



State of Utah

GARY R. HERBERT
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Lieutenant Governor

Department of Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

Water Quality Board
Jennifer Grant, Chair
Gregg A. Galecki, Vice Chair
Steven K. Earley
Brandon Gordon
Michael D. Luers
L. Scott Baird
Emily Niehaus
James Webb
Dr. James VanDerslice
Dr. Erica Brown Gaddis
Executive Secretary

Utah Water Quality Board Meeting Via Adobe Connect

June 24, 2020
Meeting Begins at 8:30 am

AGENDA

Water Quality Board Meeting – Roll Call

A. Minutes:

Approval of minutes for April 22, 2020 Water Quality Board Meeting Jennifer Grant

B. Executive Secretary's Report

Erica Gaddis
Sudweeks Award Presentation Jennifer Grant

C. Funding Requests:

1. Financial Report.....Emily Cantón
2. Summary of Current Financial Assistance Applications John Mackey
3. Perry City Request for Loan Refinancing..... John Mackey
4. Duck Creek Request for Reauthorization Skyler Davies
5. Millville City Request for 2001 Grant Repayment Forgiveness.....Ken Hoffman

D. Rule Making:

1. Request to Initiate Rule Making for R317-1-3.2, Compliance with Secondary Treatment Requirements
..... Jennifer Robinson
2. Request to Initiate Rule Making for R317-2, Standards of Water Quality for Waters of the State
.....Chris Bittner

E. Other Business:

1. Introduction to 2020 Water Quality Standards Triennial ReviewChris Bittner
2. Wastewater Monitoring for Coronavirus.....Erica Gaddis

F. Public Comment Period

G. Meeting Adjournment

Next Meeting August 26, 2020 at 8:30 am
DEQ Board Room 1015
195 North 1950 West
Salt Lake City, UT 84116

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 lwys@utah.gov at least five working days prior to the scheduled meeting.

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Revised 6/16/2020

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MINUTES

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

UTAH WATER QUALITY BOARD

Via Adobe Connect

April 22, 2020

8:30 am

UTAH WATER QUALITY BOARD MEMBERS PRESENT

Scott Baird	Mike Luers
Gregg Galecki	Emily Niehaus
Brandon Gordon	James VanDerslice
Jennifer Grant	James Webb

Excused: Steven Earley

DIVISION OF WATER QUALITY STAFF MEMBERS PRESENT

Emily Cantón	James Harris
Marsha Case	Ken Hoffman
Scott Daly	Brenda Johnson
Skyler Davies	John Mackey
Dusty Earley	Duncan Nelson
Judy Etherington	Andrew Pompeo
Erica Gaddis	Mark Stanger
Dan Griffith	Beth Wondimu
Angela Gunderson	

OTHERS PRESENT

Matt Francis	AECOM
Amber Qalagari	EDO
Marv Allen	Hansen, Allen & Luce, Inc.
Dave Decker	Provo City
Rebecca Andrus	Provo City
Gary Calder	Provo City
Jimmy McKnight	Provo City
Mark Ogren	Provo City

OTHERS PRESENT

David Damschen	State Treasurer's Office
Jay Olsen	Utah Dept. of Agriculture & Food
Brent Justensen	Waste Water Operator Certification Council
Cory Christiansen	Water Works Engineers
Bill Prater	William L Prater, LLC

Ms. Grant called the work meeting to order at 8:30 AM

WORK MEETING

Storm Water Program Updates: Ms. Riley presented the Board with storm water program updates as indicated in the packet.

Ms. Grant then called the Board meeting to order at 9:30 AM and took roll call for the members of the Board and audience.

APPROVAL OF MINUTES OF MARCH 25, 2020 MEETING

Motion: **Mr. Galecki moved to approve the minutes of the March 25, 2020 meeting. Ms. Niehaus seconded the motion. The motion passed unanimously.**

EXECUTIVE SECRETARY REPORT

Dr. Gaddis welcomed everyone to the meeting on the 50th anniversary of Earth Day.

National Level

- Dr. Gaddis reported to the Board that the 4th Congressional relief package came through Congress for \$480 billion dollars. There could be a substantial portion that could be dedicated to the Clean Water State Revolving Loan Fund but it is not yet clear. Dr. Gaddis will be working to confirm whether SRF funds are included in the package.
- The EPA issued an enforcement discretion guidance memo for regulatory relief associated with COVID-19 issues. All Divisions at the Department of Environmental Quality have taken those guidelines and drafted more specific guidance to align with the EPA memo. The Division has taken a more proactive stance and has asked facilities to self-report any issues.

State Level

- Dr. Gaddis reported to the Board that the Division is participating in collaborative research for a wastewater epidemiology study of COVID-19 with University of Utah, Brigham Young University and Utah State University and 10 wastewater facilities across the state.
- Rural Water and FEMA are working together to provide PPE supplies for wastewater operators.
- Dr. Gaddis reported that the Board will be presented with financing relief options for SRF loan

recipients.

- The goal is to have no defaults.
 - The Community Impact Board (CIB) approach will be presented.
 - Most communities have indicated that they can make their payments.
- The Harmful Algal Bloom (HAB) guidance has been finalized and posted on the Water Quality Website.

Division

- The Division has been teleworking with few issues.
- Dr. Gaddis reported that because the State does not have travel restrictions for staff, inspections are ongoing with social distancing guidelines in place.
- Staff have been recruited by the Department of Health to help with the COVID-19 contact tracing effort. Up to 1,000 state employees will be calling infected citizens. The Division initially volunteered one quarter of its staff.
- Dr. Gaddis introduced Duncan Nelson, Dusty Earley, and Andrew Pompeo as new employees of the Division.

Board

- Dr. Gaddis reported that there will be several upcoming Board items.
 - A Jordan River Temperature Use Attainability Analysis.
 - Kanab Creek in Southern Utah will have a site specific standard proposal for an alternative standard for TDS.
- Dr. Gaddis requested that 3 board members volunteer to choose a candidate for the Sudweeks award. Mr. Luers, Ms. Grant and Dr. VanDerslice volunteered and candidate information will be sent to them.

FUNDING REQUESTS

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

Financial Assistance for Loan Recipients: Per the request of the Board Mr. Mackey presented the active loans with upcoming loan repayments, as well as options that are available to the board to provide financial relief to cities that may be financially distressed as a result of the current state of emergency due to the COVID-19 pandemic.

Motion: **Ms. Niehaus moved to approve the staff recommendation of the Community Impact Board (CIB) State of Emergency Debt Relief Policy. The policy is that a community may request debt relief in the form of payment deferral or debt reorganization and it can be provided by staff, without additional Board action. There is no provision for debt forgiveness but loan repayments can be restructured in a number of ways including a mechanism to extend the loan term. Mr. Gordon seconded the motion. The motion passed unanimously.**

Provo City – Project Update: Mr. Hoffman presented the Provo City update on the Provo Membrane Bioreactor (MBR) Project for which the Board authorized a \$77.8 million loan, including \$2 million in principal forgiveness, with an interest rate of 0.5% and a term of 20 years.

OTHER BUSINESS

Wastewater Operator Certification Council Annual Report for 2019: Mr. Justensen presented the yearly report of the wastewater operator certification program activities.

Public Comments: No public comments.

Meeting Adjournment

Motion: **Mr. Luers moved to adjourn the meeting. Mr. Galecki 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 – May 27, 2020 at 8:30 am
195 North 1950 West
Room 1015
Salt Lake City, UT 84116

Jennifer Grant, Chair
Utah Water Quality Board



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MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD, Executive Secretary

FROM: Emily Cantón, Division Administrative Services Director

DATE: June 24, 2020

SUBJECT: 2020 Sudweeks Award

Each year, the Utah Water Quality Board presents the Sudweeks Award to recognize individuals for their contributions to Water Quality through their employment, volunteer work, or as a private citizen. Award recipients demonstrate leadership or achievements in the field of water pollution control and/or water quality improvement in the State of Utah. In addition, these individuals exhibit qualities of professionalism, personal integrity, and dedication to the goals and principles of improved water quality in the State of Utah.

This year, the Water Quality Board is pleased to present the Sudweeks Award to two individuals for achievements in the area of wastewater operations.

- **Lonn Rasmussen:** Lonn is the Operations Supervisor for Cottonwood Improvement District. He improves the knowledge and working environment of wastewater collection operators as he conducts semiannual “collections colleges.” The “collections colleges” include sample questions, math worksheets, and guided self-study to help operators prepare for wastewater certification exams or continuing education credit. He has volunteered with the Association of Boards of Certification’s (ABC) exam development and review committees. And, he is the first person in Utah to qualify for and receive ABC’s Professional Operator credential. Lonn volunteered on the Utah Wastewater Operator Certification Council from 2000 to 2005. He continues to help proctoring certification exams when called upon.
- **Sharon Burton:** Sharon has been an Operations Supervisor for Central Valley Water Reclamation Facility since 2008 and has held the responsibility for training all plant

operators. In addition to developing CVWRF's operational program and staff, Sharon has trained wastewater operators at other facilities across the state. She has been highly involved in leadership of the Water Environment Association of Utah (WEAU). Recently, she was promoted to Operations Manager for the Biological Nutrient Removal (BNR) Process. In this role, she is responsible for developing a highly trained Process Operations Group specifically dedicated to starting-up and controlling the operation of the new mainstream BNR process and the side-stream treatment processes for phosphorus and nitrogen removal. In both work and volunteer efforts, Sharon demonstrates enthusiasm, passion and dedication to the goals and principles of improving water quality in the State of Utah.

LOAN FUNDS FINANCIAL STATUS REPORT JUNE 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)	8,358,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000
Future State Match (estimated)	1,671,600	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
SRF - 2nd Round	62,527,484	96,300,227	60,720,905	15,447,140	13,530,999	26,965,896	54,498,835
Interest Earnings at 1.6627%	86,637	1,601,184	1,740,443	442,761	387,839	772,923	1,562,100
Loan Repayments	-	14,684,494	18,091,792	17,121,097	17,247,059	17,160,015	15,904,662
Total Funds Available	102,115,522	122,185,905	90,153,140	42,610,999	40,765,896	54,498,835	81,565,597
Project Obligations							
Duchesne City	(27,295)	-	-	-	-	-	-
Logan City		(13,131,000)	(7,000,000)	-	-	-	-
Moab City	(80,000)	-	-	-	-	-	-
Salem City	(269,000)	-	-	-	-	-	-
Loan Authorizations							
Central Valley Water Reclamation Facility	(5,000,000)	(28,324,000)	(24,976,000)	(6,700,000)	-	-	-
Millville City	-	(2,000,000)	-	-	-	-	-
Provo City	-	(15,000,000)	(35,000,000)	(15,000,000)	(13,800,000)	-	-
South Davis Sewer District (with NPS)	-	-	(7,000,000)	(7,146,000)	-	-	-
South Salt Lake City (A)	(439,000)	(1,580,000)	(2,160,000)	(234,000)	-	-	-
Planned Projects							
Fairview City	-	(1,430,000)	1,430,000	-	-	-	-
Total Obligations	(5,815,295)	(61,465,000)	(74,706,000)	(29,080,000)	(13,800,000)	-	-
SRF Unobligated Funds	\$ 96,300,227	\$ 60,720,905	\$ 15,447,140	\$ 13,530,999	\$ 26,965,896	\$ 54,498,835	\$ 81,565,597

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	20,387,732	11,525,707	7,725,799	3,849,705	935,293	(1,201,816)	1,660,518
Sales Tax Revenue	-	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500
Loan Repayments	-	3,357,992	3,031,806	2,582,488	2,565,791	2,565,235	2,418,354
Total Funds Available	20,387,732	18,471,199	14,345,105	10,019,693	7,088,584	4,950,918	7,666,372
General Obligations							
State Match Transfers	(6,471,600)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)	(1,600,000)
DWQ Administrative Expenses	(405,425)	(1,690,400)	(1,690,400)	(1,690,400)	(1,690,400)	(1,690,400)	(1,690,400)
Project Obligations							
South Salt Lake City (B)	(985,000)	(2,455,000)	(2,205,000)	(794,000)	-	-	-
Loan Authorizations							
Kane Co Water Conservancy Dist (Duck Creek)	(1,000,000)	-	-	-	-	-	-
Planned Projects							
Future Project Reserve	-	(5,000,000)	(5,000,000)	(5,000,000)	(5,000,000)	-	-
Total Obligations	(8,862,025)	(10,745,400)	(10,495,400)	(9,084,400)	(8,290,400)	(3,290,400)	(3,290,400)
UWLF Unobligated Funds	\$ 11,525,707	\$ 7,725,799	\$ 3,849,705	\$ 935,293	\$ (1,201,816)	\$ 1,660,518	\$ 4,375,972

Total Loan Fund Balance	107,825,934	68,446,703	19,296,845	14,466,291	25,764,080	56,159,353	85,941,569
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HARDSHIP GRANT FUNDS FINANCIAL STATUS REPORT JUNE 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		2,344,956	749,344	1,219,685	1,441,881	950,879	281,754
Federal HGF Beginning Balance	6,520,018	-	-	-	-	-	-
State HGF Beginning Balance	2,163,344	-	-	-	-	-	-
Interest Earnings at 1.6627%	12,032	38,990	21,478	34,960	41,329	27,255	8,076
UWLF Interest Earnings at 1.6627%	28,249	191,638	221,445	110,344	26,808	-	47,595
Hardship Grant Assessments	-	974,418	854,384	731,418	623,670	514,199	396,397
Interest Payments	-	403,983	373,034	345,473	317,191	289,421	261,668
Advance Repayments	-	536,000	-	-	-	-	-
Total Funds Available	8,723,643	4,489,985	2,219,685	2,441,881	2,450,879	1,781,754	995,491
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 - Design and Construction	(186,000)	(314,000)	-	-	-	-	-
Millville City - Design and Construction	(350,000)	(1,150,000)	-	-	-	-	-
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	(376,196)	-	-	-	-	-	-
(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	(55,440)	-	-	-	-	-	-
BYU - Bioassays to Investigate Nutrient Limitation	(41,798)	(26,282)	-	-	-	-	-
USU - Historic Trophic State/Nutrient Concentrations Pale	(143,889)	(77,609)	-	-	-	-	-
FY 2015 - Remaining Payments	(4,223)	-	-	-	-	-	-
FY 2016 - Remaining Payments	(2,386)	-	-	-	-	-	-
FY 2017 - Remaining Payments	(22,136)	-	-	-	-	-	-
FY 2018 - Remaining Payments	(139,036)	-	-	-	-	-	-
FY 2019 - Remaining Payments	(582,706)	-	-	-	-	-	-
FY 2020 - Remaining Payments	(780,876)	-	-	-	-	-	-
Future NPS Annual Allocations	-	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
Planned Projects							
Kane Co Water Conservancy Dist (Duck Creek) - Hardship Grant	-	(1,000,000)	-	-	(500,000)	(500,000)	(500,000)
Spanish Fork Credit Enhancement	-	-	-	-	-	-	-
Total Obligations	(6,378,686)	(3,740,641)	(1,000,000)	(1,000,000)	(1,500,000)	(1,500,000)	(1,500,000)
HGF Unobligated Funds	\$ 2,344,956	\$ 749,344	\$ 1,219,685	\$ 1,441,881	\$ 950,879	\$ 281,754	\$ (504,509)

DWQ-2020-012821

State of Utah
Wastewater Project Assistance Program
Project Priority List

As of June 12, 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	Spanish Fork Water Reclamation Facility		117	50	19	8	40
5	Millville City	x	114	45	46	3	20
6	Fairview City		107	50	15	2	40
7	Wellington City	x	74	10	21	3	40
8	Lewiston City	x	67	10	16	1	40
9	Kane County Water Conservancy District (Duck Creek)	x	62	40	21	1	0

DWQ-2020-013104



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Dr. Erica Brown Gaddis
Executive Secretary

MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Gaddis, Director

FROM: John Mackey, Engineering Section

DATE: June 24, 2020

SUBJECT: Project Assistance Applications Received in June 2020

At the April 10, 2019 Water Quality Board meeting, the Board decided to review State Revolving Fund (SRF) applications on a six month cycle. The board agreed that with this approach, we would set application deadlines in June and December. The Division received two applications in June 2020. A brief summary of these applications is provided below. We expect to introduce these projects to the Board in August then return to the Board for financial assistance authorizations in September. The Board may wish to hold a finance committee to review the projects in the interim, with assistance authorizations in October.

In addition to the two new projects, staff has reviewed and updated the PPL ranking for one existing project: Kane County Water Conservancy District – Duck Creek Sewerage System and Treatment Plant Upgrade. Construction bids for the project came in higher than had been estimated and the District is requesting additional support from the Board to complete the project. A feasibility report update is included in the Board packet with a staff recommendation for Board action.

New Projects

Spanish Fork City – Construction Assistance Credit Enhancement Agreement

Spanish Fork City is requesting a grant in the amount of \$3,500,000 to be issued over seven years in \$500,000 annual increments, to enhance the City's credit position in bonding to construct a new \$94.1 Million regional water reclamation facility. Spanish Fork provides regional service to Mapleton City, which has an equity stake of the existing facilities. The City has completed a draft capital facilities plan establishing the need and requirements for new, advanced treatment works

and interceptor sewer to overcome current capacity limitations, aging infrastructure challenges, and capable of meeting current regulations and in anticipation of requirements from the ongoing Utah Lake water quality studies.

The City has expressed interest in a low interest loan from the Board but, in recognizing fund limitations, has proposed a credit enhancement agreement, funded by grant. The proposed agreement would enable the City to maintain a debt service coverage ratio of 1.5 (the Board normally requires 1.25 on its loans) and secure other favorable financing. With an estimated \$17.5 Million in cash, the City expects to be able to bond for \$73.1 Million and save its rate payers \$16 Million in debt service costs with the Board's \$3.5 Million assistance. The City provides service to approximately 14,600 connections and has a 2018 MAGI of \$54,600, which is 125 percent of the statewide median. The proposed project is ranked 4 out of 9 on the project priority list.

Fairview City – Construction Assistance

Fairview City is requesting financial assistance in the amount \$2,860,000 to construct a new water reuse system. This project will enable the City to comply with the TBPEL regulation under the “commensurate phosphorus reduction...by innovative alternative approach” variance provision of R317-1-3.3.C, through a seasonal offset. The City has completed a draft capital facilities plan establishing the need and requirements for a new reuse pump station, reuse effluent conveyance and delivery systems, and storage tank. The project would qualify for green project reserve.

The City is also applying for financial assistance from USDA rural development. There are approximately 626 households in Fairview City and the local MAGI is \$44,800 or 93 percent of the statewide median. The cost of this project will result in a sewer bill that exceeds 1.4 percent of the City MAGI. The proposed project is ranked 6 out of 9 on the project priority list.



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Dr. Erica Brown Gaddis
Executive Secretary

Application Number: _____

Date Received: May 28, 2020

Date to be presented to the WQB: June 24, 2020

WATER QUALITY BOARD FEASIBILITY REPORT FOR WASTEWATER TREATMENT PROJECT INTRODUCTION

APPLICANT: Perry City
3005 South 1200 West
Perry City, Utah 84302

PRESIDING OFFICIAL: Kevin Jepps – Mayor

CONTACT PERSON: Shanna Johnson – Finance Director

TREASURER/RECORDER: Susan O Bray - Recorder

BOND COUNSEL: TBD

APPLICANT'S REQUEST:

Perry City is requesting restructuring of their \$11,350,000, 20 year, 3 percent interest loan from the Water Quality Board that was closed on December 16, 2008 for construction of a new regional wastewater treatment plant. The City requests a replacement loan in the amount of \$7,350,000 with a term of 15 years and an interest rate of 1.5 percent.

APPLICANT'S LOCATION:

Perry City is located in Box Elder County, 50 miles north of Salt Lake City and 5 miles south of Brigham City.

MAP OF APPLICANT'S LOCATION



BACKGROUND:

On December 16, 2008, Perry and Willard cities closed on \$28 million in combined funding provided by the Water Quality Board to construct various sewer improvements in Perry City, a city-wide sewer system in Willard City, and a regional wastewater treatment facility to be managed jointly by the two cities through an interlocal agreement. Construction was completed in June 2010. Prior to building the new treatment works, Perry City was served by a 0.45 MGD lagoon-based wastewater treatment system commissioned in 1973. User fees were \$11.50 per month.

For Perry's part of the project, they borrowed \$11,350,000 from the Water Quality Board. In structuring this loan, staff determined that, based on the 2005 median adjusted household income (MAGI) of \$52,901, the maximum affordable sewer user fee was \$62.71 per month per connection. From staff's cost model (Attachment 1), this equated to a 1 percent interest loan over 20 years and a 400+ percent rate increase.

At the time, Perry City was experiencing annual growth of about 10 percent. In an effort to help keep the City's sewer rate on par with Willard's, the Board and City agreed to a graduated repayment schedule that took into account growth (at roughly 5 percent, or half of the rate at the time) and its impact fee revenue. Staff's dynamic cost model (Attachment 2) allowed for a sewer user rate of \$38.00 per month with a 3 percent interest rate loan but needed the City to add approximately 80 new users per year with an Impact and Connection fee of \$3,800, to maintain a debt service coverage ratio of 125 percent.

The Board's loan to Perry was amortized with an average annual payment of \$762,898 (from Attachment 2) and with payments leveling out after year 2020 at about \$860,000.

PROJECT NEED:

In 2009, housing starts slowed due to recession and they have not recovered to the rate of 80 per year since. In the last 5 years, the average has been 33 per year. The City has 1,648 customers currently; the 2007 dynamic model estimated they would have 2,497 in 2020. Thus, expected sewer revenues are significantly below those anticipated. Although the City increased sewer rates to \$44.25 per month and impact fees to \$5,250 per connection, they needed to draw on general funds to make last May's payment.

Increased operating costs have also factored into the City's cash flow situation. The City shares operating costs in proportion to flow with Willard City, with Perry paying approximately two thirds of the cost. Perry's share of operating costs has increased from the 2007 estimate of \$122,670 to \$409,400 in 2020.

Perry's project reserves for the Board's loan are fully funded.

Perry is requesting the Board to restructure their current loan based on hardship that resulted from lower growth than anticipated and increased operating costs. The City would like to minimize the user rate increases that are needed to make debt service payments and keep up with increasing operations and maintenance costs.

POSITION ON PROJECT PRIORITY LIST:

This application is for refinancing an existing loan only and the project was not added to the project priority list. The project's original position on the list was 4 of 18.

POPULATION GROWTH:

As mentioned above, Perry City experienced 10 percent growth in 2008 when the original loan was closed. Current growth has been about 2 percent over the last 5 years based on building starts. The population grew 16.3 percent since the 2010 census.

APPLICANT'S CURRENT USER CHARGE:

The City currently charges \$44.25 per month per effective residential connection (ERC), which is 53 percent of the Board's 1.4 percent MAGI affordability threshold. The City's MAGI is \$71,100 or 148 percent of the statewide median (\$48,000). The City's current impact and connection fee is \$5,250 per new ERC.

COST ESTIMATE:

The principal balance on the City's loan from the Board is \$7,338,000 with 10 years remaining in the 3 percent interest loan's term. The average annual payment over the next 10 years is \$860,235.

The City is requesting a new replacement loan in the amount \$7,350,000 with a term of 15 years, extending the current loan's term by 5 years, and a 1.5 percent interest rate.

Staff prepared a static cost model incorporating the City's request and that does not depend on growth or impact fees to balance costs and coverage. This static model is provided in Attachment 3. Staff included a "debt coverage required" column in the cost model to ensure loan coverage requirements will be met. This was needed since the City has already fully funded Board loan reserve requirements, whose accumulation in the first years of a loan result in adequate coverage.

The static model shows that a replacement loan is affordable with the current loan interest rate of 3.0 percent and that, with the extended term, the City could reduce their annual payment to the Board from \$680,000 to \$615,000. With an interest rate of 1.5 percent, the City could reduce their annual payment to \$550,000.

In each loan (interest rate) scenario considered in the cost model, the City will need to raise user fees to meet loan coverage requirements. The coverage requirement may be satisfied with impact fee revenue, which can offset the need to increase these rates. The cost model shows loan scenarios with both coverage through user fees and coverage solely through impact fees. In general, the cost model shows that the additional cost of coverage is about \$5 to \$8 per month per connection without impact fees contributing to it. A summary of the user fees needed to service the proposed restructured loan for different rates and coverage requirements is given in the following table. In all cases, these user fees are below the maximum affordable rate of \$82.95 established by the 1.4 percent MAGI criterion.

Interest Rate	Annual Payment	Additional Coverage	User Fee (\$/mo/ERC)
0%	\$489,000	\$122,000	\$51.62
0%	\$489,000	100% Impact Fees	\$45.44
1.5%	\$550,000	\$137,000	\$55.46
1.5%	\$550,000	100% Impact Fees	\$48.51
2.0%	\$571,000	\$143,000	\$56.80
2.0%	\$571,000	100% Impact Fees	\$49.58
3.0%	\$615,000	\$154,000	\$59.55
3.0%	\$615,000	100% Impact Fees	\$51.78

STAFF COMMENTS:

Staff is supportive of restructuring the Perry City loan from 2008. Since 2009, market interest rates have been low; the last loan the Board authorized at 2 percent or higher was in May of 2013 (Ephraim City, 2.0%, 20 years). The City has struggled to keep user fees competitive in their market in the face of increasing operating costs and lower than anticipated growth and revenue.

Perry City's current user fee is \$44.25 per month per ERC. With the current loan repayment structure and operations and maintenance costs, that rate should be \$63.68 per month per ERC to maintain coverage at 125 percent. Accounting for 100 percent of impact fees (about \$115,000 per year) being applied to coverage, the monthly rate should be \$57.87 per ERC. Absent the coverage requirement, the user fee should be \$49.27 per month to simply break even.

Comparing the interest or hardship grant assessment earned by the Board under a refinanced deal, in simple terms, the Board would earn \$1,264,000 over ten years from the existing loan. Under a replacement 15 year loan, the Board would earn \$913,000 with an interest rate of 1.5 percent, \$1,230,000 with an interest rate of 2.0 percent, and \$1,885,000 with an interest rate of 3.0 percent.

The City has requested the new loan to have a term of 15 years, extending the overall term by 5 years. Staff generally applies a 20 years term to treatment plant loans based on the designed life of the asset. In extending the loan term 5 years, some important assets may exceed their

expected life before the loan is retired. To mitigate the possibility of the City serving debt on “expired” infrastructure, staff believes the City would benefit from an asset management plan that promotes planning for and regularly implementing capital improvements in a programmatic way.

STAFF RECOMMENDATIONS:

Staff recommends that the Board authorize a replacement loan to Perry City in the amount \$7,350,000 with a term of 15 years, and an interest rate of 2.0 percent, subject to the following special conditions.

SPECIAL CONDITIONS:

1. Perry City must agree to continue to participate annually in the Municipal Wastewater Planning Program (MWPP).
2. Perry City must agree to maintain a minimum debt-to-service ratio of 125 percent for the replacement loan for the life of the loan.
3. Perry City must develop, fund and implement an asset management program consistent with the minimum requirements of EPA’s Fiscal Sustainability Program for all of the sewerage system and treatment works assets under their management.

Attachment 1 – Perry City 2007 Static Cost Model

Project Costs		Current Customer Base & User Charges	
Engineering - Planning	0	Residential Customers (ERU):	1,207
Engineering - Design	543,335	Comm/Indust Customers (ERU):	70
Engineering - CMS	912,337	Total Customers (ERU):	1,277
Engineering - Other	433,628	MAGI for Perry (2005)	\$52,901
DWQ Administrative Fees	35,408	Current Impact & Connection Fee:	\$1,775
Legal/Bonding	227,000	Current Monthly User Fee (per ERU):	\$11.50
Inflation	318,335		
Land Cost	66,667		
Crop loss	55,000		
Construction	9,008,290		
Contingency (30%)	2,702,487		
Total Project Cost:	11,600,000		
Project Funding		Funding Conditions	
Applicant Contribution (cash)	250,000	Loan Repayment Term:	20 years
Applicant Contribution (land)		Reserve Funding Period:	6 years
WQB loan	11,350,000		
Annual Sewer O&M Cost			
Total O&M expenses Treatment & Collection	122,670		

ESTIMATED COST OF SEWER SERVICE								
WQB Loan Amount	WQB Loan Interest Rate	WQB Loan Debt Service	WQB Loan Reserve	Annual Sewer O&M Cost	Existing Sewer Debt Service	Total Annual Sewer Cost	Monthly Sewer Cost/ERU	Sewer Cost as % of MAGI
11,350,000	0.00%	567,500	141,875	122,670	0	832,045	57.45	1.30%
11,350,000	1.00%	628,964	157,241	122,670	0	908,875	62.75	1.42%
11,350,000	1.50%	661,089	165,272	122,670	0	949,031	65.52	1.49%
11,350,000	2.00%	694,129	173,532	122,670	0	990,331	68.37	1.55%
11,350,000	2.50%	728,070	182,017	122,670	0	1,032,757	71.30	1.62%
11,350,000	3.00%	762,898	190,725	122,670	0	1,076,293	74.31	1.69%
11,350,000	3.50%	798,598	199,650	122,670	0	1,120,918	77.39	1.76%
11,350,000	4.00%	835,153	208,788	122,670	0	1,166,611	80.54	1.83%
11,350,000	4.50%	872,544	218,136	122,670	0	1,213,350	83.77	1.90%
11,350,000	5.00%	910,753	227,688	122,670	0	1,261,112	87.07	1.98%

Attachment 2 - Perry City 2007 Dynamic Cost Model

WQB Loan Terms	
Funded Project Cost:	\$11,645,000
Local Contribution	\$295,000
WQB Grant Amount:	\$-00
WQB Loan Amount:	\$11,350,000
Loan Term:	20
Interest Rate:	3.0%
Average Annual Payment:	\$762,898

Proposed Loan Amount:	\$11,350,000
Initial Sewer Operating Expense:	0.0%
Annual O&M:	\$122,670

Sewer Revenue Sources	
Beginning Cash:	\$-00
2007 Customers (ERU):	1,277
Proj. City Growth Rate :	Varies
Current Connection & Sewer Impact Fee	\$1,775
Proposed Sewer Impact & connection Fee:	\$3,800
Current Monthly User Charge	11.50
Proposed Monthly User Charge:	\$38.00

Sewer Revenue Projections

Year		Growth Rate (%)	Annual Growth (ERU)	Total Users (ERU)	User Charge Revenue	Impact Fee Revenue	Total Revenue	Proposed Loan Repayment	Existing Loan Reserves	Debt Service	O&M Expenses	Total Expenses	Beginning Cash	Ending Cash Flow	Net Revenue	Debt Service Ratio
2007		10.0%	128	1,405		486,400	486,400		-00			-00	-00	486,400	486,400	na
2008		10.0%	141	1,546		535,800	535,800			0	122,670	122,670	486,400	899,530	413,130	na
2009		5.0%	77	1,623		292,600	292,600		-00	0	122,670	122,670	899,530	1,069,460	169,930	na
2010	1	5.0%	81	1,704	777,036	307,800	1,084,836	762,898	190,725	0	122,670	1,076,293	1,069,460	1,078,003	962,166	1.26
2011	2	5.0%	85	1,789	815,796	323,000	1,138,796	762,898	190,725	0	122,670	1,076,293	1,078,003	1,140,505	1,016,126	1.33
2012	3	5.0%	89	1,878	856,380	338,200	1,194,580	762,898	190,725	0	122,670	1,076,293	1,140,505	1,258,792	1,071,910	1.41
2013	4	5.0%	94	1,972	899,244	357,200	1,256,444	762,898	190,725	0	122,670	1,076,293	1,258,792	1,438,943	1,133,774	1.49
2014	5	3.8%	75	2,047	933,444	285,000	1,218,444	762,898	190,725	0	122,670	1,076,293	1,438,943	1,581,093	1,095,774	1.44
2015	6	3.8%	78	2,125	969,012	296,400	1,265,412	762,898	190,725	0	122,670	1,076,293	1,581,093	1,770,212	1,142,742	1.50
2016	7	3.8%	81	2,206	1,005,948	307,800	1,313,748	762,898	-00	0	122,670	885,568	1,770,212	2,198,391	1,191,078	1.56
2017	8	3.8%	84	2,290	1,044,252	319,200	1,363,452	762,898	-00	0	122,670	885,568	2,198,391	2,676,274	1,240,782	1.63

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2018	9	3.8%	87	2,377	1,083,924	330,600	1,414,524	762,898	-00	0	122,670	885,568	2,676,274	3,205,230	1,291,854	1.69
2019	10	2.5%	59	2,436	1,110,828	224,200	1,335,028	762,898	-00	0	122,670	885,568	3,205,230	3,654,689	1,212,358	1.59
2020	11	2.5%	61	2,497	1,138,644	231,800	1,370,444	762,898	-00	0	122,670	885,568	3,654,689	4,139,564	1,247,774	1.64
2021	12	2.5%	62	2,559	1,166,916	235,600	1,402,516	762,898	-00	0	122,670	885,568	4,139,564	4,656,511	1,279,846	1.68
2022	13	2.5%	64	2,623	1,196,100	243,200	1,439,300	762,898	-00	0	122,670	885,568	4,656,511	5,210,242	1,316,630	1.73
		Growth	Annual	Total	User	Impact		Proposed		Existing						Debt
		Rate	Growth	Users	Charge	Fee	Total	Loan	Loan	Debt	O&M	Total	Beginning	Ending	Net	Service
Year		(%)	(ERU)	(ERU)	Revenue	Revenue	Revenue	Repayment	Reserves	Service	Expenses	Expenses	Cash	Cash Flow	Revenue	Ratio
2023	14	2.5%	66	2,689	1,226,196	250,800	1,476,996	762,898	-00	0	122,670	885,568	5,210,242	5,801,670	1,354,326	1.78
2024	15	2.0%	54	2,743	1,250,820	205,200	1,456,020	762,898	-00	0	122,670	885,568	5,801,670	6,372,121	1,333,350	1.75
2025	16	2.0%	55	2,798	1,275,900	209,000	1,484,900	762,898	-00	0	122,670	885,568	6,372,121	6,971,452	1,362,230	1.79
2026	17	2.0%	56	2,854	1,301,436	212,800	1,514,236	762,898	-00	0	122,670	885,568	6,971,452	7,600,119	1,391,566	1.82
2027	18	1.5%	43	2,897	1,321,044	163,400	1,484,444	762,898	-00	0	122,670	885,568	7,600,119	8,198,995	1,361,774	1.79
2029	19	1.5%	43	2,940	1,340,652	163,400	1,504,052	762,898	-00	0	122,670	885,568	8,198,995	8,817,478	1,381,382	1.81
2030	20	<u>1.5%</u>	44	2,984	1,360,716	167,200	1,527,916	<u>762,898</u>	-00	0	122,670	885,568	8,817,478	9,459,825	<u>1,405,246</u>	1.84

Attachment 3 - Perry City 2020 Restructured Debt Static Model

PERRY CITY
STM AERATOR TREATMENT SYSTEM WITH WILLARD CITY
with 5 years
extended term

Project Costs	
Engineering - Planning	0
Engineering - Design	543,335
Engineering - CMS	912,337
Engineering - Other	433,628
DWQ Administrative Fees	35,408
Legal/Bonding	227,000
Inflation	318,335
Land	
Cost	66,667
Crop loss	55,000
Construction	9,008,290
Contingency (30%)	2,702,487
Total Project Cost:	11,600,000

Project Funding	
Applicant Contribution (cash)	250,000
Paid to WQB loan	4,012,000
Balance in WQB Loan	7,338,000
Refi Closing Cost Est	12,000
Refi Loan Amount	7,350,000

Current Customer Base & User Charges	
Residential Customers (ERU):	1,548
Comm/Indust Customers (ERU):	100
Total Customers (ERU):	1,648
MAGI for Perry (2019)	\$71,100
Current Impact& Connection Fee (per ERU):	\$5,250
Current Monthly User Fee (per ERU):	\$44.25
Affordable Monthly User Fee (per ERU)	\$82.95

Funding Conditions	
Loan Repayment Term:	15 years
Reserve Funding Period:	0 years

Annual Sewer O&M Cost	
Existing Debt	0
Total O&M Costs	409,404

ESTIMATED COST OF SEWER SERVICE

WQB Loan	WQB Loan Interest	WQB Loan Debt	Debt Coverage	Total Loan	Annual Sewer O&M	Total Annual	Monthly Sewer	Sewer Cost as % of MAGI
Amount	Rate	Service	Requirement	& Coverage	Cost	Sewer Cost	Cost/ERU	
7,350,000	0.00%	489,200	122,300	611,500	409,404	1,020,904	51.62	0.87%
7,350,000	0.00%	489,200	0	489,200	409,404	898,604	45.44	0.77%
7,350,000	1.00%	529,244	132,311	661,555	409,404	1,070,959	54.15	0.91%
7,350,000	1.00%	529,244	0	529,244	409,404	938,648	47.46	0.80%
7,350,000	1.50%	549,942	137,485	687,427	409,404	1,096,831	55.46	0.94%
7,350,000	1.50%	549,942	0	549,942	409,404	959,346	48.51	0.82%
7,350,000	2.00%	571,083	142,771	713,854	409,404	1,123,258	56.80	0.96%
7,350,000	2.00%	571,083	0	571,083	409,404	980,487	49.58	0.84%
7,350,000	2.50%	592,664	148,166	740,830	409,404	1,150,234	58.16	0.98%

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7,350,000	2.50%	592,664	0	592,664	409,404	1,002,068	50.67	0.86%
7,350,000	3.00%	614,679	153,670	768,349	409,404	1,177,753	59.55	1.01%
7,350,000	3.00%	614,679	0	614,679	409,404	1,024,083	51.78	0.87%
7,350,000	3.50%	637,122	159,281	796,403	409,404	1,205,807	60.97	1.03%
7,350,000	3.50%	637,122	0	637,122	409,404	1,046,526	52.92	0.89%



State of Utah

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Governor

SPENCER J. COX
Lieutenant Governor

Department of Environmental Quality

L. Scott Baird
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
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Dr. James VanDerslice
Dr. Erica Brown Gaddis
Executive Secretary

TO: Water Quality Board

THROUGH: Erica Brown Gaddis, PhD

FROM: Skyler C. Davies, P.E.

DATE: June 24, 2020

SUBJECT: Kane County Water Conservancy District Duck Creek Sewer Project
Reauthorization Request Memo

On August 22, 2018 the Water Quality Board authorized a loan of \$1 Million at 0% interest and a hardship grant of \$2,997,000 to the Kane County Water Conservancy District (the District) for design and construction of a new wastewater system. The total estimated project cost at that time was \$4.414 million, which included a culinary water project estimated at \$417,000 that would be constructed with alternative financing. The culinary water project is now funded and will be managed as a separate project. The proposed sewer project will build the backbone of sewer works needed by the District, enabling future phases to connect more of the community to the sewerage system.

Due to cost increases the District **is requesting that the hardship grant be increased to \$3,997,000, and that the loan remain at \$1 Million.** The project also includes abandonment of septic tanks and laterals on private property which are not eligible for SRF funding. This will require the District to seek separate funding for this part of the project which is identified in the cost model as being paid for with a "Market Loan" and a parcel connection fee, which is being charged to each connection.

The original \$4.414 million estimated cost was based on a planning level estimate which included construction costs of about \$3 Million and a 15% contingency of about \$0.45 Million. KCWCD conducted a bid opening, the second week of April 2020, for the project for which they received several bids from general contractors; the low bid came in at \$4,034,001.06. With the higher than estimated construction bid, the overall project costs are now estimated to be \$5,446,000. The project costs include \$460,000 for converting existing residents from septic systems to sewer connections, costs that will be funded separately by the district. A comparison of project costs is provided Table 1:

TABLE 1-PROJECT COSTS COMPARISON			
Item	Description	8/2018 Budget	6/2020 Budget
1	Legal/Bonding	\$30,000	\$34,500
2	DWQ Loan Origination Fee	\$40,000	\$20,000
3	Engineering (Design & CMS)	\$688,000	\$732,500
4	Construction	\$2,585,000	\$4,034,001
5	Culinary Water System Improvements (Funding and Project Separated from DWQ project)	\$417,000	Separate Project
6	Garkane Connection	In Construction	\$110,700
7	Contingency	\$451,000	\$367,013
8	Property Procurement	\$203,000	\$158,720
Total Project Costs		\$4,414,000	\$5,457,434

As the Board is aware, construction costs began increasing in Utah in 2017, due to a new statewide growth period. The construction labor market has continued to drive costs higher since 2018, primarily driven by a continued shortage of skilled labor. Materials cost have also increased and the proposed construction is more complex than was anticipated at the planning level.

The April 2018 authorization for the project was a \$1 million loan at 0% for 30 years and \$2,997,000 grant. The District has the same concerns regarding affordability as they did at the time of the authorization. The staff comments from the August 2018 memo are largely the same today, as was stated in that feasibility report.

A cost model is included as Appendix 1. The model indicates that the applicant will exceed 1.4% of MAGI with operation and maintenance costs alone. However, this phase of the project primarily serves businesses, which makes it difficult to rely on the normal affordability criteria alone. As such the recommendation is based on the District's indication that the commercial rate payers are "willing-to-pay" a maximum loan of \$1,000,000, based on a 0% 30 year term. A \$1,000,000 loan commits the District to significant repayments that are well above normal affordability standards. Staff believes this level of commitment encourages the District to continue the phased approach of connecting additional customers as it becomes feasible, to provide broader water quality protection and to help support loan repayments.

This project addresses ongoing water quality and human health concerns. There have been failed septic systems in the village area that will receive service, and the proposed sewerage system will provide a long term solution for the areas of shallow ground water and will support broader sewer service availability in the future.

Table 2 below shows the comparison between the authorized funding sources, and the proposed funding sources.

TABLE 2-PROJECT FUNDING COMPARISON			
Item	Description	8/2018 Budget	6/2020 Budget
1	KCWCD Financing (for culinary water project, since separated into standalone project)	\$417,000	NA
1	KCWCD Financing (for Septic Tank Abandonment and Connection on Private Property)	Not Identified in 2018 Budget	\$377,934
2	WQB Funding Grant	\$2,997,000	\$3,997,000
3	WQB Funding Loan	\$1,000,000	\$1,000,000
4	Private Parcel Connection		\$82,500
5	Total Project Costs	\$4,414,000	\$5,457,434

It should be noted that due to the separate financing of the septic tank abandonment and the laterals on private property that the District will be required to increase rates above those anticipated in the previous authorization, even without an increase in the loan amount from the Water Quality Board.

The original Feasibility Report is included as Attachment 2.

Taking into account the high cost of sewer service per connection, staff recommends the Board reauthorize funding to Kane County Water Conservation District of \$1,000,000 loan for 30 years at 0 percent and a hardship grant of \$3,997,000 with the same special conditions as the original authorization.

Attachment 2 –August 2018 Authorization KCWCD Feasibility Memo

WATER QUALITY BOARD STATIC COST MODEL											
KCWCD-Duck Creek Sewer System Project											
Project Costs							Current Customer Base & User Charges			Number	ERC
Legal/Bonding				34,500				Residential Connections		5	5
*DWQ Loan Origination Fee				20,000				Comercial Connections		31	104
Engineering (Design & CMS)				732,500				Forest Service Connection		1	39
Construction				4,034,001				Total Connections		37	148
Contingency (~11%)				367,013							
Property Obtainment				158,720				MAGI (Duck Creek 2018 household):			30,800
Garkane Connection				110,700				1.4% MAGI Sewer Bill:			\$35.93
Total Project Cost:											
* Loan origination fee could be reduced to 10,000 if Board authorizes as requestd.											
					Existing O&M expenses Treatment & Collection					\$0	
					New O&M expenses Treatment & Collectiocr					\$ 40,978.00	
								Net New O&M Expenses			\$ 40,978.00
Project Funding											
KCWCD Financing (Septic Tank Abandonment/Lateral on P.P.)				\$377,934				Funding Conditions			
KCWCD Local Share (Parcel Connection Fees)				\$82,500				Loan Repayment Term:			30
WQB Funding				4,997,000				Reserve Funding Period:			6
Total Project Cost:					\$5,457,434						
ESTIMATED COST OF SEWER SERVICE											
WQB Grant	WQB Loan	WQB Loan	WQB Loan	WQB Loan	Market Loan	Market Loan	Market Loan	Annual Sewer	Total Annual	Monthly Sewer	Sewer Cost as a
Amount	Amount	Interest Rate	Debt Service	Reserve	Amount	Interest Rate	Debt Servie	O&M Cost	Sewer Cost	Cost/ERU	% of MAGI
\$ 2,997,000	\$ 1,000,000	0.00%	\$33,333	\$ 8,333	\$ 622,066	4.00%	\$ 35,974	\$ 40,978	\$ 118,619	66.79	2.60%
\$ 3,997,000	\$ 1,000,000	0.00%	\$33,333	\$ 8,333	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 104,501	58.84	2.29%
\$ 3,750,000	\$ 1,247,000	0.00%	\$41,567	\$ 10,392	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 114,792	64.64	2.52%
\$ 3,700,000	\$ 1,297,000	0.00%	\$43,233	\$ 10,808	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 116,876	65.81	2.56%
\$ 3,500,000	\$ 1,497,000	0.00%	\$49,900	\$ 12,475	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 125,209	70.50	2.75%
\$ 3,300,000	\$ 1,697,000	0.00%	\$56,567	\$ 14,142	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 133,542	75.19	2.93%
\$ 3,200,000	\$ 1,797,000	0.00%	\$59,900	\$ 14,975	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 137,709	77.54	3.02%
\$ 2,997,000	\$ 2,000,000	0.00%	\$66,667	\$ 16,667	\$ 377,934	4.00%	\$ 21,856	\$ 40,978	\$ 146,167	82.30	3.21%

Attachment 2 –August 2018 Authorization KCWCD Feasibility Memo

Date Received: May 17, 2018
Date to be presented to the WQB: August 22, 2018

WATER QUALITY BOARD FEASIBILITY REPORT FOR WASTEWATER COLLECTION & TREATMENT PROJECT

AUTHORIZATION

APPLICANT:	Kane County Water Conservancy District 725 E. Kaneplex Drive Kanab, Utah 84741 Telephone: 435-644-3997
PRESIDING OFFICIAL:	Mike Noel, Executive Director
CONTACT PERSON:	Amanda Buhler, Office Manager
TREASURER:	Mike Kenner, Board Member
CONSULTING ENGINEER:	Joe Phillips, P.E. Sunrise Engineering 11 North 300 West Washington, Utah 84780 Telephone: 435-652-8450
BOND COUNSEL:	Richard Chamberlain Chamberlain Associates 225 North 100 East Richfield, Utah 84701 Telephone: 435-896-4461

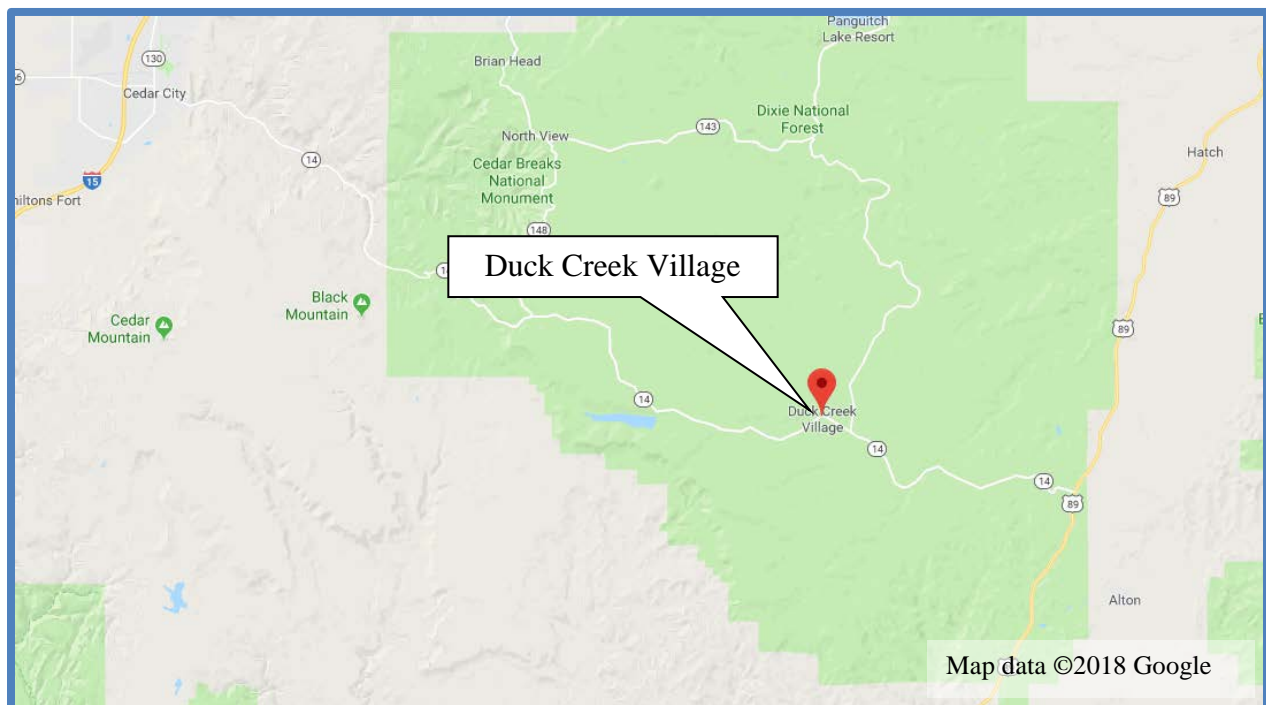
APPLICANT'S REQUEST

Kane County Water Conservancy District (the District) requests **financial assistance in the amount of \$3,997,000** including a **\$759,500 Design Advance**; this also includes the previously authorized **\$203,000 in property acquisition costs advance** that was approved in the June 27, 2018 Water Quality Board meeting. This funding will be used for the construction of the collection system, the purchase of the Forest Service lagoons and property, and upgrades to the treatment facility that are necessary to connect and provide effective sewer service to the town.

The applicant has stated that the most they can afford to repay is a \$1,000,000 loan, based on 30 year 0% interest terms.

APPLICANT'S LOCATION

Duck Creek is an unincorporated community in Kane County located on the edge of Cedar Mountain, approximately 30 miles east of Cedar City.



[Figure 1]

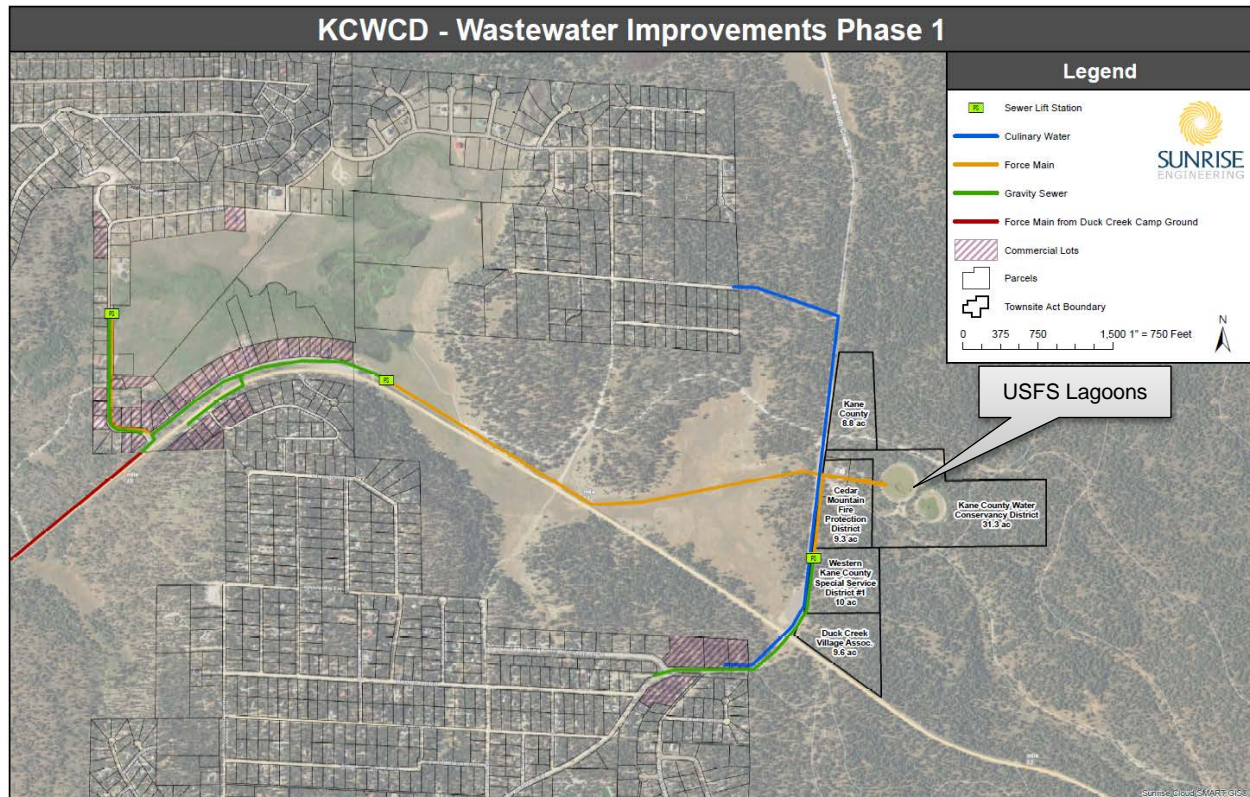
BACKGROUND

In 2007, the District commissioned a Wastewater Planning Study that documented significant risk to ground and surface waters from failing onsite systems in the Duck Creek area. Of particular concern is the “valley area” near Duck Creek Village [Figure 2] where high ground water levels frequently cause the onsite systems in the area to become inundated with water. This high groundwater limits the ability of the soils to provide adequate absorption and treatment. Surfacing septage has occurred on numerous occasions, creating a risk to public health and water quality. The recommended alternative in the 2007 study was to purchase the nearby wastewater lagoon facility that services the Duck Creek campground and extend service to the Duck Creek area. The lagoon system is located within the Dixie National Forest and is owned and operated by the USFS.

On May 1, 2013 the Water Quality Board authorized a planning grant of \$173,000 to assist the District in funding a Townsite Act application. The Townsite Act process is one of only two mechanisms to purchase property from the United States Department of Agriculture Forest Service (USFS); the other mechanism is Congressional Action.

On June 27, 2018 the project was introduced to the Water Quality Board and the Board

authorized an advance of \$203,000 to purchase land that contains the USDA Forest Service lagoons. Since that meeting, more accurate information on the number of ERU's being served has been obtained and is included in the cost model provided in Appendix 1.



[Figure 2]

ALTERNATIVES

The District thoroughly explored alternatives to address the onsite wastewater system problem in the Duck Creek area. They investigated constructing various mechanical treatment plants but the issue of effluent disposal in this area is unusually complicated. The District evaluated several alternative treatment and collection systems including:

Collection System Alternatives

- Alternative 1 - Gravity Collection with Lift Stations
- Alternative 2 - Pressurized Effluent Sewer System
- Alternative 3 - Pressurized Grinder Pump Sewer System

Treatment System Alternatives

- Alternative A - Total Containment Lagoon Treatment
- Alternative B - SBR Treatment with Rapid Infiltration Basin (RIB) Disposal
- Alternative C - SBR Treatment with Injection Well Disposal

The above alternatives were analyzed in the Facility Plan and the preferred alternative - Collection System Alternative 1 and Treatment System Alternative B – was identified. Due to high costs, a phased implementation approach was developed. The first phase consists of purchasing the existing lagoon facility and constructing a sewer collection and transmission system that will connect most of the businesses in Duck Creek. Several residences are reasonably close to the proposed alignment and could be connected in the near future. Additionally, the lagoons will be improved to bring them into compliance with DWQ standards. This phase will establish a collection system backbone to which other customers can be connected as it becomes feasible. As connections are added and the lagoons treatment capacity is reached, Phase 2 of the project would be implemented wherein the lagoons would be replaced with SBR treatment system and RIB disposal.

PROJECT DESCRIPTION

The Duck Creek Wastewater Project, Phase 1, represents the project phase that will most directly address the identified surface and groundwater contamination concerns in the Duck Creek area of Cedar Mountain, Kane County, Utah.

The Phase 1 project accomplishes multiple critical steps in establishing an overall wastewater solution in the Duck Creek area, including:

- I. The project is in the process of transferring the existing Duck Creek Campground wastewater lagoon site from the USFS into the ownership of Kane County Water Conservancy District. The site will serve as the treatment facility for the Phase 1 project and as the treatment site for future phases that could ultimately serve the Duck Creek, Strawberry Creek, Swains Creek, and Zion View Estates areas, all now on septic systems.
- II. The project will establish a new public wastewater utility service in the area that will be sponsored and administered by the Kane County Water Conservancy District. Operational and maintenance capacity will be initiated and developed through operation of the Phase 1 project.
- III. The project will establish a “backbone” infrastructure system and a “rate base” that will develop operational and financial capacity upon which future expansion can be built as need and feasibility occur.
- IV. The project will establish key alignment rights-of-way in the form of Special Use Permits issued by the USFS for the Phase 1 project and future expansions expected to become necessary in the Duck Creek valley.
- V. The Phase 1 project eliminates septic tank use by the commercial entities in Duck Creek Village; these on-site treatment units are considered to be the greatest threat to surface and groundwater quality in the Duck Creek area.
- VI. The project converts the USFS from a wastewater system operator to a wastewater system customer.
- VII. The Phase 1 project capitalizes on the current support of the commercial property owners to participate in the development of a wastewater treatment solution at Duck Creek.
- VIII. The Phase 1 project capitalizes on the current intent of the USFS to dispose the lagoon site through the Townsite Act process and to issue Special Use Permits for the necessary

infrastructure improvements.

- IX. The project establishes a wastewater treatment solution for future governmental services at Duck Creek, including the Townsite parcels reserved for Kane County, Cedar Mountain Fire Protection District, Western Kane County SSD #1, and the Duck Creek Village Association, and potentially the future Duck Creek Town.

The Phase 1 project includes as primary infrastructure components approximately 7,500 linear feet of 8-inch and 10-inch gravity sewer main, 7,000 linear feet of 6-inch and 8-inch force main, two secondary and one primary lift stations, basic lagoon site improvements, 40 gravity and pressurized sewer connections, power and SCADA improvements necessary to operate the wastewater system, and other miscellaneous appurtenances typical of a wastewater system installation in an alpine environment. Professional and incidental costs include those related to planning and environmental updates, mapping and survey efforts, design, bidding, construction administration, financing the project, and establishing the wastewater utility administratively. Also included in the project is the effort to finalize the Townsite Act process which transfers and subdivides the Townsite parcel disposed by the Forest Service.

IMPLEMENTATION SCHEDULE:

Introduction to WQB for Funding:	June 27, 2018
To WQB for Funding Authorization:	August 22, 2018
Begin Construction	2019
Complete Construction:	2021

POSITION ON PROJECT PRIORITY LIST:

The project is currently ranked 7th of 7 projects.

COST ESTIMATE:

Engineering (Design & CMS)	\$	688,000
Construction	\$	3,002,000
Contingency (~ 15%)	\$	451,000
Property Purchase	\$	203,000
Legal & Bonding	\$	30,000
Loan Origination (1% of Loan)	\$	40,000
Total	\$	4,414,000

COST SHARING:

<u>Funding Request</u>	<u>Cost Sharing</u>
Local Contribution (Culinary Water Portion of Project)	\$417,000
WQB Loan (0% 30 Years)	\$1,000,000
WQB (Requested as Grant)	\$2,997,000
Total	\$4,414,000

STAFF COMMENTS

A cost model is included as Appendix 1. The model indicates that the applicant will exceed 1.4% of MAGI with operation and maintenance costs alone. However, this phase of the project primarily serves businesses, which makes it difficult to rely on the normal affordability criteria alone. As such the recommendation is based on the District's indication that proposed commercial rate payers are "willing-to-pay" a maximum loan of \$1,000,000, based on a 0% 30 year term. A \$1,000,000 loan commits the District to significant repayments that are well above normal affordability standards. Staff believes this level of commitment should motivate the District to continue the phased approach of connecting additional customers as it becomes feasible, to provide broader water quality protection and to help support loan repayments.

Staff recognizes that there are water quality and human health concerns that this project would address. There have been failed septic systems in the area, and a sewer will provide a long term solution.

The O&M budget in the cost model indicates the anticipated O&M costs to operate the wastewater system. The budget is based on a similarly sized entity. To minimize the operation budget for this system, the District plans to utilize existing resources and staff to economize. The District estimated this will reduce the operation and maintenance costs for the wastewater system by about \$36,800 per year. This reduction in cost is indicated in the cost model as Shared Utility Labor & Overhead Savings as a negative \$36,783 per year.

STAFF RECOMMENDATION

Staff recommends that the Water Quality Board Authorize Kane County Water Conservancy District's requests **for a loan in the amount of \$1,000,000 at an interest rate of 0% repayable over 30 years and a grant in the amount of \$2,997,000 including a \$759,500 Design Advance, and the previously authorized \$203,000 in property acquisition costs advance** subject to these special conditions:

1. The District must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
2. As part of the facility planning, the District must complete a Water Conservation and Management Plan.
3. The District must pursue and retain additional funding necessary to fully implement the project.
4. The District must provide a Plan of Operation consistent with R317-101-3 Q.
5. As part of its Plan of Operations, the District must develop and implement an asset management program that is consistent with EPA's Fiscal Sustainability Plan guidance.
6. The District must consult the Division of Water Quality prior to disposing any of the land purchased with Water Quality Board funding.

eDocs: DWQ-2018-008072

File: SRF- KCWCD Duck Creek, Administration, Section 1

KCWCD Duck Creek
Introduction
June 27, 2018
Appendix 1

WATER QUALITY BOARD STATIC COST MODEL								
Duck Creek Sewer System Project								
Project Costs			Current Customer Base & User Charges					
Legal/Bonding	30,000		Residential ERUs	5				
DWQ Loan Origination Fee	40,000		Comercial ERUs	104				
Engineering (Design & CMS)	688,000		Haul-In Disposal ERUs	3				
Construction	3,002,000		Forest Service ERUs	39				
Contingency (~15%)	451,000		Total ERUs	151				
Property Obtainment	203,000							
Total Project Cost:	4,414,000		MAGI (Duck Creek 2016 household):	25,344				
			1.4% MAGI Sewer Bill:	\$29.57				
Project Funding								
Applicant Contribution	417,000		Existing O&M expenses Treatment & Collection	\$0				
WQB Funding	3,997,000		New O&M expenses Treatment & Collectiocn	\$ 76,495.00				
Total Project Cost:	4,414,000		Shared Utility Labor & Overhead Savings	\$ (36,783.00)				
			Net New O&M Expenses	\$ 39,712.00				
Funding Conditions								
Loan Repayment Term:	30							
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	Total Annual Sewer Cost	Monthly Sewer Cost/ERU	Sewer Cost as a % of MAGI
\$ 3,997,000	\$ -	0.00%	\$0	\$ -	\$ 39,712	\$ 39,712	21.92	1.04%
\$ 3,500,000	\$ 397,000	0.00%	\$13,233	\$ 3,308	\$ 39,712	\$ 56,254	31.05	1.47%
\$ 2,997,000	\$ 1,000,000	0.00%	\$33,333	\$ 8,333	\$ 39,712	\$ 81,379	44.91	2.13%
\$ 2,737,945	\$ 1,259,055	0.00%	\$41,969	\$ 10,492	\$ 39,712	\$ 92,173	50.87	2.41%
\$ 1,998,500	\$ 1,998,500	0.00%	\$66,617	\$ 16,654	\$ 39,712	\$ 122,983	67.87	3.21%
\$ 1,998,500	\$ 1,998,500	0.00%	\$66,617	\$ 16,654	\$ 39,712	\$ 122,983	67.87	3.21%
\$ 1,868,000	\$ 2,129,000	0.00%	\$70,967	\$ 17,742	\$ 39,712	\$ 128,420	70.87	3.36%
\$ 1,530,851	\$ 2,466,149	0.00%	\$82,205	\$ 20,551	\$ 39,712	\$ 142,468	78.62	3.72%
\$ -	\$ 3,997,000	0.00%	\$133,233	\$ 33,308	\$ 39,712	\$ 206,254	113.83	5.39%



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Dr. Erica Brown Gaddis
Executive Secretary

MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Brown Gaddis, PhD, Director

FROM: Ken Hoffman, PE

DATE: June 24, 2020

SUBJECT: Repayment of 2001 Millville Grant for Wastewater Line to Logan

In the process of underwriting for the Millville funding package, an issue has come up for which the Utah Water Quality Board (Board) input is required. On June 15, 2001, Millville received funding for their \$977,578 portion of Nibley City's new wastewater collection system, lift station, and force main to connect to Logan City Wastewater Collection and Treatment Facility. The funding of this \$977,578 project was in 2 pieces: \$391,000 of loan and \$553,600 of grant. This funding package was approved with the following special conditions:

1. The City must pay at least \$2.00 per month per household for each household in the City and apply that payment to the loan until it has been paid in full or redeemed by long term financing when the City constructs a centralized sewer system.
2. The City must complete a Water Conservation and Management Plan.
3. The grant and loan will be repaid when Millville City receives financing for a centralized sewer system.

These special conditions were incorporated into Millville financial statements as:

\$391,000 Water and Sewer Revenue Bonds, Series 2001, issued July 19, 2001. Due in 38 annual payments of at least \$9,600. Interest accrues at 0% per annum. Final balloon payment, if any, due February 1, 2041.

\$553,600 grant, issued July 19, 2001. Grant repayment is contingent upon when the City receives financing for a centralized sewer system. Management has determined it is probable that the City will receive financing for a centralized sewer system at some point in the future.

The grant has been paid out from the Hardship Grant Fund with no notes in DWQ's funds for projected repayment. The funding package approved by the Board on March 25, 2020 did not factor in repayment of this grant. Based on this information, clarification is requested from the Board on repayment of this \$553,600 grant. The Board could require Millville to repay the grant to the Hardship Grant Fund or the Board could forgive the grant without repayment. The Static Cost Model projected Millville's monthly sewer bill at \$104.88 or 2.12% of MAGI. If the Board were to require Millville to repay the grant with payments based on 0% interest rate over 30 years then the monthly sewer bill increases to \$107.74 or 2.18% of MAGI. To summarize, Millville will already have a hardship-level monthly sewer bill, the grant money has already paid out, and repayment has not been anticipated by DWQ's financial managers.

Staff Recommendation

Staff recommends the Board forgive the repayment of the \$553,600 grant issued on July 19, 2001 with the following special condition.

1. If Millville benefits monetarily from their ownership or the sale of their capacity in the Nibley Wastewater Line, this monetary benefit shall be paid into the restricted sewer enterprise fund for the benefit of Millville's wastewater infrastructure and its upkeep.



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Executive Secretary

MEMORANDUM

TO: Water Quality Board

THROUGH: Erica Brown Gaddis, PhD
Director

FROM: Jennifer Robinson
Environmental Scientist III, UPDES Surface Water Section

DATE: June 24, 2020

SUBJECT: Request to Initiate Rulemaking for Utah Administrative Code
Rule 317-1-3.2

The purpose of this memorandum is to request authorization from the Utah Water Quality Board (Board) to initiate rulemaking to revise Utah Administrative Code (UAC) Rule 317-1-3.2. The current rule is inconsistent with the Code of Federal Regulations (CFR) by requiring publicly owned treatment works (POTW) and all others to meet secondary standards. The proposal is to amend UAC R317-1-3.2 to be consistent with 40 CFR 125.3 by removing “all persons” and replacing it with “publically owned treatment works”.

The change will continue to require all permittees to protect waters of the State based on UAC R317 and categorical standards found in 40 CFR 405 through 471 and implemented in Utah Pollutant Discharge Elimination System (UPDES) Permits.

Cost and Benefits

The cost of the rule change will not change the budget for the Division of Water Quality and will not have an impact on permittees. The rule will reduce staff time for coding of the UPDES Permits for those permittees impacted by the rule change. There will be some small benefit to industrial permittees that will no longer be required to meet the secondary standards.

Staff Recommendation

Staff recommends that the Board authorize initiation of rulemaking to rescind and replace UAC R317-1-3.2 to be consistent with 40 CFR 125.3. Attachment 1 has a redline-strikeout version of the proposed change for review by the Board.

DWQ-2020-012024

ATTACHMENT 1
Redline/Strikeout of Proposed Change to R317-1-3.2
Utah Water Quality Board Meeting

R317. Environmental Quality, Water Quality.
R317-1 Definitions and General Requirements.
R317-1-3 Requirements for Waste Discharges.
R317-1-3.2 Compliance With Secondary Treatment Requirements.

~~All persons~~ Publicly owned treatment works discharging wastes from point sources into any of the waters of the State shall provide treatment processes which will produce secondary effluent meeting or exceeding the following effluent quality standards.



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Dr. Erica Brown Gaddis
Executive Secretary

MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Gaddis, PhD, Director

FROM: Chris Bittner, Standards Coordinator

DATE: June 24, 2020

SUBJECT: Staff requests approval from the Board to initiate rulemaking: Proposed Amendments to Standards of Water Quality for the State, [UAC R317-2](#).

Background

By statute, the Board has the authority to amend Utah's water quality standards through the rulemaking process. Staff is requesting Board approval to initiate the rulemaking process for a standards change to the Jordan River. Staff anticipates returning to the Board in August with additional proposed revisions. Upon your approval staff will file the proposed amendments with the Division of Administrative Rules, notify the public and government officials, conduct a hearing, incorporate comments from the public and other interested parties, and finally, return to the Board for adoption.

The proposed revision for the Jordan River was reviewed with affected stakeholders and the Water Quality Standards Workgroup. No substantive concerns were identified. The proposed revision is summarized below and a detailed explanation is provided as Attachment 1.

Summary of Proposed Standards Revisions

1. **Jordan River.** For a segment of the Jordan River, the revision is to change the designated aquatic life use from Class 3A, cold water aquatic life, to Class 3B, warm water aquatic life. The following summary is based on the detailed data and findings presented in the *Cold Water Aquatic Life Use Attainability Analysis for the Jordan River from confluence with Little Cottonwood Creek to Narrows Diversion, Utah and Salt Lake Counties, Utah* provided as Attachment 1. The affected segment is the "Jordan River from confluence with Little Cottonwood Creek to the Narrows Diversion". The proposed change is in R317-2-13.5.a. as shown in the shaded row in Table 2:

Table 1. Jordan River Segment Proposed for Change from Cold Water Aquatic Life Use (3A) to Warm Water Aquatic Life (3B)

Segment	Designated Uses				
Jordan River, from North Temple Street in Salt Lake City to confluence with Little Cottonwood Creek		2B		3B	4
Jordan River from confluence with Little Cottonwood Creek to Narrows Diversion		2B	3A	<u>3B</u>	4
Jordan River, from Narrows Diversion to Utah Lake	1C	2B		3B	4

Designated uses are the desired goals for the water and when this segment was originally designated, the goal was to support a Class 3A, cold water fishery, specifically trout. The Utah Division of Wildlife Resources used to stock thousands of trout in the Jordan River. However, follow-up fish surveys demonstrate that these fish were never able to propagate.

Over forty years of data from the summer months demonstrate that the water temperatures commonly exceeded the maximum temperature criterion necessary to support cold water aquatic life. Accordingly, the cold water segment is currently impaired for not meeting the temperatures needed for cold water use. Natural conditions are the primary reason that the cold water use cannot be supported. Staff concluded that this segment was originally misclassified and would be appropriately classified with the same designated 3B use class (warm water aquatic life), as the upstream and downstream segments of the Jordan River.

Two permitted discharges, the South Valley Water Reclamation Facility and the Jordan Basin Water Reclamation Facility, are affected by this change. Recently, these facilities have had difficulties in controlling effluent temperatures in the summer to meet cold water aquatic life requirements. The proposed change will address this issue. Absent this change, these facilities would be required to meet cold water temperature requirements. Staff has concluded that additional expenditure to treat these effluents to meet cold water aquatic life requirements is unjustified because the Jordan River cannot support cold water aquatic life due to natural conditions.

Supporting Documents

Attachment 1: [DWQ-2020-007517](#) *Cold Water Aquatic Life Use Attainability Analysis for the Jordan River from confluence with Little Cottonwood Creek to Narrows Diversion, Utah and Salt Lake Counties, Utah*

Appendix 1: [DWQ-2020-007519](#) *Temperature Modeling*

Appendix 3: [DWQ-2020-007521](#) *Data*



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MEMORANDUM

TO: Utah Water Quality Board

THROUGH: Erica Gaddis, PhD, Director

FROM: Chris Bittner, Standards Coordinator

DATE: June 24, 2020

SUBJECT: Informational Item: Introduction to the 2020 Triennial Review

In accordance with [R317-2-1C](#) and Section 303(c) of the Clean Water Act, Utah is required to review the Standards of Quality for Waters of the State, [R317-2](#), at least once every three years. The last Triennial Review was in 2017 and staff are initiating the 2020 Triennial Review.

Staff will solicit comments from the public, regulated community, and EPA regarding what standards revisions or additions Utah should consider. Staff will document and prepare responses for all comments received. After reviewing with the Water Quality Standards Workgroup, staff will present the findings to the Board in the fall. The potential revisions are prioritized considering the following factors: environmental benefit, administrative benefit, technical complexity, available resources, federal mandates, and perceived need for change in standards, guidance, rule, or process. Staff resources are then allocated to the standards revisions identified as the highest priorities. Ultimately, any revisions to the standards must be adopted by the Water Quality Board and approved by EPA using the rulemaking process.

DWQ-2020-012744



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Department of
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L. Scott Baird
Executive Director

Kim Shelley
Deputy Director

NEWS RELEASE
Thursday, June 11, 2020

CONTACT
Jared Mendenhall
Public Information Officer
Cell: 801-707-0817
jmendenhall@utah.gov

Utah Scientists Using Sewage to Track Coronavirus

Results from a sewage sampling pilot program holds promise of providing early detection

SALT LAKE CITY – Monitoring for coronavirus in Utah’s sewage systems may offer health officials a tool for early detection of rising infections, monitoring overall community infection trends, and confirmation of low infection rates.

In April, a pilot program was launched to determine whether monitoring sewage could provide a useful tool for public health officials. Scientists at the Utah Department of Environmental Quality’s (DEQ) Division of Water Quality (DWQ), the University of Utah, Utah State University, and Brigham Young University measured the genetic material of the SARS-CoV-2 virus — the virus that causes COVID-19 — in sewage entering ten treatment plants across Utah. These plants represent approximately 40% of Utah’s population. Results from this pilot program are available today at wastewatervirus.utah.gov.

“The initial results show that we can not only detect the virus in sewage but we can see trends that are broadly consistent with known infection rates in Utah’s communities,” said Erica Gaddis, director of the Utah Division of Water Quality. “Monitoring virus in Utah’s sewage systems offers a tool for early detection of rising infections, monitoring community infection trends, and confirmation of low infection rates. We hope that monitoring the sewage can help in prioritizing limited state resources such as mobile testing.”

The virus is shed in feces by infected individuals, including those that are asymptomatic. Virus concentrations in the sewage can be measured by collecting a sample at the inlet of sewage treatment plants. The pilot program sampled sewage entering ten treatment plants in Utah. These plants were selected for the pilot study to capture data from different types and sizes of communities across Utah. Samples were collected from mid-April through May 2020.

Virus concentrations were coupled with wastewater flow and service area populations to estimate viral concentrations in units of SARS-CoV-2 copies per 100,000 people in the sampled area per day. This metric provides an indicator of changes in community infection rates in each treatment plant’s service area.

Key Findings

- Virus was not detected in the effluent — the water discharged to natural bodies of water — leaving the sewage treatment plants.
- Virus was found in the influent — the water entering a sewage plant — of all ten sewage treatment plants that participated in the study and in 64% of 171 samples collected.
- In late May, large increases of virus were measured in the influent to the Logan and Hyrum sewage treatment plants. This trend mirrors the increase in active case counts reported for Cache Valley.
- Highest concentrations of virus were found in urban areas.
- Tourist communities showed higher concentrations per capita of virus than other areas of similar density and size.
- Monitoring for the SARS-CoV-2 virus in Utah's sewage systems offers a tool for: early detection of rising infections, monitoring overall community infection trends, and confirmation of low infection rates.

Sample collection was conducted voluntarily by plant operators at the following participating facilities: Central Valley Water Reclamation Facility, Hyrum City Wastewater Treatment Plant, Logan City Wastewater Treatment Plant, Moab Wastewater Treatment Plant, Orem Water Reclamation Facility, Price River Water Improvement District, Salt Lake City Water Reclamation Facility, Snyderville Basin Wastewater Reclamation District, Timpanogos Special Service District, and Tremonton Wastewater Treatment Plant.

With the completion of the pilot project, the State of Utah is committed to expanding and operationalizing this tool in the ongoing response to the COVID-19 pandemic. To see the results of the pilot program and its key findings visit wastewatervirus.utah.gov.

About DEQ

Established in 1991, the Utah Department of Environmental Quality's (DEQ) mission is to safeguard and improve Utah's air, land and water through balanced regulation. DEQ implements state and federal environmental laws and works with individuals, community groups and businesses to protect the quality of Utah's air, land and water. For more information, visit www.deq.utah.gov, follow DEQ on Facebook ([utahdeq](https://www.facebook.com/utahdeq)) and Twitter ([UtahDEQ](https://twitter.com/UtahDEQ)).