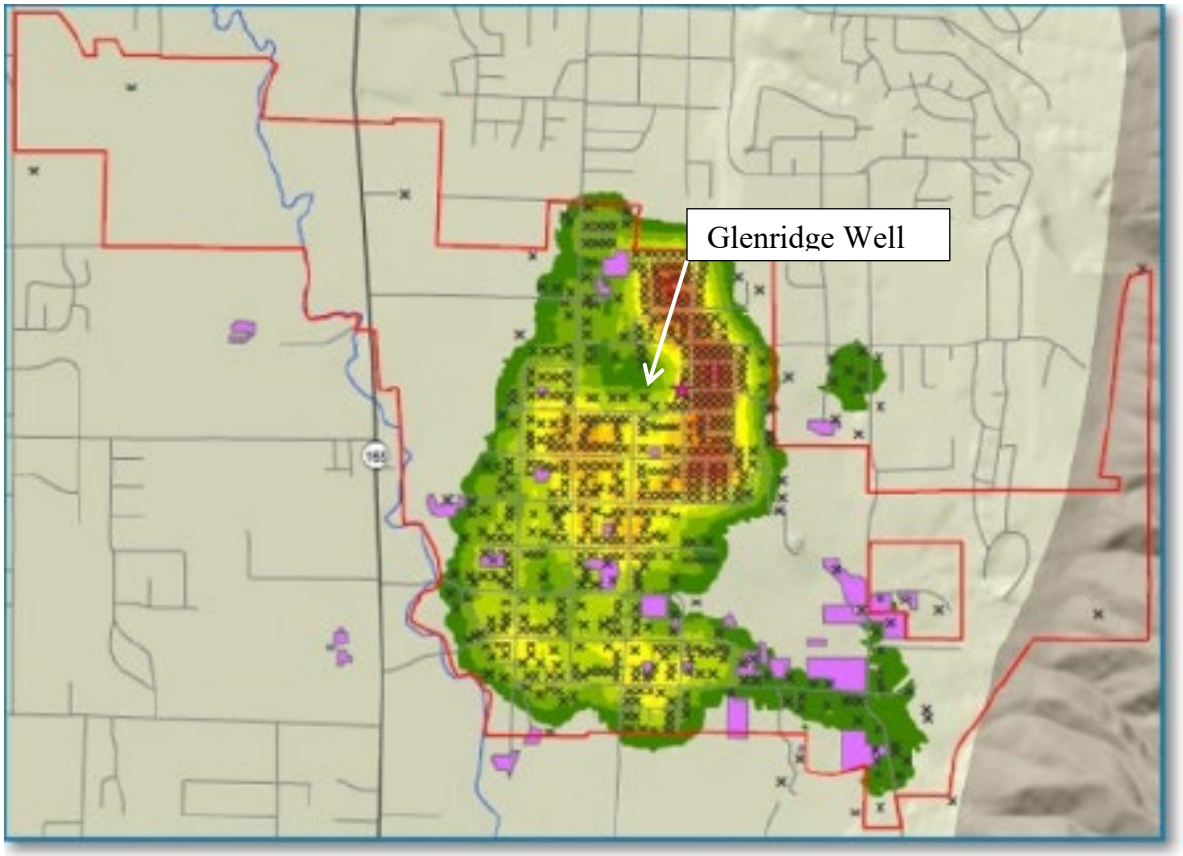


Figure 1. Septic tank locations, septic tank density, and locations of animal concentrations
From UGS Report of Investigation 275, 2016

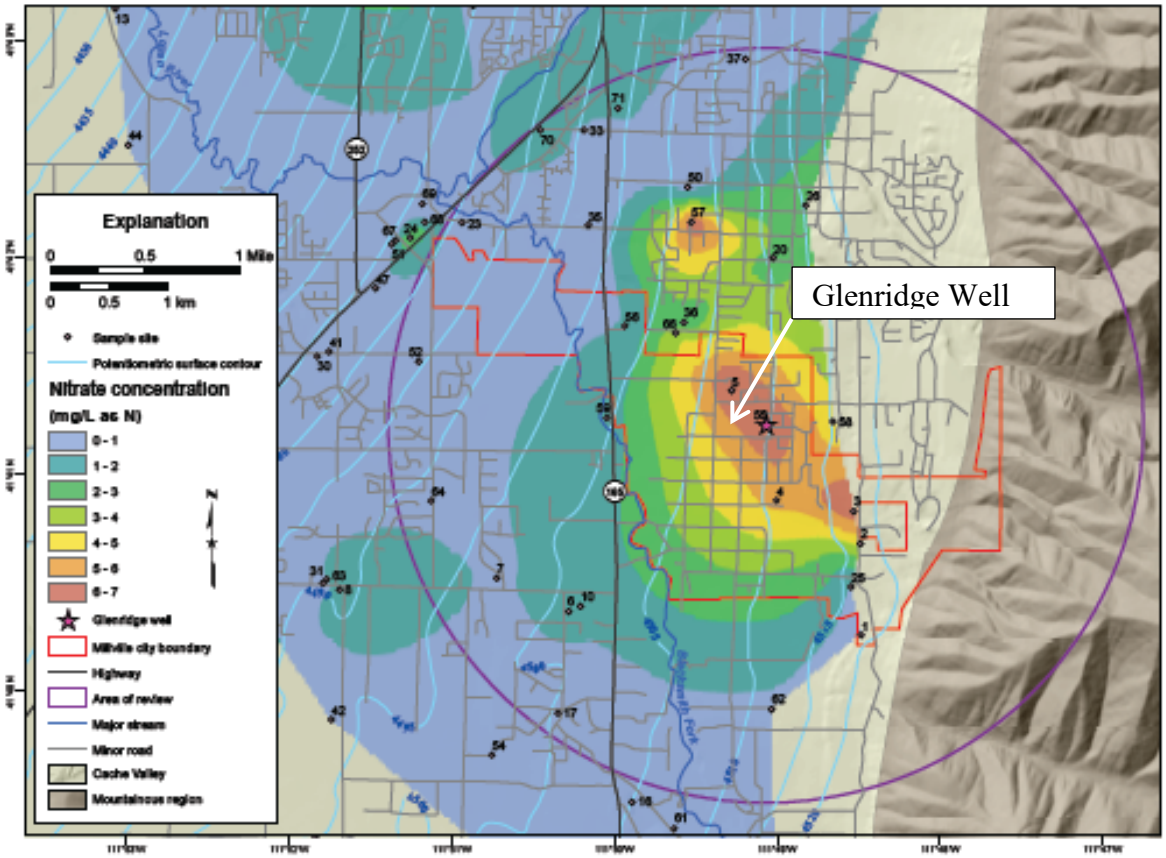


Figure 2. Nitrate Concentrations in the Millville Area
From UGS Report of Investigation 275, 2016

In the 1980s and 1990s, most of southern Cache Valley was sewered. The Water Quality Board authorized a loan for $7.7 million for the cities of Nibley and Millville to connect to the Logan Wastewater Treatment Plant in 2001. Millville later elected to withdraw from the agreement to sewer before the loan closed leaving this city as the only remaining community in the area to rely on septic tanks for sewage treatment. The Water Quality Board also authorized a $3.5 million loan in 1989 for Providence City to connect to the Logan Wastewater Treatment Plant and a $4.2 million loan to Hyrum in 2003 to construct a new treatment plant.

Concern over rising nitrate concentrations in the Glenridge Well led the city to apply to the Division for an aquifer storage and recovery (ASR) permit in 2018 with the hope of diluting the nitrate in the aquifer with spring water and thereby extending the life of the well. A pilot test for this concept was conducted in 2014 and the results were considered when reviewing the city's ASR application. The Division's review of the ASR application was conducted in partnership with the Division of Drinking Water. The Division denied the permit for the ASR project for the following three reasons:

1) There was concern that the project could push the nitrate plume down-gradient to the Providence City drinking water wells. There is evidence that this occurred during the pilot as concentrations in one of Providence City's wells (Alder-West Well) increased from 4.5 mg/L to 8.6 mg/L following the two pilot tests. Concentrations came down to 5.9 mg/L after 22 months.
2) The pilot project did not demonstrate that long term operation of the project would produce the intended results to dilute nitrate concentrations.
3) Millville City had not made any attempt to reduce their contribution to the nitrate problem through source control (sewer of the city).

The Bear River Health Department (BRHD) administers the septic permitting program in Cache Valley. Following the Division's denial of the aquifer storage and recovery project, BRHD made the decision to put a moratorium on any further septic permitting in the area. Although DEQ does not have authority to issue such a moratorium, the Division was consulted by the BRHD before this action was taken.

As a result of the Division's ASR permit denial and the Board of Health's moratorium, Millville has moved swiftly to develop plans to sewer the community.

PROJECT DESCRIPTION:

Millville City is estimated to have a current population of 2,050 with 630 culinary connections, 10 of which are commercial. Millville is a growing community and projects to reach buildout in the next 30-40 years with a population of 6,646 and 2,014 residential connections.

The proposed project consists of four principal parts: (1) constructing 15.6 miles of new sewerage system that will provide sewer service throughout the community; (2) connecting the new sewerage system to a regional wastewater treatment facility; (3) connecting private properties to the sewerage system; and (4) properly decommissioning the existing septic tanks.

Regional Treatment Capacity

About three years ago, sewer service was provided to the new Millville High School at the northeast side of town. This line was sized to accommodate future connections from the City. The line connects with the Nibley City sewerage system from which the wastewater is conveyed to the Logan City regional treatment plant. Both Nibley and Logan cities have indicated willingness to provide capacity to convey (Nibley) and treat (Logan) Millville's new connections. Logan City was required by the Water Quality Board to implement impact fees for its service as a condition of a Board loan. Logan's impact fee of $2,300 per connection amounts to a project cost of approximately $1.6 million to Millville City. As an alternative, Millville has been negotiating with Hyrum City to try and establish a mechanism to defer this cost and ultimately regionalize the Hyrum system, possibly with a new district being formed. These two alternatives are discussed further below.

Funding House Laterals and Septic Tank Decommissioning
Funding laterals and septic tank decommissioning on private property is generally prohibited under the Board's loan program for two principal reasons. Under the SRF and Utah statute, funding a treatment works (and sewerage system) project means the Board is funding public assets and their improvement with public dollars. These laws are generally silent on what cannot be funded but have been interpreted as meaning that this funding (category) cannot directly benefit private properties beyond the public benefit of the service provided. The second reason is one of practicality. Conducting construction work on private property is difficult at best, even with access agreements in place.

Because of the high cost of sewering the community and the anticipated financial hardship that will result, the City asked staff to review the possibility of providing financial assistance toward constructing the private house laterals and decommissioning of septic tanks. USDA Rural Development and/or Community Impact Board (CIB), who are expected to be financing partners on this project, indicated that these parts of the project are not eligible for funding under their wastewater project loan programs. Having reviewed the ground water situation in Millville City, Utah's water quality financing rules, and the challenges associated with implementing such a project (on private properties), staff has determine that the Board could fund laterals within the constraints of the law, EPA and program guidance, and to the benefit of many homeowners in the City.

Whereas the legal and programmatic framework discussed above limits funding for "treatment works" to public projects, the same framework for "state nonpoint source" projects opens financial assistance to both private and public entities. Within Utah Administrative Code R317, Environmental Quality, Water Quality, Rule R317-101, Utah Wastewater Project Assistance Program, Subpart 5, Financial Assistance for Onsite Wastewater Systems, there is an allowance for providing assistance for laterals and septic tank decommissioning to connect homes to sewer under certain conditions. The principal condition that must be met is that the systems being replaced (with laterals) have "malfunctioned or are in non-compliance with state administrative rules or local regulations governing the same." We believe that systemic discharge of septic tanks (as defined in R317-4, Onsite Wastewater Systems) has been the primary cause of the well documented groundwater pollution in the aquifer that supplies Millville City's drinking water resulting in noncompliance with drinking water regulations and ground water quality standards.

Hardship criteria (income less than 150% of the state MAGI) specified in Rule R317-101-5 must be met for each homeowner receiving assistance. We estimate that between one third and one half of City homeowners should be eligible to receive some assistance for their laterals and their septic tank decommissioning. The same rule specifies that impact fees are an ineligible cost under this program.

ALTERNATIVES EVALUATED:

Millville City's Draft Capital Facilities Plan evaluates several alternatives for implementing a

city-wide sewerage system in order to eliminate septic tank discharges to ground water.

1. No Action;
2. Collection systems variations;
3. Construction of a Millville City treatment plant;
4. Forming a new Sewer District with a regional treatment plant;
5. Connecting to the Logan City Regional Wastewater Treatment Plant through Nibley; and
6. Connecting to the Hyrum City Wastewater Treatment Plant through a new pump station and force main.

The most feasible alternatives are to construct a new sewerage system and connect to either Logan or Hyrum's existing treatment systems with Millville's preferred alternative being to connect to Hyrum. Life cycle cost estimates reviewed with the City's engineer place these two alternatives about even. Both alternatives are subject to the parties reaching agreeable terms and interlocal agreements.

The Logan treatment plant is a large new facility with capacity to treat the 220,000 gpd of estimated additional flow from Millville. Hyrum City is currently able to accommodate Millville's wastewater but additional growth would require expansion of the Hyrum treatment plant. Staff is currently reviewing construction plans to add 500,000 gpd of additional capacity in the next year to the Hyrum treatment plant. Both plants are modern advanced facilities.

Both facilities are subject to total maximum daily load (TMDL) restrictions for phosphorus with Hyrum's being the most stringent due to discharge to (the small) Spring Creek, a tributary to the Bear River system. Hyrum uses membrane bioreactor technology and chemical addition for phosphorus control that allows them to produce some of the best effluent in the state. They have an extensive Type 1 reuse system that enables them to beneficially use and not discharge effluent to the creek during the critical summer months. Past the upgrade that is planned, further expansion will require reevaluation of the Spring Creek TMDL and associated waste load allocations.

POSITION ON PROJECT PRIORITY LIST:

This project is ranked 4th out of 7 projects on the Wastewater Treatment Project Priority List. 4th is the highest currently unfunded project.

POPULATION GROWTH:

Millville is estimated to have a population of 2,050 and 630 culinary connections, 10 of which are commercial. Millville is a growing community and projects to reach buildout in the next 30-40 years with a population of 6,646 and 2,014 residential connections.

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT:

In a letter dated March 14, 2019, Mayor Hair reached out to residents notifying them of the elevated nitrate levels and potential for a sewer project. Millville held a public hearing on September 23, 2019 on the City Council resolution to issue $15 million dollars of Water and Sewer Revenue Bonds. During the hearing the sewer project was introduced and public comment was invited. From the meeting minutes, the public is supportive of the project but encouraged Millville staff to exhaust options other than connecting to Logan.

EFFORTS TO SECURE FINANCING FROM OTHER SOURCES:

Millville is in the process of applying for construction assistance from both the Community Impact Board (CIB) and USDA Rural Development (RD). Discussions have indicated neither CIB nor RD could fund laterals or impact fees. CIB has indicated that, as Cache County is not a major energy producing county, they would likely only be able to bring loan to the project. RD expects to be able to bring a mix of loan and grant and has given indication the project would rank highly and bring a 20/80 grant/loan mix. RD has further indicated they could fully fund all eligible portions of the projects. RD's loan interest rate is expected to be at their current intermediate rate of 2.25% with an extended loan term of up to 40 years. As a comparison, a $14,300,000 loan at 0% with a term of 30 years from the Board equates to a 20/80 grant/loan mix with a term of 40 years at 2.77%. Thus, it can be concluded that the Board can only make an impact on affordability of this project via grant funds and funding of the lateral side of the project.

IMPLEMENTATION SCHEDULE:

The proposed schedule for implementation of the construction project is as follows:

WQB Introduction	February 2020
WQB Funding Authorization:	March 2020
Start Construction	2020
Complete Construction	2023

APPLICANT'S CURRENT USER CHARGE:

Millville residents currently pay a sewer user charge of approximately $2/month. This fee pays for the capacity Millville previously purchased in the gravity main through Nibley to the Nibley pump station, and from there into Logan. With the construction of the sewer system, Millville will have to maintain the new sewer which is estimated to cost approximately $9/month per household.

For wastewater treatment, Millville will need to send its wastewater either to the Logan wastewater treatment plant or the Hyrum wastewater treatment plant. Millville estimates treatment fees at Logan would be about $22.50/month per household connection. In addition, Millville would have to pay Logan impact fees of $2,300/connection. Millville is currently negotiating with Hyrum for treatment. Hyrum has indicated they are open to bringing Millville on as a partner and potentially charging $31.86/month with no impact fee. For cost modeling purposes herein, staff used the $31.86/month potential fee without impact fee.

The 2018 median adjusted gross income (MAGI) for Millville City is $59,300, which is 24 percent higher that the state average of $48,000. Based on the Board's affordability criterion of 1.4% MAGI, potential grant funding should be considered for a sewer bill of greater than $69.18.

COST ESTIMATE:

Millville has estimated this project to have 2 major cost components: 1. Laterals and Septic Tank Abandonment, and 2. Sewer Construction.

The combined projects are outlined in the following table:

Item	**Funded Project Costs**	
	Collections	**Laterals**
Legal/Bonding	$ 50,000	
DWQ Loan Origination	$ 42,000	
Construction – Collections	$ 4,896,000	
Construction – Pressure Line	$ 1,530,000	
Laterals		$ 3,150,000
Septic Tank Abandonment		$ 630,000
Engineering	$ 550,000	$ 140,000
Construction Management Services	$ 550,000	$ 210,000
Contingency (25%)	$ 1,607,000	$ 945,000
Subtotals	$ 9,225,000	$ 4,925,000
Total		**$ 14,300,000**

Laterals and Septic Tank Abandonment

Cost to construct laterals and septic tank abandonment on private property is estimated to be approximately **$5.1 million** or approximately $7,552 per household.

Collection System and Pressure Line

The estimated cost of Millville collection system and pressure line project construction is estimated to be **$9.2 million**.

COST SHARING:

Funding Source	Cost Sharing	Percent of Project
LATERALS		
Local Contribution	$ 3,575,000	25%
WQB Hardship Grant	$ 1,500,000	10%
COLLECTION SYSTEM		
RD Loan	$ 5,780,000	40%
RD Grant	$ 1,445,000	10%
WQB Principal Forgiveness Grant	$ 2,000,000	14%
Total	$ 14,300,000	100%

This cost sharing estimate assumes RD can fund 100% of the funding gap for the collection system project.

ESTIMATED ANNUAL COST FOR SEWER SERVICE:

Millville is examining the possibility of funding all cost components so residents are not faced with any large bills and costs are instead wrapped into monthly payments. Millville has estimated funding through the sale of a bond for Sewer Projects on the open market at 5.5% with a 40 year term. The interest rate estimated by Millville does not appear to match with current market trends tracked by DWQ. Current market rates index as of March 2020 are as follows:

US 20-year Treasury Bond[1] 1.16%
US 30-year Treasury Bond[1] 1.28%
MBIS Municipal Bond Index, 20-year[2] 2.31%

Staff modeled a 30 year 3% $14.150 million loan which resulted in a $155 per month sewer bill or 3.15% of MAGI. In this case, and without other subsidized assistance, Millville citizens would pay one of the highest rates in the State.

The 2018 median adjusted gross income (MAGI) for Millville City is $59,300, which is 24 percent higher that the state average of $48,000. Staff prepared a cost model for evaluation of possible loan terms and affordability. Static Model 1 (Attachment 1) presents a 30 year loan approach. Based on the Board's affordability criterion of 1.4% MAGI, potential grant funding should be considered for a sewer bill of greater than $69.18. This model shows that for the proposed Sewer Construction project, the maximum affordable 30 year term loan would be $5.0 million at 0% interest. Here, to keep the financing within the Board's affordability criterion, the $14.3 million project would require $10.9 million grant component.

1 U.S. Department of The Treasury https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield
2 EMMA Municipal Securities and Rulemaking Board. https://emma.msrb.org/ToolsAndResources/MarketIndicators

Laterals and Septic Tank Abandonment

Based on staff's interpretation of Rule R317-101-5 discussed above, the construction of laterals and septic tank abandonment are only eligible to be funded under the Utah Wastewater Project Assistance Program within the Financial Assistance for Onsite Wastewater Systems Program (OWS Program). Only those residents with a total household income of no greater than 150% of the Statewide MAGI would be eligible under the OWS Program. Statewide MAGI (2018) is currently $48,000 which would yield a total household income of less than $72,000 to be eligible.

There are several institutional and many logistical challenges to providing assistance for this part of the project. The best fit for funding some or all of this part of the project would be through grant funding on a standalone "laterals" project. This would free up the use of federal funds, including principal forgiveness, for the collection system part of the project and eliminate the need to secure and administer potentially 100s of small grants. Staff conceives that this funding would be administered as a block grant from the Board to Millville City, who would take responsibility for its administration with agreed upon guidelines from the Board. Conceptually, this is an agreeable approach for Millville.

Collection System and Pressure Line

The collection system and pressure line projects could be funded with 1st or 2nd round federal money or from the Utah Loan fund. Depending on funding levels, access to additional grant funds would need to be through federal dollars and as principal forgiveness. Since the project may have a mix of Board funding and RD funding the project will likely be constructed under 1st round funding terms.

STAFF COMMENTS AND RECOMMENDATION:

Staff supports Millville's collection and lateral projects. It is an important project for Millville in order to protect the community's drinking water source and to plan for the future in their service area. Because of the distinct differences between the "laterals" and the collections system projects and qualifying criteria under first round federal funds versus Utah's hardship grant funds, staff believes the funding needs should be considered under two separate Board approvals for Authorization: (1) Hardship Grant Authorization for construction of laterals and septic tank decommissioning, and (2) Wastewater Project Authorization for the construction of the collection system project.

Based on feedback from the March 3, 2020 Water Quality Finance Committee Meeting, staff considered $1,500,000 hardship grant for laterals and $2,000,000 in principal forgiveness for the collection system. The hardship grant should be sufficient funds to complete the lateral construction for 219 households or partial funding for more households depending on how

Millville elects to award the funding. In addition, the Board could make an additional impact on affordability by financing more of the lateral project with 0% loan.

At these levels of support from the board, Millville City will face sewer rates in the range of $100 per month, which equates to over 2.0% of the City's 2018 MAGI. Because this is well in excess of the Board's usual affordability threshold of 1.4%, staff prepared a supplemental affordability analysis based on recent national guidance. This supplemental analysis is provided in Attachment 2. The analysis shows that the proposed financing package results in mostly moderate financial impacts to the community, including the financially distressed population, up to an average monthly sewer bill of about $100 per month. The analysis also recognizes that the proposed rates do not account for the utility's financial capacity to implement capital improvements of the project infrastructure beyond basic loan reserve fund requirements. These additional costs if managed simply as "funding depreciation" would result in a high residential burden.

Laterals and Septic Tank Decommissioning

Staff recommends that the Board authorize funding for a **$1,500,000 Hardship Block Grant to Millville** for the construction of laterals and septic tank abandonment to be distributed to hardship qualifying residents, subject to the following special conditions:

1) Millville must develop a Lateral Grant Program to document, select, and award these grant funds and have the program approved by DWQ Staff. At a minimum, only those residents with a total household income of no greater than 150% of the Statewide MAGI are eligible under the grant program and the program shall only fund grant eligible improvements. Millville agrees to report on the program components and implementation to the Utah Water Quality Board.
2) If Millville elects to fund the construction of all the laterals and septic tank abandonment in the City through other financing and recoup these costs via monthly fees, then grant recipients shall be charged a reduced rate that deducts grant proceeds proportionately. This rate structure must be established in the approved Lateral Grant Program.
3) Millville must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
4) Millville must pursue and retain remaining funding commitments, including homeowner participation, necessary to fully implement the "laterals project."

Wastewater Project Authorization for the construction of the Collection System Project.

Staff recommends that the Board authorize Millville **$2,000,000 in total funding as principal forgiveness,** including the previously authorized design advance in the amount $350,000, for the design construction of the collection system project, subject to the following special conditions:

1) The engineering agreement for the design advance must be approved by Division staff.

2) Millville must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
3) Millville must complete a Water Conservation and Management Plan.
4) Millville must execute and the Division must approve an interlocal agreement between the City and either Logan City or Hyrum City for treatment and disposal of Millville's wastewater.
5) Millville must pursue and retain remaining funding necessary to fully implement the collection system project prior to loan closing.
6) Millville must develop, implement, and commit to fund at plan levels, an asset management program that is consistent with EPA's Fiscal Sustainability Plan guidance.

Attachments: Millville City Static Cost Model 1
Supplemental Affordability Analysis
U:\ENG_WQ\0-Projects\Millville\Millville Feasibility Report.docx
DWQ-2020-004306
File: Millville City, Admin, Section

ATTACHMENT 1 – MILLVILLE CITY STATIC COST MODEL

STATIC COST MODEL - Millville

Project Costs	Collection	Laterals
Legal/Bonding	$ 50,000	
DWQ Loan Origination Fee	$ 42,000	
Collection Sewers	$ 4,896,000	
Pressure Line	$ 1,530,000	
Laterals		$ 3,150,000
Septic Tank Abandonment		$ 630,000
Engineering, CMS, & Environmental	$ 1,100,000	$ 350,000
Contingency (approx 25% const. cost)	$ 1,607,000	$ 945,000
Subtotals	$ 9,225,000	$ 5,075,000
Total Project Cost:		**14,300,000**

Current Customer Base & User Charges	
ERU's	672
MAGI (2018):	$59,300
Affordable Monthly Rate at 1.4%	$69.18
Current Impact Fee (per ERU):	TBD
Current Monthly User Fee (per ERU)	$2.00
Existing O&M expenses Treatment & Collection	$0
New O&M expenses Treatment & Collection	$326,919
Existing Sewer Debt Service	$15,000

Project Funding		
Applicant Contribution	$	-
WQB Loan	Varies Below	
WQB Grant	Varies Below	
Total Project	**$**	**14,300,000**

Funding Conditions	
Loan Repayment Term:	varies
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE*

WQB Lateral Grant Amount	WQB Lateral Loan Amount	WQB Principal Forgiveness	RD Grant Amount*	RD Loan Amount*	Millville self Fund Amount	Loan Debt Service & Reserve	Total Annual Sewer Cost	Monthly Sewer Cost/ERU	Sewer Cost as a % of MAGI
		-			14,300,000	911,969	1,253,888	155.49	3.15%
			1,845,000	7,380,000	5,075,000	675,840	1,017,759	126.21	2.55%
	1,000,000		1,845,000	7,380,000	4,075,000	653,732	995,651	123.47	2.50%
1,500,000	1,000,000	-	1,845,000	7,380,000	2,575,000	558,071	899,990	111.61	2.26%
1,500,000		1,000,000	1,645,000	6,580,000	3,575,000	542,001	883,920	109.61	2.22%
1,500,000	1,000,000	1,000,000	1,645,000	6,580,000	2,575,000	519,894	861,813	106.87	2.16%
1,500,000		**2,000,000**	**1,445,000**	**5,780,000**	**3,575,000**	**503,824**	**845,743**	**104.88**	**2.12%**
1,500,000	1,000,000	2,000,000	1,445,000	5,780,000	2,575,000	481,716	823,636	102.14	2.07%
1,500,000	2,000,000	2,000,000	1,445,000	5,780,000	1,575,000	459,609	801,528	99.40	2.01%
1,500,000	3,000,000	2,000,000	1,445,000	5,780,000	575,000	437,502	779,421	96.65	1.96%
1,500,000	3,575,000	2,000,000	1,445,000	5,780,000	0	424,790	766,709	95.08	1.92%
10,900,000			-		3,400,000	216,832	558,751	69.29	1.40%

* MODEL ASSUMPTION: RD will be able to fully fund the Collection System Project at a 80%/20% Loan/Grant ratio with a 40 year 2.25% loan terms.

Attachment 2. Millville City Supplemental Project Affordability Analysis

Staff developed an expanded affordability analysis that incorporates components of three significant affordability and hardship criteria identified in the body of research and guidance that has evolved since 1997 - when EPA incorporated storm water, including combined sewer overflows (CSOs), utility financial capacity, "a total water approach," and integrated permitting considerations into its affordability determination guidance[3]. The following statistics were compiled from the applicant's application, 2014-2019 US Census Bureau data, City or District 2019 Financial Statements, and the consulting engineer's estimates when necessary. These statistics represent current conditions, prior to financing the proposed project. Financial impacts of the proposed project are discussed later in this report.

Table 1. Millville Affordability Statistics

Total Project Asset Value	$14,300,000
WQB Loan Term	30 years
Median Household Income (MHI)	$73,661
Median Adjusted Gross Household Income (MAGI)	$59,300
Number of Effective Residential Units (ERUs)	680
Average Annual Sewer Bill per ERU	$22.06
Average Annual Water Bill per ERU	$578.85
Average Annual Storm Water Bill per ERU	$38.04
Average Total Water Bill per ERU	$638.95
Federal Poverty Level (FPL), family of four	$25,750
200% FPL	$51,500
20% Lower Quintile Income (LQ1)	$39,500

Using the above statistics, staff prepared the following criteria that can be used to measure project affordability and potential hardship. These criteria and associated threshold levels are generally based on AWWA et al. or UAC R317-101 guidance, discussed below.

Table 2. Millville City Current Affordability Metrics

Affordability Metrics	Community Value
Sewer Bill as % of Local MAGI	0.04%
Sewer + Storm Water as % of Local MHI	0.08%
Total Water Bill as % of Local MHI	0.87%
Poverty Prevalence Indicator (PPI): % Households below 200% FPL	34%
Household Burden Indicator (HBI): Total Water Bill as % of Income at LQI	1.62%

Utah has used the median adjusted gross household income (MAGI) as its primary indicator of hardship, establishing an affordability threshold of 1.4% MAGI where grant should be considered as part of a finance package for municipal wastewater systems. The Board has exercised flexibility to award (or not) grant funds for projects that result in sewer rates near the threshold value, taking into consideration other community financial conditions. Most other

3 April 2019 "Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector," prepared jointly by AWWA, NACWA, and WEF, April 2019.

states rely on the median household income (MHI) in their affordability determinations, and most guidance incorporates MHI as one indicator of hardship, in spite of its weakness in addressing distressed populations most vulnerable to increases in water costs.

Current guidance of water affordability employs Table 3 to measure impacts to residents in general, with %MHI serving as the Residential Indicator or RI. Table 3 focuses of the combined cost of sanitary and storm sewer (including CSOs) service, excluding drinking water. Guidance recommends using Table 4 to focus on local low-income populations, recognizing the distribution of incomes and examining the segment of the community that is most vulnerable to affordability challenges. In Table 4, the household burden indicator measures economic burden of the most distressed population (LQ1) and the poverty prevalence indicator measures its prevalence. The costs of all water services, including drinking water, are included in Table 4.

Table 3. Residential Financial Impact - Cost per Household as a Percentage of MHI

Financial Impact	Residential Indicator CPH as % of MHI
Low	<1.0
Mid-Range	1.0 – 2.0
High	>2

EPA Final Guidance for CSO Financial Capacity Indicator, EPA 832-B-97-004

Table 4. Economic Burden of Distressed Population

HBI- Water Costs as a Percent of Income at LQ1	PPI - Percent of Households Below 200% of FPL		
	>=35%	20% to 35%	<= 20%
>=10%	Very High Burden	High Burden	Moderate-High Burden
7% to 10%	High Burden	Moderate-High Burden	Moderate-Low Burden
< 7%	Moderate-High Burden	Moderate-Low Burden	Low Burden

Developing a New Framework for Household Affordability and Financial Capability Assessment in the Water Sector, AWWA et al., 2019

Comparing Table 2 metrics with guidance in Tables 3 and 4 tells us:

- The current financial impacts of combined sanitary and storm sewer service are low.
- The current economic burden of all water service on the most distressed population segment is moderate to low.

The financial impacts of the proposed project are discussed in the context of Tables 3 and 4 in the Estimated Annual Cost of Sewer Service section below.

Affordability Analysis Results

Table 5 summarizes affordability metrics as discussed above and incorporates potential costs to

the community for financing the project through a combination of DWQ and RD loans and grants, and borrowing on the commercial market (see cost model Attachment 1). The Table 5 results indicate mostly moderate financial impacts, including the financially distressed population, up to an average monthly sewer bill of about $100 per month, allowing some room for future increases in storm water and drinking water costs (up to Total Water Bill as % of MHI < 4.5%).

Table 5. Millville City Affordability Results for Project Financing Alternatives

	DWQ "Affordable"	Staff Recommend	EPA Max. "Affordable RI"	Commercial Loan at 3.0%
Affordability Metrics / Monthly Bill:	$69.29	$104.88	$119.58	$155.49
Sewer Bill as % of Local MAGI	1.40%	2.12%	2.42%	3.15%
Sewer + Storm Water as % of Local MHI	1.18%	1.74%	2.00%	2.58%
Total Water Bill as % of Local MHI	2.00%	2.56%	2.82%	3.40%
Poverty Prevalence Indicator (PPI): % Households below 200% FPL	34%	34%	34%	34%
Household Burden Indicator (HBI): Total Water Bill as % of LQ1 Income	3.72%	4.77%	5.25%	6.34%
Residential Burden, Table 3	Moderate	Moderate	High	High
Distressed Population Burden, Table 4	Moderate-Low	Moderate-Low	Moderate-Low	Moderate-Low

Table 5 takes no account of the utility's financial capacity to implement capital improvements of the project infrastructure beyond basic loan reserve fund requirements. Utility financial capacity is another important element of affordability guidance. For example, if the City were to fund basic depreciation of the public component of the sewer project ($9,225,000) at a straight line rate of 2.5% per year, the average cost of the sewer bill assuming no salvage value would increase by $28.26 per month per ERU, not including similar costs for other existing assets. At this point, the HBI would exceed 7% for the commercial loan alternative in Table 5 and the distressed population burden will become moderate-high. With inflation, the renewal costs will increase significantly over the asset life.

Balancing the costs of sustaining water system operations with the capacity to implement capital improvements, collectively financial capacity, is the job of asset management. An effective asset management system would track and update replacement costs, direct inform renewal projects, and direct future rate setting decisions needed to maintain an established level of service. Further, implementing asset management should strengthen the utility's financial position, minimize its dependency on debt beyond its needs to accommodate growth, and account for its true cost of service in its service fees. This balancing of costs should be considered in the Board's financing decision.

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

MEMORANDUM

DATE: March 25, 2020

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD, Director

FROM: John Mackey, Engineering Section

SUBJECT: Recommendation for Water Quality Board Approval of Repeal and Reenact R317-401. Graywater Systems.

SUMMARY

The Division initiated an update of Rule *R317-401. Graywater Systems* at the request of local health departments. A proposed draft replacement rule was presented to the Water Quality Board on November 6, 2019. Following revisions by the Board, the proposed rule was submitted for review by the Governor's Office and for public comment. The proposed rule was published in Volume 3 of the *Utah State Bulletin* on February 1, 2020. In addition, the proposed rule was shared with the Utah State University Onsite Wastewater Treatment Training Program, and was presented at the Utah Onsite Wastewater Association (a professional organization dedicated to education and improvement within Utah's onsite industry) annual conference on February 6, 2020. The public comment period ended at 5:00 pm on Monday, March 2, 2020. No written comments were received by the Division during the comment period.

Staff recommends the Board repeal and reenact *R317-401. Graywater Systems* (existing and proposed rules are attached) effective March 25, 2020 as listed in Volume 3 of the *Utah State Bulletin* (February 1, 2020.)

DWQ-2020-006083
File: P:\WQ\DWQDatabases\OnsiteWastewater\Graywater

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R317. Environmental Quality, Water Quality.
R317-401. Graywater Systems.
R317-401-1. General.

[~~(a) This rule shall apply to the construction, installation, modification and repair of graywater systems for subsurface landscape irrigation for single-family residences.~~

~~(b) Nothing contained in this rule shall be construed to prevent the permitting local health department from:~~

~~(i) adopting stricter requirements than those contained herein;~~

~~(ii) prohibiting graywater systems; and~~

~~(iii) assessment of fees for administration of graywater systems.~~

~~(c) Graywater shall not be:~~

~~(i) applied above the land surface;~~

~~(ii) applied to vegetable gardens except where graywater is not likely to have direct contact with the edible part, whether the fruit will be processed or not;~~

~~(iii) allowed to surface; or~~

~~(iv) discharged directly into or reach any storm sewer system or any waters of the State.~~

~~(d) It shall be unlawful for any person to construct, install or modify, or cause to be constructed, installed or modified any graywater system in a building or on a given lot without first obtaining a permit to do such work from the local health department.~~

~~(e) The local health department may require the graywater system in its jurisdiction, be placed under:~~

~~(i) an umbrella of a management district for the purposes of operation, maintenance and repairs,~~

~~(ii) a third-party operation, maintenance and repair contract at the expense of the permittee with a requirement of notification by the permittee and the contractor to the local health department, of the termination of such services.~~

~~**R317-401-2. Definitions.**~~

~~(a) "Graywater" is untreated wastewater, which has not come into contact with toilet waste. Graywater includes wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, laundry tubs, etc., and does not include wastewater from kitchen sinks, photo lab sinks, dishwashers, garage floor drains, or other hazardous chemicals.~~

~~(b) Surfacing of graywater means the ponding, running off, or other release of graywater to or from the land surface.~~

~~(c) "The local health department" means a city-county or multi-county local health department established under Title 26A, which has been given approval by the Director to issue permits for graywater systems within its jurisdiction.~~

~~(d) "Bedroom" means any portion of a dwelling which is so designed as to furnish the minimum isolation necessary for use as a sleeping area. It may include, but not limited to, a den, study, sewing room, sleeping loft, or enclosed porch. Unfinished basements shall be counted as a minimum of one additional bedroom.~~

~~R317-401-3. Administrative Requirements.~~

~~(a) The local health department having jurisdiction must obtain approval from the Director to administer a graywater systems program, as outlined in this section, before permitting graywater systems.~~

~~(b) The local health department request for approval must include a description of its plan to properly manage these systems to protect public health. This plan must include:~~

~~(i) Documentation of:~~

~~(1) the adequacy of staff resources to manage the increased work load;~~

~~(2) the technical capability to administer the new systems including any training plans which are needed;~~

~~(3) the Local Board of Health and County Commission support this request; and~~

~~(4) the county's legal authority to implement and enforce correction of malfunctioning systems and its commitment to exercise this authority.~~

~~(ii) An agreement to:~~

~~(1) advise the owner of the system of the type of system, and information concerning risk of failure, level of maintenance required, financial liability for repair, modification or replacement of a failed system and periodic monitoring requirements;~~

~~(2) advise the building permitting agency of the approved graywater system on the property;~~

~~(3) provide oversight of installed systems;~~

~~(4) record the existence of the system on the deed of ownership for that property;~~

~~(5) issue a renewable operating permit at a frequency not exceeding five years with inspection of the permitted systems before renewal; or, inspect annually the greater of 20 per cent of all installed system or the minimum of ten installed systems; and~~

~~(6) maintain records of all installed systems, failures, modifications, repairs and all inspections recording the condition of the system at the time of inspection such as, but not limited to, overflow, surfacing, ponding and nuisance.~~

~~R317-401-4. Permitting or Approval Requirements.~~

~~(a) Designer certified at Level 3, in accordance with the requirements of R317-11, shall design the graywater systems.~~

~~(b) The local health department may require the following information with or in the plot plan before a permit is issued for a graywater system:~~

~~(i) plot plan drawn to scale, completely dimensioned, showing lot lines and structures, direction and slope of the ground, location of all present or proposed retaining walls, drainage channels, water supply lines, wells, paved areas and structures on the plot, other utilities, easements, number of bedrooms and plumbing fixtures plan in each structure, location of onsite wastewater system and replacement area of the onsite wastewater system, or building sewer connecting to a public sewer, and location of the proposed graywater system;~~

~~(ii) a log of soil formations and identification of the maximum anticipated ground water level as determined by the minimum of one test hole, dug in close proximity, two feet below the bottom of the subsurface irrigation field or drip irrigation area together with a statement of types of soil based on soil classification at the proposed site. Soil and groundwater evaluations will be conducted by professionals fulfilling the requirements of R317-11;~~

~~(iii) details of construction necessary to ensure compliance with the requirements of this rule together with full description of the complete installation including installation methods, construction and materials, as required by the local health department; and~~

~~(iv) other pertinent information the local health department may deem appropriate.~~

~~(c) The installed graywater system shall be operated only after receiving a written approval or an authorization from the local health department after the local health department has made the final construction inspection.~~

~~(d) The local health department will require written operation and maintenance procedures including checklists and maintenance instructions from the designer.~~

~~(e) No graywater system, or part thereof, shall be located on any lot other than the lot which is the site of the building or structure which discharges the graywater unless, when approved by the local health department, a perpetual utility easement and right-of-way is established on an adjacent or nearby lot.~~

~~(f) Onsite wastewater systems existing or to be constructed on a given lot shall comply with the requirements of R317-4 or more restrictive local requirements. The capacity of the onsite wastewater system, including required future areas, shall not be decreased by the existence or proposed installation of a graywater system servicing a given lot.~~

~~(g) No potable water connection will be made to the graywater system without an air gap or a reduced pressure principle backflow prevention assembly for cross connection control, in accordance with R309-105.~~

~~(h) When abandoning a graywater system,~~
~~(i) the owner of the real property on which such system is located shall render it safe by having the surge tank pumped out only in a manner approved by the health department;~~
~~(ii) the surge tank shall be filled completely with earth, sand or gravel within 30 days;~~
~~(iii) the surge tank may also be removed within 30 days, at the owner's discretion;~~
~~(iv) the approving local health department shall be notified at least 30 days before the planned abandonment.~~

~~**R317-401-5. Design of Graywater Systems.**~~
~~(a) The basis of design for a graywater system shall be as follows:~~

~~TABLE 1~~
~~Basis of Design~~

~~Number of Bedrooms~~	~~Flow, gallons per day~~
~~Minimum two bedrooms~~	~~120~~
~~Three bedrooms~~	~~160~~
~~Each additional bedroom~~	~~40~~

~~(b) No graywater system or part thereof shall be located at any point having less than the minimum distances indicated as follows:~~

~~TABLE 2~~
~~Separation Distances~~

~~Minimum Horizontal Distance (in feet) From~~	~~Surge Tank~~	~~Subsurface or Drip Irrigation Field~~
~~Buildings or Structures (1)~~	~~5 feet (2)~~	~~2 feet~~
~~Property line adjoining private property~~	~~5 feet~~	~~5 feet~~
~~Public Drinking Water Sources (3)~~	~~(4)~~	~~(4)~~
~~Non-public Drinking Water Sources~~		
~~Protected (grouted) source~~	~~50 feet~~	~~100 feet~~
~~Unprotected (ungrouted) source~~	~~50 feet (5)~~	~~200 feet (5)~~
~~Streams, ditches and lakes (3)~~	~~25 feet~~	~~100 feet (6)~~
~~Seepage pits~~	~~5 feet~~	~~10 feet~~
~~Absorption System and replacement area~~	~~5 feet~~	~~10 feet~~
~~Septic tank~~	~~none~~	~~5 feet~~
~~Culinary water supply line~~	~~10 feet~~	~~10 feet (7)~~

~~Footnotes:~~
~~(1) Including porches and steps, whether covered or uncovered, but does not include carports, covered walks, driveways and similar structures.~~
~~(2) For above ground tanks the local health department may allow less than five feet separation.~~
~~(3) As defined in R309~~
~~(4) Recommended separation distances will comply with the Source Water Protection requirements R309-600 and 605.~~
~~(5) Recommended separation distance may increase at the discretion of the local health department for adequate public health protection.~~
~~(6) Lining or enclosing watercourse or location above irrigation area may justify reduced separation at the discretion of the local health department.~~
~~(7) For parallel construction or for crossing requires an approval of the local health department.~~

~~(c) Surge Tank~~
~~(i) Plans for surge tanks shall include dimensions, structural, bracing and connection details, and a certification of structural suitability for the intended installation from the manufacturer.~~
~~(ii) Surge tanks shall be:~~
~~(A) at least 250 gallons in volumetric capacity to provide settling of solids, accumulation of sludge and scum unless justified with a mass balance of inflow and outflow and type of distribution for irrigation;~~
~~(B) vented to the surface with a locking, gasketed access opening, or approved equivalent, to allow for inspection and cleaning;~~
~~(C) constructed of structurally durable materials to withstand all expected physical forces, and not subject to excessive corrosion or decay;~~
~~(D) watertight;~~
~~(E) anchored against overturning;~~
~~(F) installed below ground on dry, level, well compacted soil; in a dry well on compacted soil; or above ground on a level, four-inch thick concrete slab;~~
~~(G) Permanently marked showing the rated capacity, and "GRAYWATER IRRIGATION SYSTEM, DANGER - UNSAFE WATER" on the unit;~~
~~(H) provided with an overflow pipe:~~
~~(I) of diameter at least equal to that of the inlet pipe diameter;~~
~~(II) connected permanently to sanitary sewer or to septic tank; and~~

~~(III) equipped with a check valve, not a shut-off valve - to prevent backflow from sewer or septic tank.~~

~~(I) provided with a drain pipe of diameter at least equal to that of the inlet pipe diameter;~~

~~(J) provided with a vent pipe in conformance with the requirements of the International Plumbing Code; and~~

~~(K) provided with unions and fittings for all piping in conformance with the requirements of the International Plumbing Code.~~

~~(d) Valves and Piping~~

~~(i) Graywater piping discharging into a surge tank or having a direct connection to a sanitary drain or sewer piping shall be downstream of an approved water seal type trap(s) If no such trap(s) exists, an approved vented running trap shall be installed upstream of the connection to protect the building from any possible waste or sewer gases.~~

~~(ii) Vents and venting shall meet the requirements of the International Plumbing Code.~~

~~(iii) All graywater piping shall be marked or shall have a continuous tape marked with the words: DANGER - UNSAFE WATER.~~

~~(iv) All valves, including the three-way valve, shall be readily accessible.~~

~~(v) The design shall include necessary types of valves for isolation storage tank, irrigation zones and connection to a sanitary sewer or an onsite wastewater system.~~

~~R317-401-6. Irrigation Fields.~~

~~(a) Each irrigation zone shall have a minimum effective irrigation area for the type of soil and absorption characteristics.~~

~~(b) The area of the irrigation field shall be equal to the aggregate length of the perforated pipe sections within the irrigation zone times the width of the proposed trench. The required square footage shall be determined as follows:~~

~~TABLE 3~~
~~Subsurface Irrigation Field Design~~

~~Soil Characteristics~~	~~Subsurface Irrigation Field area Loading, gallons of graywater per day per square foot~~
~~Coarse Sand or gravel~~	~~5~~
~~Fine Sand~~	~~4~~
~~Sandy Loam~~	~~2.5~~
~~Sandy Clay~~	~~1.6~~
~~Clay with considerable sand or gravel~~	~~1.1~~

~~Clay with sand or gravel 0.8~~

~~TABLE 4~~
~~Drip Irrigation System Design~~

~~Soil Characteristics~~	~~Drip Irrigation System~~	
	~~Maximum emitter discharge, gallons per day~~	~~Minimum number of emitters per gallon per day of graywater~~
~~Coarse Sand or gravel~~	~~1.8~~	~~0.6~~
~~Fine Sand~~	~~1.4~~	~~0.7~~
~~Sandy Loam~~	~~1.2~~	~~0.9~~
~~Sandy Clay~~	~~0.9~~	~~1.1~~
~~Clay with considerable sand or gravel~~	~~0.6~~	~~1.6~~
~~Clay with sand or gravel~~	~~0.5~~	~~2.0~~

~~(c) No irrigation point shall be within two vertical feet of the maximum groundwater table. The applicant shall supply evidence of ground water depth to the satisfaction of the local health department.~~

~~(d) Subsurface drip irrigation system.~~

~~(i) Minimum 140 mesh (115 micron) filter with a capacity of 25 gallons per minute, or equivalent filtration, sized appropriately to maintain the filtration rate, shall be used.~~

~~(ii) The filter backwash and flush discharge shall be captured, contained and disposed of to the sewer system, septic tank, or, with approval of the local health department, in a dry well sized to accept all the backwash and flush discharge water. Filter backwash water and flush water shall not be used for any purpose. Sanitary procedures shall be followed when handling filter backwash and flush discharge of graywater.~~

~~(iii) Emitters recommended by the manufacture shall be resistant to root intrusion, and suitable for subsurface and graywater use.~~

~~(iv) Each irrigation zone shall be designed to include no less than the number of emitters specified in this rule.~~

~~(v) Minimum spacing between emitters should be 14 inches in any direction, or as recommended by the manufacturer.~~

~~(vi) The system design shall provide user controls, such as valves, switches, timers, and other controllers as appropriate, to rotate the distribution of graywater between irrigation zones.~~

~~(vii) All drip irrigation supply lines shall be:~~

~~(A) polyethylene tubing or PVC class 200 pipe or better and schedule 40 fittings;~~

~~(B) With solvent-cemented joints, inspected and pressure tested at 40 pounds per square inch and shown to be drip tight for five minutes, before burial; and~~

~~(C) buried at a minimum depth of six inches. Drip feeder lines can be polyethylene or flexible PVC tubing and shall be covered to a minimum depth of six inches.~~

~~(viii) Where pressure at the discharge side of the pump exceeds 20 pounds per square inch, a pressure-reducing valve able to maintain downstream pressure no greater than 20 pounds per square inch shall be installed downstream from the pump and before any emission device.~~

~~(ix) Each irrigation zone shall include a flush valve/anti-siphon valve to prevent back siphonage of water and soil.~~

~~(c) Subsurface Irrigation Field~~

~~(i) Perforated sections shall be a minimum three-inch diameter and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, or other approved materials, provided that sufficient openings are available for distribution of the graywater in the trench area. Material, construction and perforation of the piping shall be in compliance with the requirements of the International Plumbing Code.~~

~~(ii) Clean stone, gravel, or similar filter material acceptable to the local health department, and varying in size from 3/4 inch to 2 1/2 inches, shall be placed in the trench to the depth and grade required by this section. Perforated sections shall be laid on the filter material. The perforated sections shall then be covered with filter material to the minimum depth required by this section. The filter material shall then be covered with landscape filter fabric or similar porous material to prevent closure of voids with earth backfill.~~

~~(iii) No earth backfill shall be placed over the filter material cover until after inspection and approval of the local health department.~~

~~(iv) Subsurface Irrigation fields shall be constructed as follows:~~

~~TABLE 5~~

~~Subsurface Irrigation Field Construction Details~~

~~Description~~	~~Minimum~~	~~Maximum~~
~~Number of drain lines per subsurface irrigation zone~~	~~one~~	~~---~~
~~Length of each perforated line, feet~~	~~---~~	~~100~~
~~Bottom width of trench, inches~~	~~6~~	~~18~~
~~Total depth of trench, inches~~	~~12~~	~~---~~

~~Spacing of lines, center to center, feet~~	~~4~~	~~---~~
~~Depth of earth cover on top of gravel, inches~~	~~4~~	~~---~~
~~Depth of filter material cover over lines, inches~~	~~2~~	~~---~~
~~Depth of filter material beneath lines, inches~~	~~3~~	~~---~~
~~Grade of perforated lines, Inches per 100 feet~~	~~Level~~	~~4~~

~~(f) Construction, Inspection and Testing~~

~~(i) Installation shall conform to the equipment and installation methods described in the approved plans.~~

~~(ii) The manufacturer of all system components shall be properly identified.~~

~~(iii) Surge tanks shall be filled with water to the overflow line prior to and during construction inspection. All seams and joints shall be left exposed and the tank shall remain watertight.~~

~~(iv) The irrigation field shall be installed in the area which has soils similar to the soils which have been evaluated, and has absorption rate corresponding to the given soil classification.~~

~~(v) A graywater stub-out may be allowed for future construction, provided it is capped prior to the connection to the installed irrigation lines and landscaping. Stub-out shall be permanently marked: GRAYWATER STUB-OUT, DANGER UNSAFE WATER.~~

~~(vi) A flow test shall be performed throughout the system, from surge tank to the point of graywater irrigation. All lines and components shall be watertight.~~

] 1.1. Authorization.

This rule is administered by the Division authorized by Title 19 Chapter 5.

1.2. Purpose.

The purpose of this rule is to protect public health and environment from potential adverse effects from graywater use while promoting water conservation by facilitating reuse of graywater for landscape irrigation within the boundaries of Utah.

1.3. Scope.

This rule shall apply to the design, installation, modification, discharge, use and repair of graywater systems for subsurface landscape irrigation for residential and non-residential buildings.

1.4. Jurisdiction.

Local health departments have jurisdiction to administer this rule. Nothing contained in this rule shall be construed to prevent a local health department from:

(a) adopting stricter requirements than those contained in Rule R317-401;

(b) prohibiting any graywater system within its jurisdiction;
(c) assessing fees for administration of this rule;
(d) receiving a request for a variance, conducting a review, and granting either an approval or denial; or
(e) requiring graywater systems within its jurisdiction be placed under an umbrella of a:
(i) responsible management entity overseen by the local health department;
(ii) contract service provider overseen by the local health department; or
(iii) management district or body politic created by the county for the purpose of operation, maintenance and repairs of all graywater systems.

1.5. Graywater System Administration.
(a) The local health department having jurisdiction shall obtain approval from the Director to administer a graywater systems program before permitting any graywater system.
(b) The local health department request for approval should include a description of its plan to properly manage graywater systems to protect public health. This plan should include:
(i) Documentation of:
(A) the adequacy of staff resources to manage the increased work load;
(B) the technical capability to administer the new program including any training plans that are needed;
(C) local board of health support for this request; and
(D) the county's or the health jurisdiction's legal authority to implement and enforce correction of any malfunctioning system and its commitment to exercise this authority.
(ii) An agreement to:
(A) advise the owner of the system of the type of system, and information concerning risk of failure, level of maintenance required, financial liability for repair, modification or replacement of a failed system and periodic monitoring requirements;
(B) advise the local building authority of the approved graywater system on the property;
(C) provide oversight of installed systems;
(D) record the existence of any graywater system on the deed of ownership for that property;
(E) implement a graywater system operating permit program consisting of:
(1) Tier 1 system operating permits may be issued at the discretion of the regulatory authority; and

(2) Tier 2 system operating permits issued with a renewal frequency not exceeding five years and inspection by the regulatory authority prior to renewal, or annual inspections by the regulatory authority consisting of the greater of 20 per cent of all installed systems or the minimum of ten installed systems;

(F) maintain records of all installed systems, failures, modifications, repairs and all inspections recording the condition of the system at the time of inspection such as overflow, surfacing, ponding and nuisance; and

(G) submit an annual report to the Division on or before September 1 for the previous State of Utah fiscal year's activities showing:

(1) the type and number of graywater systems approved, installed, modified, repaired, failed, and inspected;

(2) a summary of enforcement actions taken, pending, and resolved;

(3) number of variances granted or denied; and

(4) a summary of any water quality performance data collected.

R317-401-2. Definitions.

2.1 Definitions found in Rule R317-4 apply to graywater systems except where specifically replaced in Section R317-401-2:

"Aggregate" means regulatory authority approved clean porous material used to disperse graywater.

"Backflow" means the phenomena that occur when the customer's pressure is higher than the supply pressure. This could be caused by an unprotected cross connection between a drinking water supply and a pressurized irrigation system, a boiler, a pressurized industrial process, elevation differences, air or steam pressure, use of booster pumps or any other source of pressure.

"Bedroom" means any portion of a dwelling that is so designed as to furnish the minimum isolation necessary for use as a sleeping area. It may include a den, study, sewing room, or sleeping loft. Unfinished basements shall be counted as a minimum of one additional bedroom.

"Distribution zone" means any portion of a graywater irrigation system that discharges graywater to a specific area for irrigation purposes.

"Graywater" means wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, or laundry tubs. Graywater does not include wastewater from toilets, kitchen sinks, photo lab sinks, dishwashers, water softeners, garage floor drains, or other sources that pose a public health hazard.

"Irrigation system" means any network of pipes, drip irrigation lines, or mulch shields used to distribute graywater in a manner suitable for subsurface landscape irrigation.

"Mulch Shield" means a perforated vessel into which graywater is discharged and is temporarily detained before draining into a mulch basin.

"Non-Residential" means a building that produces domestic wastewater, and is not a single-family dwelling.

"Regulatory Authority" means either the Utah Division of Water Quality or the local health department having jurisdiction.

"Residential" means a single-family or multi-family dwelling that produces domestic wastewater.

"Stub-out" means a plumbed connection located with fixtures in compliance with Rule R317-401 for diversion of graywater from wastewater plumbing. A stub-out shall be connected to an approved graywater collection system or capped for future connection.

"Surge Tank" means a water-tight tank used to equalize peaks in graywater pressure and flow so that graywater may be dispersed gradually over time. A surge tank is intended only for temporary storage of graywater during periods of peak flow.

"Three-way diverter valve" means a valve that allows the operator to send graywater to the graywater system or to the building sewer.

"Tier 1 system" means a gravity-fed graywater system that does not include any surge tank, pretreatment, or pressurized components. A Tier 1 system may be appropriate for retrofit situations. A Tier 1 system is intended to be simple to operate and can be easily disconnected during winter months or other periods when the system may not be in use.

"Tier 2 system" means a graywater system that employs a surge tank, pretreatment, drip line irrigation system, or pressurized components.

"Unapproved graywater system" means any graywater system that is deemed by the regulatory authority to have been installed, repaired, or altered without required regulatory oversight, permit, or inspection.

R317-401-3. Failure to Comply, Prohibitions, and Abandonment of Graywater Systems.

3.1. Failure to Comply with Rule.

Any person failing to comply with this rule shall be subject to enforcement action as specified in Sections 19-5-115 and 26A-1-123.

3.2. Prohibitions.

It shall be unlawful for any person to construct, install, modify, or cause to be constructed, installed or modified any graywater system in a building or on a given lot without first obtaining a permit to do such work.

(a) Graywater may not be:

(i) discharged on the land surface;

(ii) applied to vegetable gardens except where graywater is not likely to have direct contact with the edible part, whether the fruit will be processed or not;

(iii) used in spray irrigation;

(iv) discharged directly into or reach any storm sewer system or any waters of the State; or

(v) allowed to surface, pond, or runoff.

(b) A graywater system shall be located on the same lot as the building served unless, when approved by the regulatory authority, a perpetual utility easement and right-of-way is established on an adjacent or nearby lot, which includes rights to ingress and egress necessary or convenient for the full or complete use, occupation, and enjoyment of the granted easement.

(c) A graywater system may not be approved as the sole source of water disposal. Connection to an approved sewer or onsite wastewater system is required.

(d) The capacity of any onsite wastewater system, including required future replacement areas, shall not be decreased by the existence or proposed installation of a graywater system servicing a given lot.

(e) A potable water connection may not be made to any graywater system.

(f) Graywater components within the building shall comply with the International Plumbing Code and local building code.

3.3. Abandonment of Graywater Systems.

(a) The regulatory authority shall be notified at least 30 days before the planned abandonment of any graywater system.

(b) Upon approval from the local health department having jurisdiction, the owner of the real property on which a graywater system is located shall have any existing surge tank:

(i) pumped out only in a manner approved by the regulatory authority within 30 days;

(ii) filled completely with earth, sand, or gravel within 30 days; or

(iii) removed within 30 days.

(c) Upon approval from the regulatory authority, the owner of the real property on which a graywater system is located shall disconnect the abandoned graywater system from any buildings served by the system.

R317-401-4. Feasibility Determination and Design Requirements.

4.1. General Criteria for Determining Graywater System Feasibility.

The regulatory authority shall determine the feasibility of using a graywater system. The regulatory authority shall review required information for any existing or proposed system to determine graywater system feasibility. The required information shall be prepared at the owner's expense by, or under the

supervision of, a qualified person approved by the regulatory authority. Required information shall include:

(a) name and address of the property owner and person requesting feasibility;

(b) the county recorder's plat and parcel ID and situs address if available;

(c) the location and distance to the nearest sewer, owner of sewer, whether property is located within the sewer service boundary, and size of sewer; and

(d) a statement of proposed use if other than a single-family dwelling.

4.2. Soil and Site Evaluation.

Soil and groundwater evaluations shall be conducted by professionals fulfilling the requirements of Rule R317-11.

(a) Soil classification and maximum ground water determination shall be:

(i) performed using a minimum of one test hole;

(ii) dug in close proximity to the proposed subsurface distribution zone;

(iii) be at least two feet below the bottom of the proposed subsurface distribution zone; and

(iv) evaluated and reported using the USDA Soil Texture Classification method.

(b) Soil sample test results may also be accepted from a qualified soil analysis lab at the discretion of the local health department.

4.3. Plan Review and Permitting.

Plans and specifications for the construction, alteration, extension, or change of use for any graywater system shall be submitted to the regulatory authority. The regulatory authority shall review said plans and specifications as to their adequacy of design for the intended purpose, and shall, if necessary, require such changes as are required by these rules. When the reviewing regulatory authority is satisfied that plans and specifications are adequate for the conditions under which a system is to be installed and used, a construction permit shall be issued to the property owner. Construction of any graywater system may not commence until the regulatory authority has issued a construction permit.

(a) System Designer Qualifications.

Graywater system design requirements are determined by the complexity of the system. Systems shall be permitted by tiers.

(i) a Tier 1 System designer shall be certified at a Level 2 as defined by R317-11.

(ii) a Tier 2 System designer shall be certified at a Level 3 as defined by R317-11.

(b) Information Required.

Plans submitted for review shall be drawn to scale, 1" = 10', 20' or 30', or other scale as approved by the regulatory authority. Plans shall be prepared in such a manner that the contractor can read and follow them in order to install the system properly. Depending on the individual site and circumstances, or as determined by the regulatory authority, required information may include:

(i) applicant information consisting of:

(A) the name, current address, and telephone number of the applicant;

(B) complete address, legal description of the property, or both to be served by the graywater system.

(ii) a graywater irrigation system site plan consisting of:

(A) submittal date of plan;

(B) North arrow;

(C) lot size and dimensions;

(D) ground surface contours, preferably at 2 foot intervals, of both the original and proposed final grades of the property, or relative elevations using an established bench mark;

(E) maximum number of bedrooms, including statement of whether a finished or unfinished basement will be provided, the number of fixtures proposed to be connected to graywater system, or if other than a single family dwelling, the number of occupants expected and the estimated gallons of wastewater generated per day;

(F) location and dimensions of paved and unpaved driveways, roadways and parking areas;

(G) proposed location and dimensions of the essential components of the graywater system;

(H) location of all soil exploration pits and all percolation test holes;

(I) location of any present or proposed retaining walls, drainage channels, or buildings;

(J) location of building sewer and water service line to serve the building;

(K) location of easements or drainage right-of-ways affecting the property;

(L) location of all intermittent or year-round streams, ditches, watercourses, ponds, subsurface drains, etc. within 100 feet of proposed graywater system;

(M) location, type, and depth of all existing and proposed non-public water supply sources within 200 feet of the graywater system, and of all existing or proposed public water supply sources within 1500 feet of the graywater system and associated source protection zones;

(N) distance to nearest public water main and size of main;

(O) distance to nearest public sewer, size of sewer, and whether accessible by gravity;

(P) location of any onsite wastewater system, any replacement area, and location of the proposed graywater system;

(iii) a statement with the site plan indicating the source of culinary water supply, whether a well, spring, non-public or public system, and its location and distance from any graywater systems within 200 feet. The regulatory authority may not approve a graywater irrigation system if:

(A) the applicant has a private culinary system; and

(B) lacks a water right with use type designated for irrigation by the Utah Division of Water Rights.

(iv) relative elevations, using an established bench mark, including:

(A) building drain outlet;

(B) the outlet of any graywater system components;

(C) the final ground surface over the graywater system.

(v) Details for the graywater system design site, plans, and specifications as listed in Section R317-401-5, including:

(A) schedule or grade, material, diameter, and minimum slope of graywater sewer and distribution pipes;

(B) surge tank capacity, design, cross sections, etc., materials, and dimensions, if applicable. If tank is commercially manufactured, the name and address of manufacturer shall be provided;

(C) subsurface graywater discharge system details, including:

(1) details of mulch shields and mulch shield basins, if provided;

(2) description and details for method of graywater dispersal, whether aggregate or chambers;

(3) length, slope, and spacing of each absorption system component;

(4) maximum slope across ground surface of absorption system area;

(5) distance of graywater discharge system from trees, cut banks, fills, or subsurface drains;

(6) cross section of graywater discharge system showing the:

(I) depth and width of graywater discharge system excavation;

(II) depth of distribution pipe;

(III) depth of aggregate;

(IV) barrier material, i.e. synthetic filter fabric, straw, etc., used to separate aggregate from cover; and

(V) depth of cover; and

(7) other pertinent information.

4.4. Plans Submitted.

(a) All applicants requesting plan approval for a graywater system shall submit a sufficient number of copies of required

information to enable the regulatory authority to retain one copy as a permanent record.

(b) Applications may be rejected if proper information is not submitted.

R317-401-5. Design of Graywater Systems.

5.1. The basis of design for a graywater system shall be:

(a) according to Table 1 or Table 2 for residential usage;

TABLE 1

Design Flow, Entire Single Family Dwelling

Number of Bedrooms	Flow, gallons per day
Two Bedrooms (Minimum)	160
Three Bedrooms	240
Each Additional Bedroom	40

TABLE 2

Design Flow, Single Fixture

Fixture	Flow, gallons per day/bedroom
Washing Machine	30
Shower/Bath Tub	50
Hand Wash Basin	5
Other Sources	Shall be sized by a qualified designer

(b) non-residential usage shall be sized by a certified designer and evaluated on a case-by-case basis by the regulatory authority;

(c) all materials shall meet the requirements of the International Plumbing Code and local building code; and

(d) no graywater system or any part thereof shall be located at any point having less than the minimum distances indicated in Table 3:

TABLE 3

Separation Distances

Minimum Horizontal Distance From(ft)	Surge Tank	Subsurface Discharge
Building or Structures (a)	5 (b)	2
Property Line	5	5
Public Drinking Water Sources (c)	(d)	(d)
Non-public Drinking Water Sources		

Protected (grouted) Source	50	100
Unprotected (ungrouted) Source	50 (e)	200 (e)
Streams, Ditches, and Lakes (c)	25	100 (f)
Seepage Pits	5	10
Absorption System and Replacement Area	5	10
Septic Tank	5	5
Culinary Water Supply Line	10	10 (g)

Notes:
(a) Including porches and steps, whether covered or uncovered, but does not include carports, covered walks, driveways and similar structures.
(b) For above ground tanks the regulatory authority may allow less than five feet separation.
(c) As defined in Rules R309-600 and R309-605.
(d) Recommended separation distances will comply with the Source Water Protection requirements listed in Rules R309-600 and R309-605.
(e) Recommended separation distance may increase at the discretion of the regulatory authority for the purpose of protecting public health.
(f) Lining or enclosing watercourse or location above graywater discharge area may justify reduced separation distance(s) at the discretion of the regulatory authority.
(g) As defined in Rule R309-550

5.2. Surge Tank

(a) a surge tank is required for a Tier 2 graywater system. Plans for a surge tank shall include dimensions, structural, bracing and connection details, and a certification of structural suitability for the intended installation from the manufacturer.

(b) a surge tank shall be:

(i) a minimum of 250 gallons in volumetric capacity to provide settling of solids, accumulation of sludge and scum unless justified with a mass balance of inflow and outflow and type of distribution for graywater discharge;

(ii) accessible to the surface with a locking, gasketed access opening, or approved equivalent, to allow for inspection and cleaning;

(iii) constructed of structurally durable materials to withstand all expected physical forces, and not subject to excessive corrosion or decay;

(iv) watertight;

(v) anchored against overturning;

(vi) installed below ground on dry, level, well-compacted soil or above ground on a level, four-inch thick concrete slab;

(vii) permanently marked showing the rated capacity, and the words GRAYWATER IRRIGATION SYSTEM, DANGER - UNSAFE WATER on the unit;

(viii) provided with an overflow pipe:

(A) of diameter at least equal to that of the inlet pipe diameter;

(B) connected permanently to the building sewer;

(C) equipped with a check valve or backwater valve, accessible for cleaning and maintenance, to prevent backflow from building sewer; and

(D) which may not include a shut-off valve.

(ix) provided with a drain pipe of diameter at least equal to that of the inlet pipe diameter; and

(x) provided with a vent pipe in conformance with the requirements of the International Plumbing Code and local building code;

5.3. Valves and Piping.

(a) Graywater piping that discharges into a surge tank or has a direct connection to any sanitary drain or sewer piping shall be downstream of an approved water seal type trap. If no such trap exists, an approved vented running trap shall be installed upstream of the connection to protect the building from any possible waste or sewer gases.

(b) Vents, venting, and piping shall meet the requirements of the International Plumbing Code and local building code.

(c) All graywater piping shall be purple or shall have a continuous marking with the words DANGER - UNSAFE WATER.

(d) A graywater system shall have a 3-way diverter valve at any stub-out connection. A 3-way diverter valve shall be connected to a fixture or inlet, an approved graywater system, and building sewer.

(e) Any 3-way diverter valve shall be readily accessible and clearly marked to indicate directional flow to graywater system or building sewer.

R317-401-6. Construction and Installation of Irrigation Systems.

6.1. Each distribution zone shall have a minimum effective irrigation area for the soil characteristics and vegetation needs.

6.2. The area of a distribution zone shall be equal to the total length of the perforated pipe sections within the distribution zone multiplied by the width of the proposed trench. The required square footage shall be determined using Table 4 or Table 5.

TABLE 4

Subsurface Irrigation System Design

Soil Characteristics	Subsurface Irrigation System Area Loading, gallons of graywater per day per square foot
Coarse Sand or Gravel	5
Fine Sand	4
Sandy Loam	2.5
Sandy Clay Loam	1.6
Clay Loam	1.1
Clay with Sand or Gravel	0.8

TABLE 5

Drip Irrigation System Design

Soil Characteristics	Minimum Number of Emitters, per gallon per day	Maximum Emitter Discharge, gallons per day
Coarse Sand or Gravel	0.6	1.8
Fine Sand	0.7	1.4
Sandy Loam	0.9	1.2
Sandy Clay Loam	1.1	0.9
Clay Loam	1.6	0.6
Clay with Sand or Gravel	2.0	0.5

6.3. The lowest point of any distribution zone shall be at least two vertical feet above the maximum groundwater table. Applicant shall provide sufficient groundwater data to the regulatory authority. Subsection R317-4-4.1.B.4 may be used to determine maximum groundwater elevation.

6.4. Subsurface drip irrigation system.

Subsurface drip irrigation systems shall be constructed so that:

(a) A 140 mesh or 115 micron filter with a capacity of 25 gallons per minute minimum shall be used to prevent drip irrigation system clogging;

(b) The filter backwash and flush discharge shall be captured, contained, and discharged to the sewer system or approved onsite wastewater system;

(i) filter backwash water and flush water may not be used for any purpose;

(ii) sanitary procedures shall be followed when handling filter backwash and flush discharge of graywater;

(c) Emitters recommended by the manufacturer shall be resistant to root intrusion and suitable for subsurface and graywater dispersal;

(d) Each irrigation zone shall include the minimum number of emitters required to meet the daily graywater flows as defined in Table 5;

(e) Minimum spacing between emitters should be 12 inches in any direction, or as recommended by the manufacturer;

(f) The system shall provide user controls such as valves, switches, timers, and other controls as appropriate, to rotate the discharge of graywater between distribution zones;

(g) All drip irrigation force mains and manifolds shall:

(i) meet requirements of Table 7;

(ii) be connected with schedule 40 fittings;

(iii) be connected as per manufacturer's specifications, inspected and pressure tested at 40 pounds per square inch and shown to be drip tight for five minutes, before burial; and

(iv) be buried at a minimum depth of six inches;

(h) Lateral distribution lines may be PE or flexible PVC tubing and shall be covered to a minimum depth of six inches;

(i) Pressure at the emitter shall meet the manufacturer's recommendations; and

(j) Each distribution zone shall include a flush valve, and where applicable, an anti-siphon valve to prevent back siphonage of water and soil.

6.5. Subsurface Irrigation System.

Subsurface irrigation systems consisting of pipe and gravel or chambers may be used for dispersal of graywater.

(a) Perforated pipe sections shall be a minimum three-inch diameter and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated PVC pipe, or other approved materials as required in Table 7, provided that sufficient openings are available for distribution of the graywater in the trench area. Material, construction and perforation of the piping shall be in compliance with the requirements of the International Plumbing Code and local building code.

(b) A subsurface irrigation system shall be constructed in accordance with Table 6.

(c) Aggregate shall be placed in the trench to the depth and grade required by Table 6. The aggregate shall then be covered with barrier material to prevent closure of voids with backfill.

(d) Chamber systems shall be installed as per manufacturer’s specifications. All chambers shall meet requirements listed in Rule R317-4.

(e) Backfill may not be placed over the barrier material or chambers prior to inspection and approval by the regulatory authority.

TABLE 6

Lateral Construction Details

Description	Minimum	Maximum
Number of drain lines per zone	1	---
Length of each perforated line, feet	---	150
Bottom width of trench, inches	6	36
Total depth of trench, inches	9	36
Spacing of lines, wall to wall, feet	4	---
Depth of backfill, inches	6	---
Depth of aggregate cover over lines, inches	2	---
Depth of aggregate beneath lines, inches	3	---
Grade of drain lines, inches per 100 feet	Level	4

TABLE 7

Minimum Standards for Graywater Sewer and Distribution Pipe Materials (a)

Acceptable Graywater Pipe Materials

Type of Pipe	Minimum Standard
Acrylonitrile-Butadiene Styrene (ABS)	ASTM (b), D-2680, D-2751, F-628
Polyvinyl Chloride (PVC)	ASTM D-2665, D-3033, D-3034

Acceptable Distribution Pipe Materials

Type of Pipe	Minimum Standard
ABS	ASTM D-2661, D-2751
Polyethylene (PE)	Smooth Wall ASTM D-3350
PVC	ASTM D-2665, D-3033, D-3034, D-2729(c)

Notes:
(a) Each length of graywater sewer and distribution pipe shall be stamped or marked.
(b) American Society for Testing and Materials.
(c) Although perforated PVC, ASTM D-2729 is approved for absorption system application, the solid-wall version of this pipe is not approved for any application.

R317-401-7. Construction and Installation of Branched Drain Basin Systems.

7.1. Branched Drain Basin Construction Details.

(a) Mulch shields shall be constructed of a durable material and should be placed for optimum effluent distribution.

(b) Aggregate shall be placed in the basin in a manner that will allow proper effluent distribution, prevent ponding, with a minimum depth of 6 inches over graywater flood level, and as required in Table 6.

(c) Backfill may not be placed over the mulch shields or flow splitters until after inspection and approval by the regulatory authority.

(d) Access to any flow splitter or mulch shield shall be within 6 inches of finished grade.

(e) Branched drain basins shall be constructed in accordance with Table 8 and Table 9.

TABLE 8

Mulch Basin Sizing

Soil Type	Mulch Basin Loading Rate, gallons of graywater per day per square foot	Maximum gallons per mulch shield per day(a)
Sand	5	60
Loam	3	40
Clay	1	20

(a) The number of gallons per mulch shield per day is site specific and the designer may need to decrease the number of gallons per mulch shield when appropriate or as required by the regulatory authority.

TABLE 9

Mulch Basin Construction Details

Description	Minimum	Maximum
Cleanouts	1	---
3-way Valve or similar (per stub out location)	1	---
Discharge Points (per stub-out location)	2	16
Double Ell Flow Splitter	1	---
Pipe Diameter	2 inch	4 inch
Pipe Slope	1/4 inch per foot	---
Mulch Shield Volume	5 gallons	---
Air gap in mulch shield above highest perforation	6 inches	---

7.2. Construction, Inspection and Testing.

(a) Installation shall conform to the equipment and installation methods described in the approved plans.

(b) Any surge tank shall be filled with water to the overflow line prior to and during construction inspection. All seams and joints shall be left exposed and the tank shall remain watertight.

(c) The irrigation system shall be installed in the area which has soils similar to the soils which have been evaluated, and has an absorption rate corresponding to the given soil classification.

(d) A graywater stub-out may be allowed for future construction, provided it is capped prior to connection to the installed irrigation lines and landscaping. Any stub-out shall be permanently marked: GRAYWATER STUB-OUT, DANGER UNSAFE WATER.

(e) A flow test shall be performed throughout the system, from surge tank to the point of graywater discharge. All lines and components shall be watertight.

(f) Written operation and maintenance procedures including checklist and maintenance instructions from the designer shall be provided to the owner prior to the regulatory authority issuing written approval or authorization.

(g) The installed graywater system shall be operated only after receiving a written approval or authorization from the regulatory authority after the regulatory authority has made the final construction inspection.

R317-401-8. Variance to Design Requirements.

8.1. Request for a Variance.

A variance may not be approved unless an applicant demonstrates that:

(a) A graywater system consistent with Rule R317-401 and local health department requirements cannot be constructed as determined by the regulatory authority;

(b) Graywater from the proposed graywater system may not:

(i) contaminate groundwater or waters of the state;

(ii) migrate to the ground surface; or

(iii) move off site.

(c) The proposed system will result in equal or greater protection of public health and the environment than is required by meeting the minimum standards and intent of this rule; and

(d) Adjacent properties, including the current and reasonably anticipated uses of adjacent properties, will not be jeopardized if the proposed system is constructed, operated, and maintained.

8.2. Procedure for Requesting a Variance.

(a) A variance request shall include the information and documentation described in Subsection R317-401-6.

(b) The regulatory authority shall review the variance request and prepare a written determination outlining the conditions of approval or denial of the request. The review shall identify the factors considered in the process and specify the basis for the determination.

8.3. Application Requirements.

The variance application shall include all information and documentation necessary to evaluate proposal and ensure that public health and the environment are protected.

(a) The regulatory authority shall require a detailed description of the proposed system, including a detailed explanation of wastewater treatment technologies allowed by this rule that have been considered for use, and that will provide the best available treatment.

(b) The regulatory authority may require technical justification and appropriate engineering, geotechnical, hydrogeologic, and reliability information justifying the request for a variance.

8.4. Variance Approvals.

(a) A variance may not be approved unless the applicant demonstrates that all of the required conditions in Rule R317-401 are met.

(b) The regulatory authority may not issue an approval or an operating permit for a graywater system that does not comply with this rule unless a variance has been approved.

(c) Notice of the conditions shall be recorded in the chain of title for the property in the office of the county recorder. The notice shall include:

(i) the description of the system and variance conditions;

(ii) operation and maintenance requirements;

(iii) permission for the regulatory authority to access the property for the purpose of inspection and monitoring of the system; and

(iv) owner responsibilities to correct, repair, or replace the system at the direction of the regulatory authority.

R317-401-9. APPENDICES.

APPENDIX A. RECOMMENDED BEST MANAGEMENT PRACTICES.

The use of plant friendly products is important when using graywater for irrigation. Products should be salt and borax free in addition to being biodegradable and non-toxic. Plant friendly products are key when reusing graywater. Chlorine bleach can be harmful to plants and should be diverted to your sewer system. Hydrogen peroxide based products can be used instead of bleach. The pH of your graywater also needs to be considered. Most soaps do not change the pH but some do. Liquid soaps typically do not change the pH of graywater. Bar soaps can make the water very basic. Choosing plants that are not affected by pH is best if

you are not sure if the pH is being affected by the products you typically use. Graywater systems are not maintenance free and require consistent and frequent inspection by the owner to ensure proper functionality.

7.1. Graywater Compatible Plants.

(a) Trees and fruit trees;

(b) Bushes, shrubs, and vines;

(c) Larger perennials and annuals; and

(d) Food crops for which the graywater will not come into contact with the edible portion of the plant.

7.2. Graywater Incompatible Plants.

(a) Aacidic soil-loving plants;

(b) Seedlings or young plants.

7.3. Graywater Irrigation Issues.

Graywater can clog drip systems without proper filtration and regular maintenance. Either remove solid particles from the water (by filtering or settlement) or increase the diameter of the holes in the irrigation pipe. It is recommended that drip irrigation hoses with small outlets not be used for graywater irrigation unless the solid particles have been removed.

7.4. Maintaining Graywater Irrigation Zones.

It may be necessary to replace mulch, flush soil with potable or fresh water periodically during extended periods of no rain in order to disperse minerals, such as salts from building up. Check for these issues and adjust graywater output accordingly:

(a) Unusual odors;

(b) Clumping of soil;

(c) Poor vegetation growth;

(d) Presence of damp or boggy ground after irrigation, or soil is excessively damp with signs of surface ponding and run-off;

(e) a fine sheet of clay covering the surface; or

(f) evidence of pests and diseases on plants.

APPENDIX B. INSPECTION AND MAINTENANCE SCHEDULE.

TABLE 10

Graywater System Inspection and Maintenance Frequency

Inspection and Maintenance Item	Frequency
Inspect and clean filters and screens, replacing where necessary	Every 3 months
Inspect and verify that disinfection, filters, and water quality treatment devices and systems are operational	In accordance with manufacturer's instructions and the

and maintaining minimum water quality requirements	regulatory authority
Inspect pumps and verify operation	After initial installation and every 12 months thereafter
Inspect valves and verify operation	After initial installation and every 12 months thereafter
Inspect pressure tanks and verify operation	After initial installation and every 12 months thereafter
Inspect and clear debris from storage tanks, locking devices, and verify operation	After initial installation and every 12 months thereafter
Inspect caution labels and markings	After initial installation and every 12 months thereafter
Inspect for cross-connections and test entire system	After initial installation and every 12 months thereafter
Inspect and maintain mulch basins	As needed to maintain mulch depth and prevent ponding and runoff

KEY: wastewater, graywater, drip irrigation
Date of Enactment or Last Substantive Amendment: [~~September 24, 2013~~]2020
Notice of Continuation: April 8, 2019
Authorizing, and Implemented or Interpreted Law: 19-5

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

M E M O R A N D U M

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD, Director

FROM: UPDES Surface Water Section

DATE: March 25, 2020

SUBJECT: Proposed Revisions to R317-8, Utah Pollutant Discharge Elimination System (UPDES)

Action Item: Request Board approval to adopt rulemaking for the proposed changes.

Staff requests the Board's approval to adopt rulemaking for the following proposed revisions to Utah's Utah Pollution Discharge Elimination System (UPDES) rules. With the approval of the Board, staff will implement the changes effective April 1, 2020. The proposed rulemaking changes were coordinated with the Utah Division of Administrative Rules, which included publication in the Utah Bulletin for public notices with comment periods. The comment period ended March 3, 2020 and no comments were received by DWQ. Therefore, staff recommends adoption of the proposed revisions to the UPDES rules as drafted.

Summary of Proposed Revisions.

Attachment 1 is the redline-strikeout version of the proposed change that was originally presented to the Board on November 6, 2019. The applicable citations were modified as highlighted prior to the public notice to comply with DAR requirements.

R317-8-6.5(3)(b). The EPA has finalized 40 CFR 124.10(c)(2)(iv) to allow permitting authorities to provide public notice of permitting actions for UPDES major individual and general permits on the permitting authorities publicly available website in lieu of the newspaper publication requirement in 40 CFR 124.10(c)(2)(i).

Utah DWQ would like to adopt this rule as it would save the cost of public noticing the draft permits in the local newspapers, which cost on average $300.00 per publication. DWQ public notices 20-25 permit actions on average each year in local newspapers.

ATTACHMENT 1
Redline/Strikeout of Proposed Amendments to R317-8
Utah Pollution Discharge Elimination System (UPDES)

R317. Environmental Quality, Water Quality.
R317-8. Utah Discharge Elimination System (UPDES)
R317-8-6. Review Procedures
R317-8-6.5. Public Notice of Permit Actions and Public Comment Period
R317-8-6.5(3). Methods

6.5 PUBLIC NOTICE OF PERMIT ACTIONS AND PUBLIC COMMENT PERIOD

(1) Scope.

(a) The Director will give public notice that the following actions have occurred:

1. A permit application has been tentatively denied under R317-8-6.3(2); or

2. A draft permit has been prepared under R317-8-6.3(4);

3. A public hearing has been scheduled under R317-8-6.7; and

4. A UPDES new source determination has been made in accordance with the definition in R317-8-1.

(b) No public notice is required when a request for permit modification, revocation and reissuance, or termination is denied under 2. Written notice of the denial will be given to the requester and to the permittee.

(c) Public notices may describe more than one permit or permit action.

(2) Timing.

(a) Public notice of the preparation of a draft permit, including a notice of intent to deny a permit application, required under R317-8-6.5(1) will allow at least thirty (30) days for public comment.

(b) Public notice of a public hearing shall be given at least thirty (30) days before the hearing. (Public notice of the hearing may be given at the same time as public notice of the draft permit and the two notices may be combined.)

(3) Methods. Public notice of activities described in R317-8-6.5(1)(a) will be given by the following methods:

(a) By mailing a copy of a notice to the following persons (Any person otherwise entitled to receive notice under this paragraph may waive their rights to receive notice for any classes and categories of permits.):

1. The applicant, except for UPDES general permittees, and Region VIII, EPA.

2. Federal and state agencies with jurisdiction over fish, shellfish, and wildlife resources, the Advisory Council on Historic Preservation, Utah Historic Society and other appropriate government authorities, including any affected states;

3. The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

4. Any user identified in the permit application of a privately owned treatment works; and

5. Persons on a mailing list developed by:

a. Including those who request in writing to be on the list;

b. Soliciting persons for area lists from participants in past permit proceedings in that area; and

c. Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in such publications as newsletters, environmental bulletins, or state law journals. The Director may update the mailing list from time to time by requesting written indication of continued interest from those listed. The name of any person who fails to respond to such a request may be deleted from the list.

6. Any unit of local government having jurisdiction over the area where the facility is proposed to be located and each State agency having any authority under State law with respect to construction or operation of such facility.

7. Any other agency which the Director knows has issued or is required to issue a RCRA, UIC, PSD (or other permit under the Federal Clean Air Act, NPDES, 404, or sludge management permit).

(b) For major permits, UPDES general permits, and permits that include sewage sludge and application plans, the Director will publish a notice in a daily or weekly newspaper within the area affected by the facility or activity; or in lieu of the requirement for publication of a notice in a daily or weekly newspaper, the Director may publish all notices of activities described in Subsection R317-8-6.5(1)(a) to the Division of Water Quality's public website. If the Director selects this option for a draft permit, in addition to meeting the requirements in Subsection R317-8-6.5(4), the Director must post the draft permit and fact sheet on the website for the duration of the public comment period.

(c) In a manner constituting legal notice to the public under Utah law; and

(d) Any other method reasonably determined to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation.

(4) Contents.

(a) All public notices issued under this part shall contain the following minimum information:

1. Name and address of the office processing the permit action for which notice is being given;

2. Name and address of the permittee or permit applicant and, if different, of the facility or activity regulated by the permit, except in the case of UPDES draft general permits under R317-8-2.5;

3. A brief description of the business conducted at the facility or activity described in the permit application or the draft permit, for UPDES general permits when there is no application;

4. Name, address and telephone number of a person from whom interested persons may obtain further information, including copies of the draft permit or draft general permit as the case may be, statement of basis or fact sheet, and the application; and

5. A brief description of the comment procedures and the time and place of any public hearing that will be held, including a statement of procedures to request a public hearing, unless a hearing has already been scheduled, and other procedures by which the public may participate in the final permit decision;

6. For UPDES permits only (including those for sludge-only facilities), a general description of the location of each existing or proposed discharge point and the name of the receiving water and the sludge use and disposal practice(s) and the location of each sludge treatment works treating domestic sewage and use or disposal sites known at the time of permit application. For draft general permits, this requirement will be satisfied by a map or description of the permit area;

7. Any additional information considered necessary or appropriate.

(b) Public notices for public hearings. In addition to the general public notice described in .5(4) the public notice for a permit hearing under R317-8-6.7 will contain the following information:

1. Reference to the date of previous public notices relating to the permit;

2. Date, time, and place of the hearing;

3. A brief description of the nature and purpose of the hearing, including the applicable rules and procedures.

(c) Requests under R317-8-2.3(4). In addition to the information required under R317-8-6.5(4)(a) public notice of a UPDES draft permit for a discharge when a R317-8-2.3(4) request has been filed will include:

1. A statement that the thermal component of the discharge is subject to effluent limitations under R317-8-4.2(1) and a brief description, including a quantitative statement of the thermal effluent limitations; and

2. A statement that a R317-8-2.3(4) request has been filed and that alternative less stringent effluent limitations may be imposed on the thermal component of the discharge and a brief description, including a quantitative statement, of the alternative effluent limitations, if any, included in the request.

3. If the applicant has filed an early screening request under R317-8-7.4(4) for a variance, a statement that the applicant has submitted such a plan.

(5) In addition to the general public notice described in .5(4) all persons identified in .5(3)(a)1-4 will be mailed a copy of the fact sheet, the permit application and the draft permit.