State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

Utah Water Quality Board Meeting
DEQ Board Room 1015
195 North 1950 West
Salt Lake City, UT 84116
December 3, 2018

Work Meeting Begins @ 8:30am

AGENDA

A. Water Quality Board Meeting – Roll Call

B. Minutes:
Approval of minutes for October 24, 2018 Water Quality Board Meeting ..... ……Myron Bateman

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

D. Funding Requests:
1. **Financial Report**……..……..……... Emily Cantón
2. **Plain City Request for Financial Assistance - Project Introduction**..... Ken Hoffman
3. **Wellington City Request for Emergency Construction Assistance Authorization**..... .....John Mackey
4. **South Salt Lake City Request for Construction Assistance Authorization**..... .....Skyler Davies
5. **Central Valley WRF Request for Construction Assistance Authorization** ....Skyler Davies
6. **Provo City WRF Request for Construction Assistance Authorization** ..... Ken Hoffman

E. Public Comment Period

F. Meeting Adjournment

Next Meeting January 23, 2019
DEQ Board Room 1015
195 North 1950 West
Salt Lake City, UT 84116

Revised 11/20/2018
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.

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MINUTES

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

UTAH WATER QUALITY BOARD
195 North 1950 West
Salt Lake City, UT 84116
October 24, 2018

UTAH WATER QUALITY BOARD MEMBERS PRESENT

Myron Bateman	Clyde Bunker
Steven Early	Gregg Galecki
Jennifer Grant	Mike Luers
Jim VanDerslice	Scott Baird

Excused: David Ogden

DIVISION OF WATER QUALITY STAFF MEMBERS PRESENT

Erica Gaddis	Skyler Davies	John Mackey	Kim Shelley
Jim Harris	Ken Hoffman	Marsha Case	Beth Wondimu
Mike Allred	Emily Cantón	Jerry Rogers	Brenda Johnson

OTHERS PRESENT

Name	Organization Representing
Ben Musselman	San Juan County
Kelly Pehrson	San Juan County
Jimmy McKnight	Provo City
Dave Decker	Provo City
David Torgersen	Provo City
Mark Ogren	Provo City
Gary Calder	Provo City
Rebecca Andrus	Provo City
Wayne Parker	Provo City
Thomas Holstrom	Central Valley Water Reclamation
Justin Zollinger	Central Valley Water Reclamation

Name *(continued)*	**Organization Representing**
Phil Heck	Central Valley Water Reclamation
Corey Christiansen	Water Works Engineers
Brian Baker	Zions Bank
Daniel Hawley	Jones & DeMille Engineers
Marian Rice	Salt Lake City

Mr. Bateman 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 THE SEPTEMBER 26, 2018 MEETING

Motion: **Mr. Bunker moved to approve the minutes of the September 26, 2018 meeting. Mr. Early seconded the motion. The motion passed unanimously.**

EXECUTIVE SECRETARY REPORT

- Dr. Gaddis informed the Board that DWQ is waiting for guidance from the EPA on the PFAS (Per- and Polyfluoroalkll Substances) issue.
- Water Quality is hosting the EPA Region 8 Water Quality Standards Meeting.
- Dr. Gaddis asked follow-up questions to the Board members from the Work Meeting discussion regarding loan fund balances.
    - Is the Board interested in compliance history and status of applicants and should this information become a condition of the loan?
    - Should storm water fees be included in total water fees when calculating hardship?
- The DEQ Amendments Bill will now be known as the Rulemaking Fiscal Accountability Amendments.
- The Gold King Mine Fund currently has $7,000,000 to be distributed between four states and four tribes.
- The 2018 Harmful Algal Bloom season continues with Water Quality wrapping up the program at the end of October.
    - Panguitch Lake remains closed.
    - Lincoln Beach at Utah Lake remains closed.
    - Scofield Reservoir and Utah Lake remain under warning advisories.
- Dr. Gaddis gave an update on the variances that have been issued to facilities under for the Technology Based Phosphorus Effluent Limit rule.
- Dr. Gaddis informed the Board about the mid-year WEAU Conference being held on November 13, 2018.

FUNDING REQUESTS

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

San Juan Spanish Valley: Ms. Wondimu introduced the San Juan Spanish Valley SSD construction assistance request for supplemental funding for a new wastewater collection system.

Motion: **Mr. Luers moved to approve additional funding in the amount of $450,000 as principal forgiveness. Ms. Grant seconded the motion. The motion passed unanimously.**

Provo City: Mr. Hoffman introduced the Provo City construction loan in the amount of $121,262,000 for the construction of a new wastewater reclamation plant. The project will be presented in a future Board meeting to request authorization.

OTHER BUSINESS

Lower Bear River TMDL Revision Introduction: Mr. Allred gave an introduction for the Lower Bear River TMDL revision.

Public Comments: None

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

Next Meeting – December 3, 2018

_____
Myron Bateman, Chair
Utah Water Quality Board

LOAN FUNDS
FINANCIAL STATUS REPORT
DECEMBER 2018

STATE REVOLVING FUND (SRF)	State Fiscal Year 2019	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025
Funds Available							
2015 - 2018 Capitalization Grants	21,210,000	-	-	-	-	-	-
2015 - 2018 State Match	4,198,401	-	-	-	-	-	-
Future Capitalization Grants (estimated)	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000	7,000,000
Future State Match (estimated)	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000
SRF - 2nd Round	118,698,367	97,750,896	70,571,146	25,738,517	(19,203,098)	(68,686,252)	(58,336,550)
Interest Earnings at 2.5%	2,055,777	2,539,471	1,833,368	668,661	-	-	-
Loan Repayments	8,952,352	13,626,780	14,183,003	17,338,724	16,365,846	16,460,702	16,404,613
Total Funds Available	163,514,896	122,317,146	94,987,517	52,145,902	5,562,748	(43,825,550)	(33,531,937)
Project Obligations							
Duchesne City	(265,000)	-	-	-	-	-	-
Logan City	(23,131,000)	(23,000,000)	(23,000,000)	-	-	-	-
Moab City	(780,000)	-	-	-	-	-	-
Salem City	(4,269,000)	(7,000,000)	-	-	-	-	-
Loan Authorizations							
Logan City	(10,000,000)	(10,000,000)	-	-	-	-	-
San Juan Spanish Valley SSD	(968,000)	(1,997,000)	-	-	-	-	-
South Davis Sewer District (with NPS)	(26,351,000)	(2,500,000)	-	-	-	-	-
Planned Projects							
* Central Valley Water Reclamation Facility	-	(5,000,000)	(19,000,000)	(24,100,000)	(27,000,000)	(6,000,000)	-
*Provo City	-	-	(25,000,000)	(45,000,000)	(45,000,000)	(6,262,000)	-
*South Salt Lake City	-	(2,249,000)	(2,249,000)	(2,249,000)	(2,249,000)	(2,249,000)	-
Total Obligations	(65,764,000)	(51,746,000)	(69,249,000)	(71,349,000)	(74,249,000)	(14,511,000)	-
SRF Unobligated Funds	$ 97,750,896	$ 70,571,146	$ 25,738,517	$ (19,203,098)	$ (68,686,252)	$ (58,336,550)	$ (33,531,937)

UTAH WASTEWATER LOAN FUND (UWLF)	State Fiscal Year 2019	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025
Funds Available							
UWLF	$ 20,009,939	$ 7,689,497	$ 10,833,286	$ 14,079,705	$ 17,022,149	$ 19,997,225	$ 22,952,604
Sales Tax Revenue	797,493	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500	3,587,500
Loan Repayments	2,076,141	2,549,188	2,651,819	2,347,844	2,380,476	2,360,779	2,357,223
Total Funds Available	22,883,573	13,826,186	17,072,605	20,015,049	22,990,125	25,945,504	28,897,327
General Obligations							
State Match Transfers	(5,598,401)	(1,400,000)	(1,400,000)	(1,400,000)	(1,400,000)	(1,400,000)	(1,400,000)
DWQ Administrative Expenses	(1,194,675)	(1,592,900)	(1,592,900)	(1,592,900)	(1,592,900)	(1,592,900)	(1,592,900)
Project Obligations							
None at this time	-	-	-	-	-	-	-
Loan Authorizations							
Grantsville City	(4,880,000)	-	-	-	-	-	-
Kane Co Water Conservancy Dist (Duck Creek)	(1,000,000)	-	-	-	-	-	-
Planned Projects							
*Plain City	(2,521,000)	-	-	-	-	-	-
Total Obligations	(15,194,076)	(2,992,900)	(2,992,900)	(2,992,900)	(2,992,900)	(2,992,900)	(2,992,900)
UWLF Unobligated Funds	$ 7,689,497	$ 10,833,286	$ 14,079,705	$ 17,022,149	$ 19,997,225	$ 22,952,604	$ 25,904,427

Contingency Calculation for Authorized Projects							
Total Unobligated Loan Funds	$ 105,440,394	$ 81,404,432	$ 39,818,222	$ (2,180,949)	$ (48,689,027)	$ (35,383,946)	$ (7,627,511)
25% Contingency for Authorized Projects	$ (8,299,750)	$ (1,124,250)	$ -	$ -	$ -	$ -	$ -
Remaining Balance	$ 97,140,644	$ 80,280,182	$ 39,818,222	$ (2,180,949)	$ (48,689,027)	$ (35,383,946)	$ (7,627,511)

*WQB Agenda Items

HARDSHIP GRANT FUNDS
FINANCIAL STATUS REPORT
DECEMBER 2018

HARDSHIP GRANT FUNDS (HGF)	State Fiscal Year 2019	State Fiscal Year 2020	State Fiscal Year 2021	State Fiscal Year 2022	State Fiscal Year 2023	State Fiscal Year 2024	State Fiscal Year 2025
Funds Available							
Beginning Balance		$ 2,914,443	$ 3,343,975	$ 3,993,053	$ 4,594,421	$ 5,139,799	$ 5,643,141
Federal HGF Beginning Balance	6,797,226	-	-	-	-	-	-
State HGF Beginning Balance	1,672,648	-	-	-	-	-	-
Interest Earnings at 2.5%	146,693	75,714	86,873	103,736	119,358	133,527	146,603
UWLF Interest Earnings at 2.5%	346,559	199,765	281,438	365,777	442,218	519,508	596,286
Hardship Grant Assessments	869,710	1,101,353	974,418	854,384	731,418	623,670	514,199
Interest Payments	221,459	352,700	306,349	277,471	252,383	226,636	201,446
Advance Repayments	220,000	-	-	-	-	-	-
Total Funds Available	10,274,295	4,643,975	4,993,053	5,594,421	6,139,799	6,643,141	7,101,674
Financial Assistance Project Obligations							
Duchesne City - Construction Grant	(13,503)	-	-	-	-	-	-
Eagle Mountain City - Construction Grant	(510,000)	-	-	-	-	-	-
Emigration Sewer Imp Dist - Planning Grant	(26,158)	-	-	-	-	-	-
Kane Co Water Conservancy Dist (Duck Creek) - Hardship Grant	(2,997,000)						
USU Extension - Hardship Grant	(42,000)	-	-	-	-	-	-
Non-Point Source/Hardship Grant Obligations							
(FY11) Gunnison Irrigation Company	(48,587)	-	-	-	-	-	-
(FY11) DEQ - Willard Spur Study	(113,326)	-	-	-	-	-	-
(FY12) Utah Department of Agriculture	(504,551)	-	-	-	-	-	-
(FY13) DEQ - Great Salt Lake Advisory Council	(187,673)	-	-	-	-	-	-
(FY15) DEQ - Ammonia Criteria Study	(41,130)	-	-	-	-	-	-
(FY15) DEQ - Nitrogen Transformation Study	(14,500)	-	-	-	-	-	-
(FY16) DEQ - San Juan River Monitoring	(125,083)	-	-	-	-	-	-
(FY17) DEQ - GW Quality Study	(5,051)	-	-	-	-	-	-
(FY17) DEQ - Utah Lake Water Quality Study	(602,880)	(300,000)	-	-	-	-	-
FY 2015 - Remaining Payments	(40,790)	-	-	-	-	-	-
FY 2016 - Remaining Payments	(240,594)	-	-	-	-	-	-
FY 2017 - Remaining Payments	(223,034)	-	-	-	-	-	-
FY 2018 - Remaining Payments	(684,037)	-	-	-	-	-	-
FY 2019 - Remaining Payments	(843,955)						
Future NPS Annual Allocations	-	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
Planned Projects							
*Wellington City	(96,000)	-	-	-	-	-	-
Total Obligations	(7,359,852)	(1,300,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)
HGF Unobligated Funds	$ 2,914,443	$ 3,343,975	$ 3,993,053	$ 4,594,421	$ 5,139,799	$ 5,643,141	$ 6,101,674

*WQB Agenda Items

State of Utah
Wastewater Project Assistance Program
Project Priority List

As of November 20, 2018

Rank	Project Name	Funding Authorized	Total Points	Point Categories			
				Project Need	Potential Improvement	Population Affected	Special Consideration
1	Logan City	x	148	50	28	10	60
2	Provo City		144	50	24	10	60
3	Central Valley Water Reclamation Facility		143	50	23	10	60
4	South Davis Sewer District	x	138	50	18	10	60
5	Salem City	x	108	50	12	6	40
6	Wellington City		37	35	0	2	0
7	Plain City		105	50	10	5	40
8	Grantsville City	x	94	35	12	7	40
8	San Juan Spanish Valley SSD	x	86	45	0	1	40
10	Kane County Water Conservancy District (Duck C	x	62	40	21	1	0

Application Number: _____
Date Received: October 30, 2018
Date to be presented to the WQB: December 3, 2018

WATER QUALITY BOARD
FEASIBILITY REPORT FOR PLANNING ADVANCE
INTRODUCTION

APPLICANT:	Plain City 4160 West 2200 North Plain City, UT 84404 Telephone: (801) 731-4908
PRESIDING OFFICIAL:	Mayor Jon Beesley
TREASURER/RECORDER:	Steve Davis/Diane Hirschi
CONSULTING ENGINEER:	Gary Vance, P.E. J-U-B Engineers Telephone: (801) 547-0393
BOND COUNSEL:	Smith Hartvigsen 257 East 200 South, Suite 500 Salt Lake City, UT 84111 (801) 413-1620

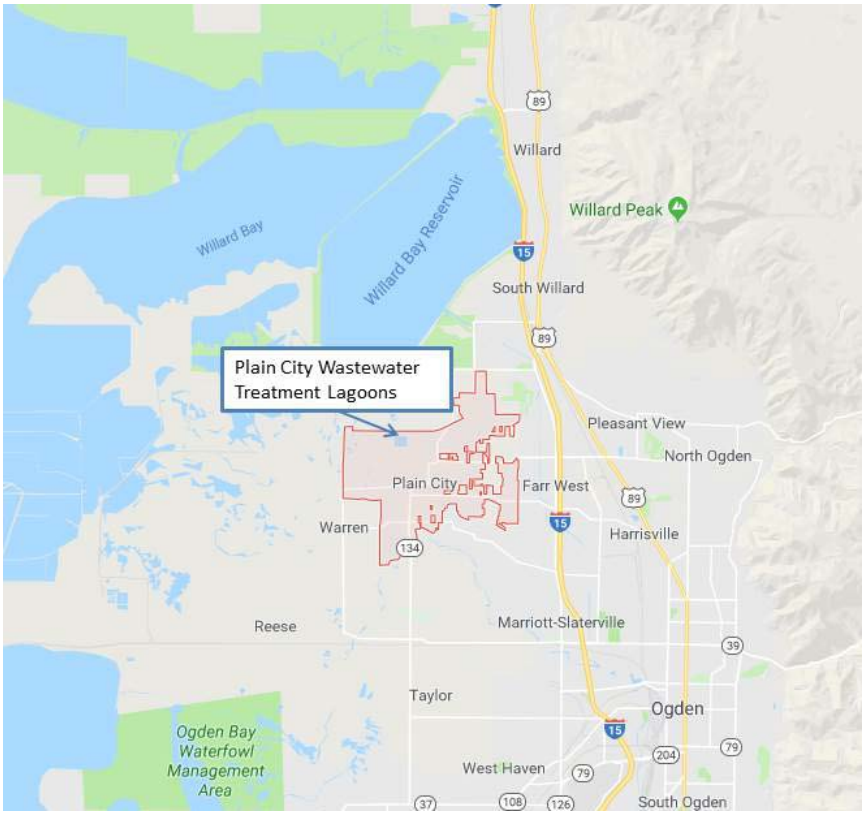
APPLICANT'S REQUEST:

Plain City is requesting a construction assistance loan from the Utah Water Quality Board in the amount of $2,521,000 for construction of a new lift station, headworks building and land application infrastructure.

APPLICANT'S LOCATION:

Plain City is located in Weber County northwest of Ogden City.

MAP OF APPLICANT'S LOCATION



BACKGROUND AND PROJECT NEED:

Plain City owns and operates a collection system with sixteen (16) lift stations and a six cell discharging aerated lagoon (a pair of three cell tracks) which was constructed in 1970. The lagoons have a design flow of an average daily flow of 0.61 mgd that discharges into a drainage ditch that flows from Dix Creek to the Harold S. Crane Waterfowl Management Area and ultimately to the Willard Spur area of the Great Salt Lake.

Plain City currently provides service to 2,036 ERUs with a wastewater treatment lagoon and 90 ERUs are treated by Central Weber Sewer Improvement District (CWSID). Plain City recently completed a capital facilities planning process to assess their long term needs for wastewater infrastructure. The Capital Facility Plan explores alternatives that address the City's growth and the water quality compliance requirements.

PROJECT NEED:

During 2017, Plain City's lagoons had an effluent average daily flow of 0.4 mgd from 2,036 ERUs. Plain City projects that by year 2037, effluent average daily flows will be 0.85 mgd from 4,050 ERUs. This would be greater than the design capacity of the treatment works and the

current permitted average daily flow. Plain City needs to find a treatment technology or compliance method to address their future capacity needs.

PROJECT DESCRIPTION:

The Capital Facility Plan recommends upgrading several systems to improve treatment plant performance, compliance and monitoring. These improvements include:

1. Replace the existing influent lift station
2. Influent flow metering improvements
3. New headworks building with mechanical fine screens

The facilities plan also recommends development of a wastewater land application system that will provide both beneficial use of the treated effluent and reduce phosphorus loading to the receiving waters.

The existing influent lift station is 50 years old and does not have adequate pumping capacity nor an emergency backup generator. Influent flow metering improvements are needed to ensure accurate flow measurements for compliance and performance monitoring as well as for design of future upgrades. New headworks facilities with mechanical fine screens will reduce solids accumulation in the lagoons thereby improving aerator performance and reducing sludge removal requirements. Land application infrastructure will ensure compliance with the phosphorus load cap for a minimum of 20 years; the adjacent land owner is willing to sign a long-term lease and has up to 500 acres of land available. In addition, the adjacent land owner holds Water Right 35-10384 (Attached) from the source: “Plain City Wastewater Treatment Plant Discharge” at 2.5 cfs (1.61 mgd). While this cannot guaranty certainty from a claim by senior water right, it does appear to demonstrate the right to take the effluent.

ALTERNATIVES EVALUATED:

Alternative	Description	Estimated Cost (in millions)	20 year Life Cycle Cost (in millions)
1	Do Nothing	Not Feasible	NA
2	Upgrade Lagoons and Dispose Effluent Using Land Application	$2.7	$6.2
3	Full Regionalization with CWSID	$17.1	$26.7
4	Partial Regionalization with CWSID	$1.6	$6.4
5	Hybrid Lagoons Treatment System with Mechanical Components	$9.9	$15.8
6	Conventional Activated Sludge with Nutrient Removal	$15.4	$22.5
7	Sequencing Batch Reactor	$12.3	$18.9

After reviewing and considering all of the feasible alternatives, the City has elected to proceed with Alternative 2. This alternative upgrades the existing lagoons and addresses the phosphorus

load cap by land applying the effluent during the growing season.

These improvements will help the lagoons maintain compliance with their current UPDES permit while at the same time setting the city up for a future mechanical wastewater treatment facility. This approach allows the City to improve the performance of the lagoons during the time it takes to increase user rates, save money, and plan for the more expensive future improvements.

POSITION ON PROJECT PRIORITY LIST:

This project is ranked 8th out of 10 projects on the Wastewater Treatment Project Priority List.

POPULATION GROWTH:

There are an estimated 2,126 ERUs in Plain City's service area. The following population estimates for Plain City are taken from the US Census Bureau, City officials, and Utah Governor's Office of Management and Budget (GOMB).

Year	Population
2010	5,476
Current	6,922
Estimated 2020	7,895
Planning year 2037	13,768

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT:

Plain City Council held a public meeting to discuss the proposed project and passed a motion to request project funding from DWQ. Plain City Council stated their intent to engage additional public participation prior to loan authorization.

IMPLEMENTATION SCHEDULE:

The discussed schedule for implementation of the Plain City construction project is as follows:

WQB Introduction	December 3, 2018
WQB Funding Authorization:	January 23, 2019
Complete Construction	Winter 2019

APPLICANT'S CURRENT USER CHARGE:

The 2016 median adjusted gross income (MAGI) for Plain City is approximately $70,893, which is 60 percent higher that the state average of $44,268. Based on the Board's affordability criterion of 1.4% MAGI, the maximum affordable sewer bill for Plain City is $82.71.

COST ESTIMATE:

The estimated cost of Plain City's participation in the trunk line project is outlined in the following table. Staff prepared a static cost model for this project that is attached.

Item	Plain City Contribution	Funded Project Cost
Planning Advance		$ 55,000
Legal/Bonding		$ 50,000
DWQ Loan Origination		$ 26,000
Headworks		$ 717,000
Pump Station		$ 600,000
Land App Infrastructure		$ 300,000
Engineering, Construction Observation, Legal, Admin. 8%		$ 370,000
Contingency (approx. 20%)		$ 404,000
Total	TBD	$ 2,521,000
Project Cost		**$ 2,521,000**

COST SHARING:

Plain City is currently evaluating available funds for a local contribution.

STAFF SUPPORT & RECOMMENDATIONS:

Staff supports the Plain City land application project. Numerous lagoons in rural Utah have turned to land application as a compliance tool and economical method to reduce nutrient loadings to receiving waters and extend the usable life of their lagoons. It is an important water quality project that will enable Plain City to accommodate their expected growth while meeting effluent quality objectives for the next 29 years.

The attached static cost model shows that the required user rates will be below the Board's affordability criteria of 1.4% of MAGI, i.e., a loan is affordable at interest rates that exceed those of the current market.

SPECIAL COSIDERATIONS:

This feasibility report is an introduction of the proposed project to the Board and as such there are no staff recommendations. Staff will provide recommendations to the Board with the request for funding authorization.

Attachment: Plain City Cost Model
U:\ENG_WQ\0-Projects\Plain City\Plain City Feasibility Report.docx
DWQ-2018-012790
File: Plain City, Admin, Section 1

STATIC COST MODEL - Plain City 2018

Project Costs

Upfront Expenses (planning/design, site prep)	$	55,000
Legal/Bonding	$	50,000
DWQ Loan Origination Fee	$	25,000
Lagoon Upgrades	$	717,000
Pump Station	$	600,000
Land App Infrastructure	$	300,000
Engineering, Construction Observation, Legal, Admin. 8%	$	370,000
Contingency (approx 25% const. cost)	$	404,000
Total Project Cost:	**$**	**2,521,000**

Current Customer Base & User Charges

ERU's Plain City	2,036
Total ERU's	2,036
MAGI Plain City:	$70,893
Affordable Monthly Rate at 1.4%	$82.71
Current Impact Fee (per ERU):	$3,075
Plain City Current Monthly User Fee (per ERU)	$23.00
Existing O&M expenses Treatment & Collection	$515,000
New O&M expenses Treatment & Collection	$532,000
Existing Sewer Debt Service	$202,200

Project Funding

Applicant Contribution		TBD
Applicant's Upfront Expenses	$	-
WQB Loan	$	2,521,000
	$	-
Total Project Cost:	**$**	**2,521,000**

Funding Conditions

Loan Repayment Term:	20
Reserve Funding Period:	6

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 a % of MAGI
2,521,000	1.50%	146,838	36,709	532,000	202,200	917,747	37.56	0.64%
2,521,000	1.75%	150,482	37,620	532,000	202,200	922,302	37.75	0.64%
2,521,000	2.00%	154,176	38,544	532,000	202,200	926,920	37.94	0.64%
2,521,000	2.25%	157,921	39,480	532,000	202,200	931,601	38.13	0.65%
2,521,000	2.50%	161,715	40,429	532,000	202,200	936,344	38.32	0.65%
2,521,000	2.75%	165,558	41,390	532,000	202,200	941,148	38.52	0.65%
2,521,000	3.00%	169,451	42,363	532,000	202,200	946,013	38.72	0.66%

Water Right Details for 35-10384

Utah Division of Water Rights 11/14/2018 7:38 PM

(WARNING: Water Rights makes NO claims as to the accuracy of this data.)

Water Right: 35-10384 Application/Claim: A70808 Certificate:

Owners:

Name: Randy Marriott
Address: 5238 West 2150 North
Plain City UT 84404
Interest:
Remarks:

General:

Type of Right: Application To Appropriate Source of Info.: Application to Appropriate Status: Approved
Quantity of Water: 2.5 CFS
Source: Plain City Wastewater Treatment Plant Discharge
County: Weber
Common Description: Plain City
Proposed Det. Book: 35- Map: Pub. Date:
Land Owned by Appl.: County Tax Id#:
Distribution System:

Dates:

Filing:
Filed: 04/11/1997 Priority: 04/11/1997

Advertising:
Publication Began: 04/24/1997 Publication End: 05/01/1997 Newspaper: Standard Examiner
Protest End Date: 05/21/1997 Protested: Not Protested Hearing Held:

Approval:
State Eng. Action: Approved Action Date: 04/03/2014
Recon. Req. Date: Recon. Req Action:

Certification:
Proof Due Date: 04/30/2019 Extension Filed Date:
Election or Proof: Election/Proof Date:
Certificate Date: Lapsed, Etc. Date: Lapsed Letter

Wells:
Prov. Well Date: Well Renov. Date:

Points of Diversion:

Points of Diversion - Surface:
Stream Alteration Required:

(1) N 1320 ft. 0 ft. from SW corner, Sec 29 T 7N R 2W SLBM
Diverting Works: Concrete structure with Source: Wastewater treatment plant
Elevation: UTM: 407697.113, 4573823.144

Water Uses:

Water Uses - Group Number: 200398

Water Rights Appurtenant to the following use(s):

35-10384(APP),

Water Use Types:

Irrigation-Beneficial Use Amount: 90 acres Group Total: 90 Period of Use: 06/01 to 09/30

Comments:

Place Of Use:	North West				North East				South West				South East				Section
	NW	NE	SW	SE	NW	NE	SW	SE	NW	NE	SW	SE	NW	NE	SW	SE	Totals
Sec 29 T 7N R 2W SLBM									X			X	X		X	X	90
																Group Acreage Total :	90

Use Totals:

Irrigation sole-supply total: 90 acres for a group total of: 90 acres

Reservoirs:

Reservoir/Storage Name: Unnamed Reservoir Dam Number:

Capacity: 320 Area Inundated: 40 acres

Dam Height: 10 feet From: 01/01 to 12/31 inclusive

	North West Quarter				North East Quarter				South West Quarter				South East Quarter			
Area	NW	NE	SW	SE	NW	NE	SW	SE	NW	NE	SW	SE	NW	NE	SW	SE
Sec 29 T 7N R 2W SLBM	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF WATER QUALITY
Erica Brown Gaddis, PhD
Director

WATER QUALITY BOARD
FEASIBILITY REPORT FOR EMERGENCY SEWER REPAIR
AUTHORIZATION

APPLICANT:	Wellington City 150 West Main Wellington, Utah 84542 Telephone: (435) 637-5213
PRESIDING OFFICIAL:	Joan Powell, Mayor
TREASURER/RECORDER:	Glenna Etzel, Recorder
CONSULTING ENGINEER:	Jesse Ralphs, PE Sunrise Engineering, Inc. Telephone: (435) 743-6151 25E 500N Fillmore, Utah 84631

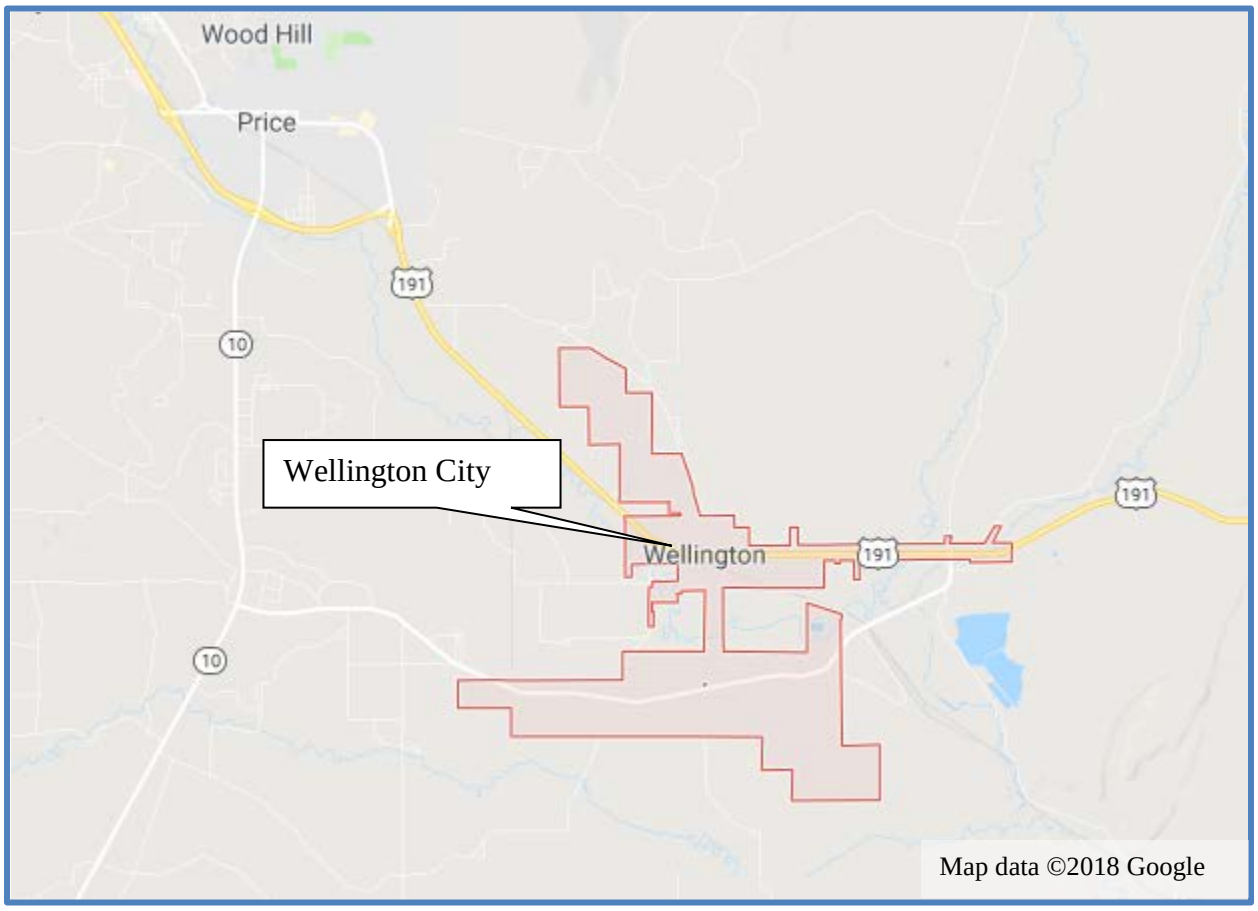
APPLICANT'S REQUEST:

Wellington is requesting financial assistance in the amount of $96,600 for emergency replacement of portions of the sewer main under US Highway 6.

APPLICANT'S LOCATION:

Wellington is the eastern-most city in the Price Valley about 125 miles southeast of Salt Lake City, Utah.

MAP OF APPLICANT'S LOCATION



BACKGROUND:

Wellington City's sewerage system is comprised of clay, concrete, and PVC pipe. The clay pipe and concrete pipe make up the majority of the system, and the PVC pipe is found primarily in the newer developments. The City has been aware for several years of severe corrosion and pipe failures in the existing concrete pipes, and widespread cracking, root intrusion, holes, and other failures in the old clay network. In response to these system concerns, the City has been investigating the extent of the degradation and planning for system improvements over the past few years.

The City engaged a sewer inspection and cleaning company to clean and video their collection system in 2011, and since that time has had the entire system cleaned and recorded. Many areas of severe degradation and concern were recorded by these inspections. The City received a planning advance from the Water Quality Board for a Wastewater Master Plan, which was completed in August 2015. The master plan described the condition of the system and recommended immediate repairs to the most critical sections of the system. The City commissioned a follow-up project scoping assessment in August 2017 to summarize the

recommendations, provide updated cost estimates, and investigate additional areas of concern for possible repair or replacement.

The recommended collection system repairs include replacing approximately 32,000 feet of failed sewer mains. The failed pipes are primarily the vitrified clay pipe and concrete pipe, although there is a small amount of PVC pipe that is also in a state of operational failure. As part of the recommended improvements, all manholes within the replaced sections would also be replaced, and sewer laterals that connect to the replaced pipes would also be replaced back to the property lines. In addition to replacing the failed sections of the existing system, the City is considering installing a new force main to serve a section of the City that is currently not connected to the sewer and is susceptible to flooding from the nearby Price River. The preliminary cost estimate from 2017 to perform these recommended repairs was $7.3 Million.

In September 2017, the City met with representatives of DWQ, CIB and DDW (the City water system is also in need of improvements) to discuss the City's anticipated capital improvement needs, and to discuss possible funding strategies to enable the City to move forward with these improvements.

This project is a portion of the project that was identified in the Master Plan as a critical need. However, the City has not yet been able to complete funding, planning and design of the recommended project prior to locating the collapsed section of pipe. The collapsed pipe is an immediate risk to water quality, health, and the Highway 5 transportation corridor. To stem this risk, the City is requesting emergency funding to help them prevent a failure in the highway.

DWQ has issued Wellington City a Utah Sewer Management Program (USMP) general permit number UTG580124. Wellington City is in compliance with the USMP general permit.

PROJECT NEED:

Wellington City is comprised of the City core, or the developed area surrounding the City center, and a long narrow stretch that borders Hwy 6 for nearly two miles to the east of the City Center. This long narrow stretch along Hwy 6 was originally served by a concrete sewer main from the east side of the City center all the way to the west end of the City's service area near Coal Creek Rd. The concrete main experienced severe deterioration. As a result a section of the line collapsed under Hwy 6 around 2011, prompting an emergency repair that was performed using pipe bursting. In recent years, the City has monitored the condition of the remaining section of concrete line from approximately 1200 E to Coal Creek Road and has observed a rapid degradation of the concrete pipe in this section. There are many locations throughout this stretch of pipe where the top and sides of the pipe are completely missing, leaving the surrounding soil visible.

The most recent cleaning and camera work was performed in July 2018 and showed that the section of pipe between Manhole 106 and Manhole 107 (located just west of the Coal Creek culvert) had deteriorated to the point of not being able to clean and camera the full length of the line due to concrete chunks blocking the way. It is presumed that the concrete chunks are pieces

of pipe that have fallen into the flow line and are now blocking the camera from navigating past these locations from either end. Fortunately, this has not yet resulted in a sanitary sewer overflow (SSO), but the risk is there if this repair is not made, additionally if the pipe collapses it could result in a sinkhole in a critical transportation corridor.

PROJECT DESCRIPTION:

The proposed project will include the remediation of approximately 400 feet of sewer main between the existing Manhole 106 and Manhole 107. The City intends to line the existing sewer main with a cured in place (CIPP) liner. It is anticipated that this will require several spot repairs of the existing pipe to enable the CIPP liner. If it is determined that it will be more cost effective to simply replace the pipe in its entirety, the City will relocate the sewer main out of the Hwy 6 pavement and reinstall it on the shoulder of the highway.

POSITION ON PROJECT PRIORITY LIST:

This project is ranked 10th out of 10 projects on the Wastewater Treatment Project Priority List.

POPULATION GROWTH:

The City estimates that the population will grow at around 1% per year:

Year	Population
2010	1,676
Current	1,701
2020	1,735
2037	2,055

PUBLIC PARTICIPATION:

The City held a preliminary public information meeting in November 2017 and has been on the Southeastern Association of Government's (AOG) local capital improvements priority list for sewer improvements for the past year. The City also met with representatives of UDOT in March 2018 to discuss the criteria for performing sewer replacement work within the UDOT right of way.

IMPLEMENTATION SCHEDULE:

Apply to WQB for Planning Advance:	October 26, 2018
Start Construction	2019
Construction Completion	2019

APPLICANT'S CURRENT USER CHARGE:

The 2017 median adjusted gross income (MAGI) for Wellington City is $35,187, which is 77% of the state average MAGI. A city with less than 80% of the statewide MAGI is an indicator used by some other states as a hardship indicator. The City currently charges $28 per connection, 0.95% of its MAGI.

COST ESTIMATE:

UDOT Coordination	$2,500
Engineering and CMS	$15,500
Construction	$65,500
Contingency	$13,100
Total Planning Cost:	$96,600

COST SHARING:

Wellington City requests the entire funding of $96,600 from the Water Quality Board.

ESTIMATED ANNUAL COST FOR SEWER SERVICE:

Staff developed cost models to evaluate several financing alternatives for the project. The basic cost model data used in modeling financial alternatives for the project are provided below:

Operations and Maintenance (O&M) – Annual	$204,000
Existing Debt – Annual	$8,000
Median Adjusted Gross Household Income (2017)	$35,187
Maximum Affordable Sewer Rate at 1.4 % MAGI	$41.05
Current Equivalent Residential Connections	648

From Table 1 in Attachment 1 it can be seen that the funding is affordable even at current market rates. However, Table 2 (also with Attachment 1) indicates that a 1.4% rate would allow Wellington to borrow up to $1,574,000 of the $7,300,000 needed to complete the entire needed project.

STAFF COMMENTS:

Wellington City has a lot of deferred maintenance that needs to be addressed. This application is for emergency funding to repair a collapsed sewer line; however, there are many other parts of the sewer system that need to be addressed. The City has recently begun to take steps in the right direction by developing a wastewater master plan, inspecting their entire system and identifying its needs. It is important that many of these deficiencies are addressed in the near future. This is reflected in the recommendation and special conditions below, in that the immediate need could be funded with an advance to address address the human health and safety concern, but with the condition that it be repaid if the other concerns are not addressed in the near future, and that it be rolled into a future funding package, when they secure funding for the first phase of the necessary projects.

STAFF RECOMMENDATION:

Staff recommends that the Water Quality Board authorize a **$96,600 Advance to the City of Wellington** for the emergency repair of the collapsed portion of the sewer main in Highway 6. The advance should be repaid from project funds secured for the planned city-wide sewer rehabilitation project, or repaid expeditiously. The Board should be concerned about the condition of the City's sewers and committed to assisting them with low cost financing, planning and technical assistance.

Staff recommends that this funding is subject to these special conditions:

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

2. Complete a Water Conservation and Management Plan.

3. The City must pursue and retain additional funding if necessary to fully implement this project.

4. The City must provide a schedule for implementation of the necessary sewerage system improvements identified in the master plan within 6 months of authorization. If milestones provided by the City are not met, the City must repay the advance within 1 year.

5. The emergency project advance will be repaid along with the 2015 planning advance when financing is secured for Phase 1 of the sewer restoration project.

ATTACHMENT 1

Wellington City - Water Quality Board

20 Year Loan Static Cost Model

Current Customer Base & User Charges	
Current (ERU):	630
MAGI (2016 CITY):	$35,187
Monthly User Fee (per ERU):	$28.00
1.4% MAGI UserFee	$41.05

Project Costs	
Sewer Project	$96,600
Bond Council	$5,000
Loan Origination Fee	$1,000
Total Project Cost:	$103,000

Projected Annual Sewer O&M Cost	
Estimated Operating Expenses:	$204,000

Project Funding		
South Salt Lake WQB Loan	**$**	**103,000**
Total Project Cost:	$	103,000

Funding Conditions	
Loan Repayment Term:	20 years
Reserve Funding Period:	6 years

TABLE 1- EMERGENCY PROJECT ESTIMATED COST OF SEWER SERVICE UNDER STRAIGHT-LINE AMORTIZATION

WQB Grant Amount	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 a % of MAGI
$96,600	$0	0.0%	$0	$0	$204,000	$8,000	$212,000	$28.04	0.96%
$0	$103,000	0.0%	$5,150	$1,288	$204,000	$8,000	$218,438	$28.89	0.99%
$0	$103,000	0.5%	$5,425	$1,356	$204,000	$8,000	$218,781	$28.94	0.99%
$0	$103,000	1.0%	$5,708	$1,427	$204,000	$8,000	$219,135	$28.99	0.99%
$0	$103,000	1.5%	$5,999	$1,500	$204,000	$8,000	$219,499	$29.03	0.99%
$0	$103,000	2.0%	$6,299	$1,575	$204,000	$8,000	$219,874	$29.08	0.99%
$0	$103,000	2.5%	$6,607	$1,652	$204,000	$8,000	$220,259	$29.13	0.99%
$0	$103,000	3.0%	$6,923	$1,731	$204,000	$8,000	$220,654	$29.19	1.00%
$0	$103,000	4.0%	$7,579	$1,895	$204,000	$8,000	$221,474	$29.30	1.00%
$0	$103,000	5.0%	$8,265	$2,066	$204,000	$8,000	$222,331	$29.41	1.00%

20 Year Loan Static Cost Model $7.3 Million Needed Project

TABLE 2 - NEEDED PROJECT ESTIMATED COST OF SEWER SERVICE UNDER STRAIGHT-LINE AMORTIZATION

WQB Grant Amount	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 a % of MAGI
$0	$0	0.0%	$0	$0	$204,000	$8,000	$212,000	$28.04	0.96%
$5,726,000	$1,574,000	0.0%	$78,700	$19,675	$204,000	$8,000	$310,375	$41.05	1.40%
$2,000,000	$5,300,000	**0.0%**	**$265,000**	**$66,250**	**$204,000**	**$8,000**	**$543,250**	**$71.86**	**2.45%**
$0	$7,300,000	0.0%	$365,000	$91,250	$204,000	$8,000	$668,250	$88.39	3.01%

Date Received: May 1, 2018
Date to be presented to the WQB: December 03, 2018

WATER QUALITY BOARD
FEASIBILITY REPORT FOR WASTEWATER TREATMENT PROJECT
AUTHORIZATION

APPLICANT: City of South Salt Lake
220 E Morris Avenue, #200
South Salt Lake, UT 84115
Telephone: 801-483-6000

PRESIDING OFFICIAL: Cherie Wood, Mayor
City of South Salt Lake
220 E Morris Avenue, #200
South Salt Lake, UT 84115
Telephone: 801-483-6000

TREASURER/RECORDER: Kyle Kershaw, Finance Director
City of South Salt Lake
220 E Morris Avenue, #200
South Salt Lake, UT 84115
Telephone: 801-464-6756

CONSULTING ENGINEER: N/A (see CVWRF)

BOND COUNSEL: Chapman & Cutler
215 S State Street
Salt Lake City, UT 84111
Telephone: 801-533-0066

APPLICANT'S REQUEST:

The City of South Salt Lake (City) is requesting hardship financial assistance from the Utah Water Quality Board in the amount of $11,248,000. This financing would cover South Salt Lake's share of the Central Valley Water Reclamation Facility (CVWRF) project.

APPLICANT'S LOCATION:

The City of South Salt Lake is located in the center of the Salt Lake Valley, as shown in Figure 1. Figure 1 also shows the location of Central Valley Water Reclamation Facility (CVWRF). The City is one of seven member entities that own the Central Valley Water Reclamation Facility (CVWRF). The City's sewerage system serves about half of the City's population (as shown in Figure 2) with the remainder served by Mt. Olympus SSD.

MAP OF APPLICANT'S LOCATION

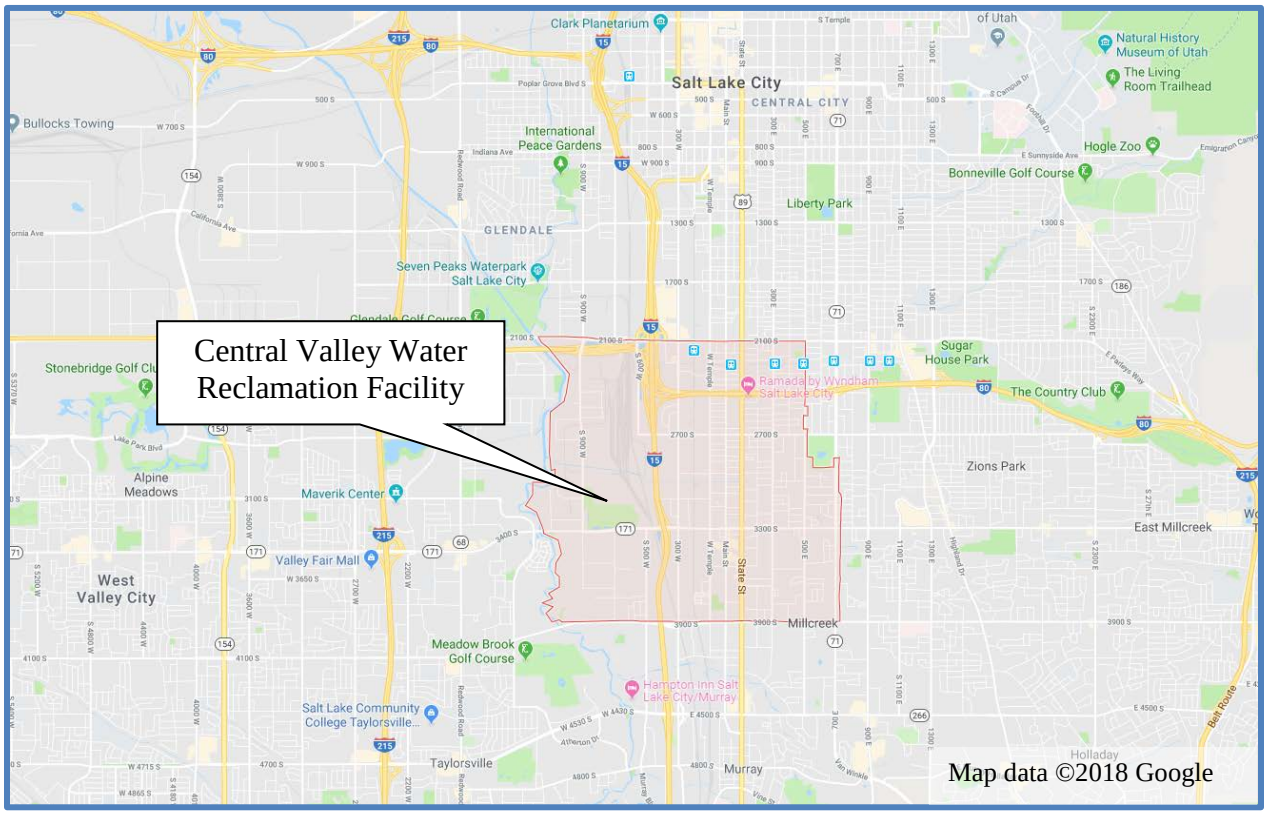


Figure 1: Location of South Salt Lake City Limits and CVWRF

MAP OF APPLICANT'S SERVICE AREA

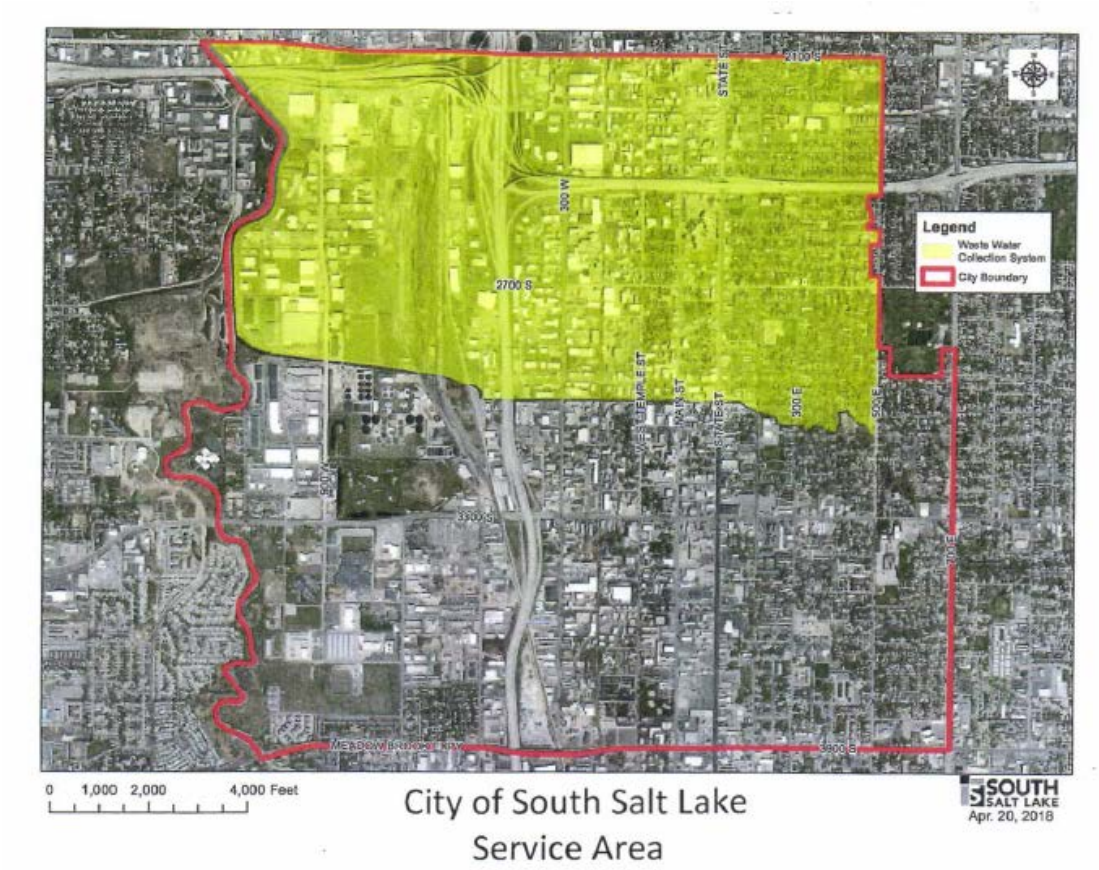


Figure 2: Portion of City Treated by CVWRF, **Source: South Salt Lake WQB Application**

BACKGROUND:

South Salt Lake is one of seven member entities that own the CVWRF. The WQB heard from the CVWRF in the April Board meeting regarding their request for financial assistance to upgrade the treatment plant and comply with the Technology Based Phosphorous Effluent Limit (TBPEL) UAC R317-1-3.3 rules. As a CVWRF member entity, the City owns a pro-rata share of the facility that is based on its usage and demand on the facility. The CVWRF treats wastewater for over 500,000 people in Salt Lake County. The City is the smallest member entity with only 2,600 connections in the system. South Salt Lake's ownership share is approximately 6.29%, adjusted annually. The City is therefore responsible to fund approximately 6.29% of the cost of the CVWRF, including capital improvements.

The City also owns and operates its own wastewater collection system. The collection system is approximately 35 miles of line and three lift stations. The City has about 60% of their collection system as clay pipe in fair condition and 40% plastic pipe in good condition. The City employs three staff and provides equipment, materials, and supplies to maintain the collection system that serves approximately 2,600 connections. The City limits are largely developed. Growth in the City often comes from installation of high density housing. The City reported that last year only two new residential and one new commercial units were connected to the collection system. The

City is currently updating its Utah Sewer System Management Program (SSMP) and Capital Facility Plan.

At the May 23, 2018 introduction to the board for South Salt Lake City (the City) the question was raised by a board member regarding the potential merger with the City and Mt. Olympus Improvement District's wastewater collection systems. A copy of the letter from the City to the Water Quality Board is included in the packet as Attachment 2. The letter details how they have met with Mt Olympus and both entities are interested in continuing to investigate the possibility as there would be benefits to the potential merger. However, there are a number of complicated issues that need to be addressed that will take significant time to resolve.

South Salt Lake City is in compliance with the Utah Sewer Management Program general permit UTG580015. DWQ is working with the City to develop an enforceable compliance agreement to address deficiencies in the municipal separate storm sewer system (MS4) program. The City Council passed a resolution on November 14, 2018 that resolves to identify a sustainable funding source to provide adequate resources to achieve compliance with the MS4 permit and to seek financial assistance from the Water Quality Board (see Attachment 3).

PROJECT NEED:

Central Valley discharges wastewater into Mill Creek, then the Jordan River, which has been identified as impaired for Dissolved Oxygen (DO) and Total Dissolved Solids (TDS) based on the 2004-303(d) assessment process as defined in the Clean Water Act. Central Valley also cannot reduce phosphorus to 1mg/l TBPEL with its current facility. This project will significantly reduce phosphorus and total nitrogen discharges to the lower Jordan River system, and bring the CVWRF into compliance with the TBPEL requirements.

The City, as a member entity of CVWRF, is obligated to participate in the funding of the CVWRF capital improvement plan. South Salt Lake stated in their application that they recognize the importance of the project and have shown their support by taking steps to increase rates to fund the first phase of the improvements.

The City has endeavored to accommodate as many of these improvement costs as possible by passing the costs onto the South Salt Lake rate payers. Since the CVWRF's Board voted to undertake its capital improvement plan, the increasing costs of CVWRF treatment is causing hardship on the City's CVWRF sewer customers. The City increased the user rates in 2016 for initial CVWRF improvements and is underway approving an additional rate increase to fund the 2017 Bond associated with phase one of this project. With only half of the City connected to the collection system to CVWRF, as shown in Figure 3, it is difficult for the City to pass any general obligation bonds or tax subsidies. Such city wide measures would result in the non-CVWRF treatment portion of the City subsidizing the connected portion. The large cost of the project, in addition to its timing, will result in hardship for the City's CVWRF sewer customers by WQB metrics. The City is seeking funding for additional assistance apart from CVWRF's WQB application in an attempt to ease the financial burden of the CVWRF project on its sewer customers.

PROJECT DESCRIPTION:

Currently, major process changes and facility improvements are being designed that will be constructed and in service by 2025. These improvements are in response to aging infrastructure issues of the original plant, which is now 30 years old, and a new rule from the State of Utah Division of Water Quality (DWQ) governing discharges of phosphorus. Central Valley's treatment process will be upgraded to a state-of-the-art biological nutrient removal (BNR) process and all major mechanical and electrical systems will be rehabilitated or replaced, so that the facility can successfully serve the public for the next 30 years. In the next 20 years, Central Valley expects to invest over $300 million in capital improvement projects that will upgrade, replace, and renew its wastewater infrastructure.

CVWRF has implemented a multi-phase Capitol Improvement Program to upgrade the existing facility infrastructure to address aged treatment systems and meet TBPEL. Phase one of the project consisted of replacing old infrastructure and addition of clarifiers to the facility. The total cost of phase one was approximately $58,000,000, of which South Salt Lake's share was $3,200,000. The City participated with other CVWRF entities to issue debt to fund phase one of the project. Phase two of the project is the construction of facilities to treat nutrients. The total cost of phase two is approximately $177,000,000. CVWRF has applied to the WQB for financial assistance amounting to about 45% of its project, which would be a loan of $81,100,000.

South Salt Lake is seeking financial hardship assistance to fund 100% of the City's portion of the CVWRF project, with requested funding of $11,248,000. This is not part of the $81,100,000 being requested by CVWRF.

ALTERNATIVES CONSIDERED

As discussed in the CVWRF memo:

The following alternatives were evaluated to determine the preferred alternative for Central Valley:

Alternative 1a:	Chemical phosphorus (P) removal
Alternative 1b:	Chemical P removal and tertiary denitrification filters
Alternative 2a:	Full biological nutrient removal (BNR) activated sludge
Alternative 2b:	BNR activated sludge and chemical P removal
Alternative 3:	BNR activated sludge preceded with trickling filters

Alternative 2a was selected as the preferred alternative. Central Valley proposes a phased biological treatment approach starting with an anaerobic/oxic (A/O) process mode, for meeting an effluent phosphorus limit of 1 mg/L. In addition, side stream nutrient removal would be provided on the biosolids dewatering process filtrate to minimize nutrient recycling and reduce the overall size of the mainstream treatment process.

POSITION ON PROJECT PRIORITY LIST:

This (Central Valley) project is ranked 3rd of 8 projects on the Wastewater Treatment Project Priority List.

POPULATION GROWTH:

Table 1 shows the current and projected populations for the entirety of South Salt Lake City, as shown on Figure 1. The city's sewer service covers about half of these residents.

Table 1: Population Projections for Entire South Salt Lake City (U.S. Census Bureau, City of South Salt Lake Planning Department)

Year	Residents*
2010	23,617
2018	24,575
2020	28,200

*Total City population, including sewer customers served outside of CVWRF

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT:

South Salt Lake has taken or been part of the following steps to include the public in the proposed project:

1. July 2016, South Salt Lake City Council presented the need for the CVWRF improvements as well as the financial impact on rate payers.
2. April 2017, South Salt Lake City Council presented the CVWRF capital plan and City's funding responsibilities.
3. Second Quarter 2018, South Salt City's Council adopted an increased $7 per 1,000 gallon user rate to fund the 2017 bond for $3,500,000 associated with Phase 1 of the CVWRF project.

IMPLEMENTATION SCHEDULE:

Apply to WQB for Funding:	March 4, 2018
WQB Introduction	April 18, 2018
WQB Funding Authorization:	December 3, 2018
Facility Plan Approval:	December 2018
Issue Construction Permit	October 2019
Bid Opening	November 2019
Complete Construction	June 2024
Complete Commissioning	December 2024

FISCAL SUSTAINABLITY REVIEW:

South Salt Lake City has participated in the State of Utah Municipal Wastewater Planning Program self-assessment report (MWPP) since 2002. DWQ staff reviewed the City's MWPPs and found that the City follows many industry best practices relevant managing its sewer assets:

- Has and maintains an asset management and a preventative maintenance program
- Maintains a Plan of Operations
- The City has completed a rate study in the last 5 years
- The City charges impact fees and has completed an Impact Fee Analysis report within the last five years.
- The City uses a separate enterprise sewer account for sewer funds and maintains a Capital Improvements reserve fund
- The City Updates its Capital Facility plan regularly
- The City reported zero overflows last year for to the SSMP
- The overall system is considered to be in fair to good condition

These financial and record keeping procedures demonstrate to staff that the City takes an active role in understanding and maintaining their sewer assets. Staff also reviewed the sewer enterprise accounts from 2014 to 2017 focusing on O&M charges. The City is currently in good standing with Utah State Auditor. The City currently has two other existing sewer debts with a total of $311,500 due annually:

- $61,500 annually until 2022 - DWQ 2002 Loan for CVWRF improvements
- $250,000 annually until 2037 - Phase I CVWRF upgrade 2017 Bond

Staff's analysis of the City's collection system management found that the City's sewer enterprise is fiscally sustainable as evidenced by:

- The City has consistently set user fees and impact fees in planning their infrastructure improvements
- The City uses a separate enterprise account its sewer funds
- The City's continued participation in the MWPP since 2002

APPLICANT'S CURRENT USER CHARGE:

The 2016 median adjusted gross income (MAGI) for South Salt Lake is $30,521, which is 68% of the state average MAGI. The City raised the wastewater user charge in February of 2016 from $3.50 per 1,000 gallons of winter use to the $5 per 1,000 gallons and again in July 2018 to $7 per 1,000 gallons. The City's rate structure results in the average user charge of approximately $42/month/ERU, which is 1.65% of their MAGI (Note: a 1.4% average monthly user charge would be $35.61/month/ERU).

COST ESTIMATE:

The estimated cost of South Salt Lake's portion of the project is based on the City's pro-rata ownership in CVWRF. Staff developed the model using the City's current portion of 6.29% share of the total CVWRF project amount, plus closing costs. Staff prepared a static cost model

for this assistance package, summarized in Table 2 and in detail in Attachment 1. The cost model was developed to show how South Salt Lake's assistance request would fit into the overall financing of CVWRF's capital project financing.

Table 2: Static Cost Model Example at 0%

CVWRF Project Cost	**$177,059,000**
South Salt Lake's Percent	**6.29%**
South Salt Lake's Portion	**$11,137,000**
South Salt Lake's Loan Origination	**$111,000**
South Salt Lake's Loan Total Cost	**$11,248,000**

COST SHARING:

Phase two of the project is expected to cost $177,059,000. South Salt Lake City is responsible for approximately 6.29% of the CVWRF total project, as shown in Table 3.

Table 3: Cost Sharing of South Salt Lake for CWVRF's WQB Financial Assistance

Funding Source	Cost Sharing	Percent of Project
Total Other CVWRF Member Portion	$165,922,000	93.71%
South Salt Lake Portion	$11,137,000*	6.29%
Total CVWRF Project	**$177,059,000**	**100%**

*Plus South Salt Lake's closing costs estimated at $111,000 bring the total South Salt Lake request to $11.25 million as shown in Table 2

It is worth noting that Central Valley intends to fund the balance of its 20 year, $300 million investment through member contributions and public market financing which will further increase user rates for it member entities. This is not included in the current cost model.

ESTIMATED ANNUAL COST FOR SEWER SERVICE:

Staff developed cost models to evaluate several financing alternatives for the project. The basic cost data used in modeling financial alternatives for the project are provided below:

Operations and Maintenance (O&M) – Annual	$500,000
Existing Debt – Annual	$311,521
Median Adjusted Gross Household Income (2016)	$30,521
Maximum Affordable Sewer Rate at 1.4 % MAGI	$35.61

The static cost model shows that the current user rates are above the Board's affordability criteria of 1.4% of MAGI, i.e., a loan at any interest rate will increase the rate further above 1.4% of MAGI. Current market rates (from 11/16/18) index as follows:

US 20-year Treasury Bond[1]	3.25%
US 30-year Treasury Bond[1]	3.35%
MBIS Municipal Bond Index, 20-year[2]	3.524%

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

The static cost model shows that the City would need to charge $64.57 for a 0% interest rate loan for 20 years which would result in a MAGI of 2.54% without additional subsidy.

STAFF COMMENTS:

This upgrade to the CVRWF is an important water quality project that will allow the largest water reclamation facility in the State to come into compliance with the TBPEL, improve flexibility to meet anticipated future requirements, and improve overall water quality discharged from the reclamation facility.

South Salt Lake is requesting separate consideration, rather than combined assistance with the CVWRF request, to provide additional subsidy to the South Salt Lake City CVWRF customers. South Salt Lake City's request for financial assistance should be considered by the Board in conjunction with CVWRF request. The $11,248,000 request for South Salt Lake City's portion of the project is not included in the $81.1 million funding request from the Board by CVWRF.

Without separate more favorable terms for South Salt Lake City, the City's user cost approaches 2.7% of MAGI as shown in the highlighted row of Attachment 1. Even with a loan of $9,248,000 at an interest rate of 0% repayable over 20 years, and principal forgiveness of $2,000,000, user cost would still be 2.36% (It should be noted that the maximum principal forgiveness for one cap grant year is between $2M and $2.5M). At 2.36% of MAGI, staff believes South Salt Lake City's customers will face one of, if not the highest sewer bills in the state relative to MAGI.

As noted above, the WQB expressed concern that South Salt Lake should explore joining with Mt. Olympus. This has potential benefits to South Salt Lake City and they are committed to pursuing this further. However, this will not be resolved in the necessary time frame to keep the project on track to meet its variance deadline.

STAFF RECOMENDATION:

Staff recommends that the Board authorize funding to South Salt Lake City **for a loan of $9,248,000 at an interest rate of 0% repayable over 20 years, and principal forgiveness of $2,000,000** subject to the following special conditions:

1. South Salt Lake City must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
2. South Salt Lake City must pursue and retain any additional funding necessary to fully implement the project.
3. South Salt Lake City must develop and implement an asset management program that is consistent with EPA's Fiscal Sustainability Plan guidance.

DWQ-2018-011041
File: South Salt Lake City, Admin, Section 1

ATTACHMENT 1

South Salt Lake City - Water Quality Board

20 Year Loan Static Cost Model (Member Entity Portion of CVWRF Improvements)

CVWRF Total Project Cost	$177,059,000
South Salt Lake City's portion	6.29%
Project Costs	
South Salt Lake Portion of Proj	$11,137,000
Loan Origination Fee	$111,000
Total Project Cost:	$11,248,000

Current Customer Base & User Charges	
Current (ERU):	2,621
MAGI (2016 CITY):	$30,521
Sewer Impact Fee (per ERU):	$1,063
Monthly User Fee (per ERU):	$42.00
1.4% MAGI UserFee	$35.61

Projected Annual Sewer O&M Cost	
Estimated Operating Expenses:	$1,000,000

Project Funding	
Cash from member entities	$ 21,104,665
Central Valley WQB Loan	$ 81,100,000
Publicly issued bonds@3%	$ 63,717,335
South Salt Lake WQB Loan	**$ 11,248,000**
Total Project Cost:	$177,170,000

Funding Conditions	
Loan Repayment Term:	20 years
Reserve Funding Period:	6 years

ESTIMATED COST OF SEWER SERVICE UNDER STRAIGHT-LINE AMORTIZATION

WQB Grant Amount	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 a % of MAGI
$11,248,000	$ -	0.0%	$0	$0	$1,000,000	$311,500	$1,311,500	$41.70	1.64%
$3,000,000	$8,248,000	0.0%	$412,400	$103,100	$1,000,000	$311,500	$1,827,000	$58.09	2.28%
$2,000,000	**$9,248,000**	**0.0%**	**$462,400**	**$115,600**	**$1,000,000**	**$311,500**	**$1,889,500**	**$60.08**	**2.36%**
$1,000,000	$10,248,000	0.0%	$512,400	$128,100	$1,000,000	$311,500	$1,952,000	$62.06	2.44%
$0	$11,248,000	0.0%	$562,400	$140,600	$1,000,000	$311,500	$2,014,500	$64.05	2.52%
$0	$11,248,000	0.5%	$592,392	$148,098	$1,000,000	$311,500	$2,051,990	$65.24	2.57%
$0	$11,248,000	1.0%	$623,311	$155,828	$1,000,000	$311,500	$2,090,639	$66.47	2.61%
$0	$11,248,000	1.5%	$655,148	$163,787	$1,000,000	$311,500	$2,130,435	$67.74	2.66%
$0	$11,248,000	1.8%	$674,686	$168,671	$1,000,000	$311,500	$2,154,857	$68.51	2.69%
$0	$11,248,000	2.0%	$687,891	$171,973	$1,000,000	$311,500	$2,171,363	$69.04	2.71%

Bolded Row is Staff Recommendation, Highlighted Row is if they receive the same rate as recommendation for Central Valley

SOUTH SALT LAKE CITY ON THE MOVE

July 17, 2018

Utah Water Quality Board
Utah Department of Environmental Quality
195 N 1950 W
Salt Lake City, UT, 84114

Re: Waste Water Systems Merger

Dear Board Members,

At the May 23, 2018 Utah Water Quality Board meeting the City of South Salt Lake requested financial assistance for its share of costs related to upcoming projects at the Central Valley Water Reclamation Facility (CVWRF). During the presentation a question was raised by a board member regarding the potential merger of South Salt Lake's waste water system with Mt. Olympus Improvement District's (District) system. Since that time South Salt Lake staff has researched this idea and has collected information relevant to this issue. Also, City staff has met with Mt. Olympus management to discuss a potential merger and collect additional information.

It should be noted that the idea of consolidation has been raised in the past by both entities. Nearly 25 years ago discussions were undertaken to ascertain the feasibility of a merger. At that time the Salt Lake Suburban Sanitary District #1 (now Mt. Olympus Improvement District) determined a merger would not be in the best interest of their rate payers. This decision was made based upon the district's perception that South Salt Lake's infrastructure and billing system had shortcomings.

Additional discussions took place in the early 2000's. This effort was short-lived due to a disagreement over water rights when water reuse programs were being discussed. The latest discussions took place in approximately 2004. An extensive analysis was conducted to ascertain the condition of South Salt Lake's system. The District determined that due to pump stations, which are a part of South Salt Lake's system, it would be cost prohibitive to operate. Also, South Salt Lake was unable to transfer the amount of cash reserves to the District to compensate for the disparity in system infrastructure.

Though a consolidation never occurred, South Salt Lake's relationship with the District has remained positive and collegial. South Salt Lake and the District work together on many issues particularly as they pertain to the CVWRF. Both entities hold Board seats in that organization.

At this time we can report to the Utah Water Quality Board that there is potential that the two systems could consolidate at a future time. There is no animus or philosophical reasons why the systems could not consolidate. Due to the proximity of the systems, dual membership in the CVWRF, the District providing service to 50% of South Salt Lake residents and businesses, and the potential for economies of scale makes the idea of a merger logical to both entities.

There are a number of issues identified by both entities that would need to be addressed before a consolidation could occur. Some of these issues are:

> **Condition and make-up of the infrastructure** – over the past several years, as funding has allowed, South Salt Lake has renovated and updated its collection system, however, the District would want to ensure their current ratepayers are not financially burdened by the acquisition of a substandard or expensive (pump stations) system.

CHERIE WOOD
MAYOR

220 E MORRIS AVE
SUITE 200
SOUTH SALT LAKE CITY
UTAH
84115
O 801.483.6000
F 801.483.6001

Billing structure differences – the District bills their customers on an Equivalent Residential Unit (ERU) basis while South Salt Lake bills based on winter water usage. These two methods would need to be reconciled.

Property tax assessment – the District levies a property tax as a part of their system's financial plan. South Salt Lake operates its waste water utility as an enterprise fund which is financially sustained by user fees.

Reserve (cash) funds – there is a significant difference, even on a pro-rata basis, in the amount of reserved cash balances between the two organizations. Some type of funds transfer from South Salt Lake would be required.

CVWRF ownership – currently both the District and South Salt Lake have ownership interests in the CVWRF. The CVWRF was created by interlocal agreement between seven entities and any change in ownership and board representation would require the amendment of the agreement. This would require the five other member entities approve any change in ownership makeup. This process, with its associated legal review, would take a long time to complete.

As mentioned earlier we believe there is a potential to merge the two systems at some point. We will endeavor to continue discussions with officials at the Mt. Olympus Improvement District. Officials at the District have committed the same.

We appreciate the recommendation from the Water Quality Board to explore this idea and appreciate your support. Please contact me or my staff if you require additional information.

Cordially,

Cherie Wood

Cherie Wood, Mayor

RESOLUTION NO. 2018-_19_

Attachment 3

A RESOLUTION OF THE SOUTH SALT LAKE CITY COUNCIL EXPRESSING ITS COMMITMENT TO IDENTIFY A SUSTAINABLE REVENUE SOURCE TO ADEQUATELY FUND THE CITY'S STORM WATER OBLIGATIONS.

WHEREAS, the City of South Salt Lake ("City") owns and operates a storm water collection system which has been developed over many years and consists of a network of natural conveyances and manmade structures and conduits that collect, control and route storm water runoff; and

WHEREAS, the City is required to protect the waterways within its jurisdiction from polluted storm water in accordance with the requirements set forth in the Jordan Valley Municipalities Municipal Separate Storm Sewer System Permit ("MS4 Permit") issued by the State of Utah Department of Environmental Quality Division of Water Quality; and

WHEREAS, in order to meet the requirements of the MS4 Permit the City shall identify adequate resources for the operation, maintenance, and infrastructure needs of the storm water collection system,

NOW, THEREFORE, BE IT RESOLVED by the City of South Salt Lake City Council that the City Council acting as the budgetary arm of the City is committed to identifying a sustainable funding source to provide adequate resources to achieve compliance with the MS4 permit in an effort to promote and improve water quality.

BE IT FURTHER RESOLVED, by the City of South Salt Lake City Council that the City Council encourages the Mayor to seek funding through the Clean Water State Revolving Fund managed by the Utah Water Quality Board in an amount of $2.2 million for eligible capital storm water projects in South Salt Lake and to pursue a planning advance to detail analysis of storm water needs.

APPROVED AND ADOPTED by the City Council of the City of South Salt Lake, Utah, on this 14th day of NOVEMBER, 2018.

BY THE CITY COUNCIL:

Ben B. Pender, Council Chair

Council vote as recorded:

Bynum	YES
deWolfe	YES
Kindred	ABSTAIN
Mila	YES
Pender	YES
Siwik	YES
Thomas	YES

CITY OF SOUTH SALT LAKE CORPORATE Seal SALT LAKE COUNTY, UTAH

ATTEST:

Craig D. Burton, City Recorder

Date Received: March 6, 2018
Date to be presented to the WQB: December 03, 2018

WATER QUALITY BOARD
FEASIBILITY REPORT FOR WASTEWATER TREATMENT PROJECT
AUTHORIZATION

APPLICANT:	Central Valley Water Reclamation Facility 800 Central Valley Road Salt Lake City, Utah 84119
PRESIDING OFFICIAL:	Tom Holstrom, P.E. – General Manager
CONTACT PERSON:	Phillip Heck, P.E. – Asst. General Manager
TREASURER/RECORDER:	Justin Zollinger, CPA, -CFO
CONSULTING ENGINEER:	Trevor Lindley, P.E. Brown & Caldwell 6975 Union Park Center #490 Salt Lake City, UT 84047 Telephone: (801) 316-9802
BOND COUNSEL:	Chapman and Cutler LLP 215 S State Street Salt Lake City, UT 84111 Telephone (801) 533-0066
FINANCIAL ADVISOR:	David Robertson Lewis Young, Robertson & Burningham, Inc. 41 North Rio Grande Street, Ste. 101 Salt Lake City, UT 84101 Telephone (801) 596-0700

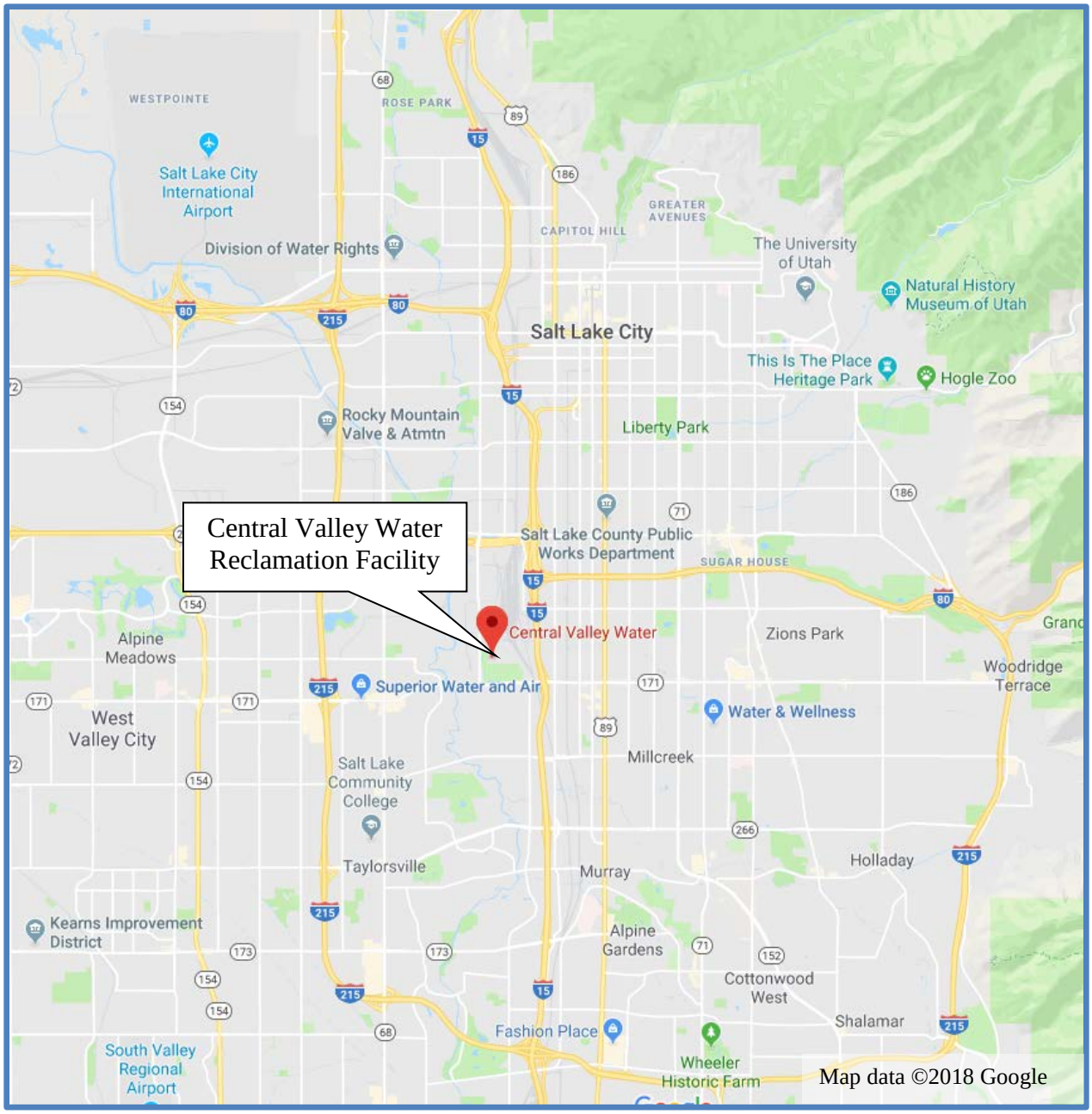
APPLICANT'S REQUEST:

The Central Valley Water Reclamation Facility (Central Valley) is requesting financial assistance in the amount of an $81,100,000 loan for the upgrade of its Water Reclamation Facility.

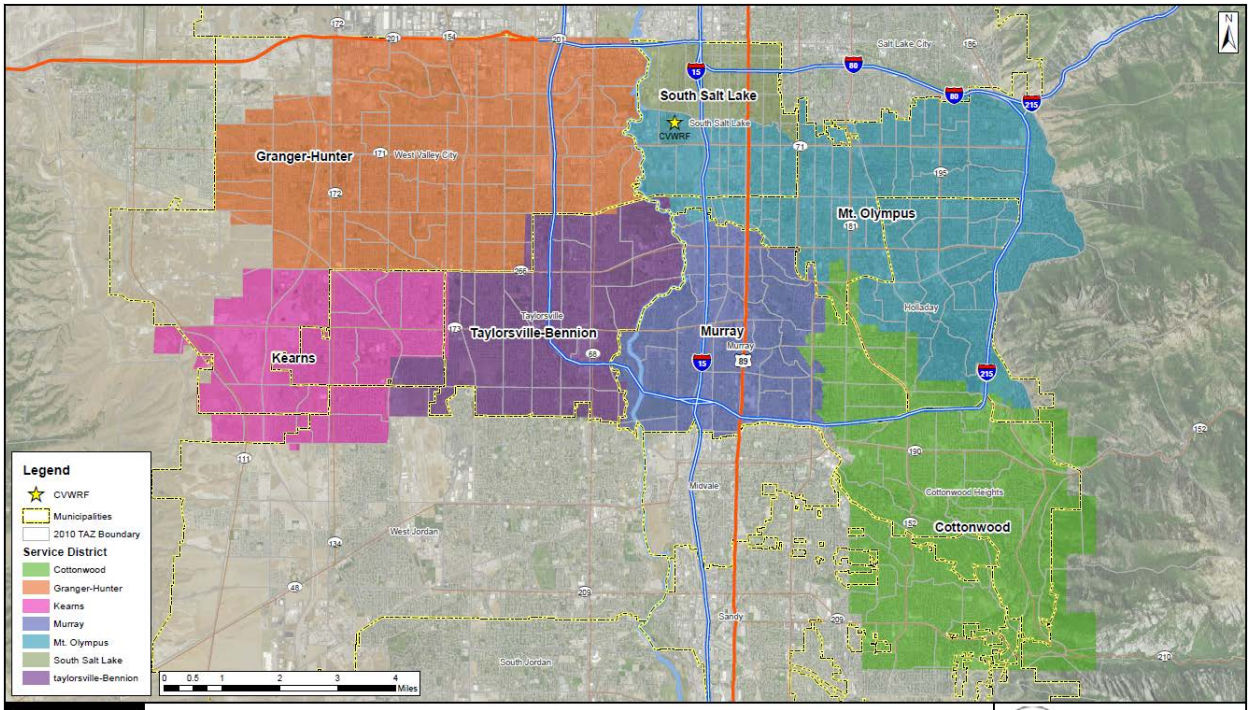
APPLICANT'S LOCATION:

The Central Valley Water Reclamation Facility is located at 800 Central Valley Road, Salt Lake City, UT. Maps showing this location and Central Valley's service area follow.

MAP OF APPLICANT'S LOCATION



MAP OF APPLICANT'S SERVICE AREA



Brown AND Caldwell

FIGURE 1
SERVICE DISTRICTS

CVWRF
CENTRAL VALLEY WATER RECLAMATION FACILITY

BACKGROUND:

In 1978, the Central Valley Water Reclamation Facility Board (Central Valley) was organized as an Inter-Local Agreement Agency. Members of the Board represent five special service districts and two cities that previously owned and operated wastewater collection systems and five small treatment plants. Central Valley Water Reclamation Facility was constructed between 1981 and 1987, replacing the five treatment facilities with a regional treatment plant. Central Valley's member agencies are listed below:

- Cottonwood Improvement District
- Granger-Hunter Improvement District
- Kearns Improvement District
- Mt. Olympus Improvement District
- Murray City
- South Salt Lake City
- Taylorsville-Bennion Improvement District

The facility was constructed with a combination of U.S. EPA Construction Grants and local funds. The facility underwent major expansion and improvement projects in 1994, 2001, and 2005 to add both liquid and solids treatment capacity. In 2010, the facility made a major process change to eliminate the use of liquefied chlorine gas for effluent disinfection. With this project, the original chlorine contact process was replaced with the safer ultraviolet light (UV) disinfection process.

Central Valley Water Reclamation Facility is located at 800 West Central Valley Road (3190 South) in South Salt Lake City. Central Valley was built on property owned by one of the centrally located member entities. The facility is designed and built to treat 75 million gallons of wastewater each day; Central Valley serves over 500,000 people in Salt Lake County.

Central Valley is currently in compliance with all UPDES permits.

PROJECT NEED:

Central Valley discharges wastewater into Mill Creek, then the Jordan River, which has been identified as impaired for Dissolved Oxygen (DO) and Total Dissolved Solids (TDS) based on the 2004-303(d) assessment process as defined in the Clean Water Act. This project will significantly reduce phosphorus and total nitrogen discharges to the lower Jordan River system, as well as improving compliance with ammonia and whole effluent toxicity (WET) requirements.

PROJECT DESCRIPTION:

Major process changes and facility improvements are being designed that will be constructed and in service by 2025. These improvements are in response to aging infrastructure issues of the original plant, which is now 30 years old, and a new rule from the State of Utah Division of Water Quality (DWQ) governing discharges of phosphorus. Central Valley's treatment process will be upgraded to a state-of-the-art biological nutrient removal (BNR) process and all major mechanical and electrical systems will be rehabilitated or replaced, so that the facility can successfully serve the public through the design year 2045. The new facilities will have an advanced treatment design capacity of 83.9 MGD. In the next 20 years, Central Valley expects to invest over $300 million in capital improvement projects that will upgrade, replace, and renew its wastewater infrastructure.

APPLICANT'S ALTERNATIVES EVALUATED:

Central Valley completed a report in 2015 titled "Evaluating the Technical and Economic Feasibility of Modifying the CVWRF to Achieve Nutrient Removal". This document is the summary report of an extensive evaluation of chemical and biological nutrient removal alternatives for the water reclamation facility conducted by Brown and Caldwell and a technical advisory team of national and international experts on wastewater nutrient removal. This report utilized several technical memoranda that evaluated alternatives, and solicited outside peer review of the treatment alternatives from a Technical Advisory Committee.

The following alternatives were evaluated to determine the preferred alternative for Central Valley:

Alternative 1a:	Chemical phosphorus (P) removal
Alternative 1b:	Chemical P removal and tertiary denitrification filters
Alternative 2a:	Full biological nutrient removal (BNR) activated sludge
Alternative 2b:	BNR activated sludge and chemical P removal
Alternative 3:	BNR activated sludge preceded with trickling filters

The do nothing alternative would result in non-compliance with the TBPEL phosphorus rule.

Alternative 2a was selected as the preferred alternative. The report recommends a phased biological treatment approach starting with an anaerobic/oxic (A/O) process mode, for meeting an effluent phosphorus limit of 1 mg/L. In addition, side stream nutrient removal will be provided on the biosolids dewatering process filtrate to minimize nutrient recycling and reduce the overall size of the mainstream treatment process. This process can be expanded into a five stage Bardenpho process in the future to achieve lower levels of Total Inorganic Nitrogen.

The principal wastewater treatment systems that will be constructed with Water Quality Board financial assistance are listed. These projects include $13.5 million in Green Project Reserve eligible construction.

- Fermentation/Primary Solids Thickening
- Biological Nutrient Removal Basins
- Sidestream Phosphorus Removal
- Sidestream Nitrogen Removal

POSITION ON PROJECT PRIORITY LIST:

This project is ranked 3rd of 10 projects on the Wastewater Treatment Project Priority List.

POPULATION GROWTH:

Population and Connection Projections

Year	Residents
2014	473,734
2040	543,126
Build Out	586,376

(Source: Technical Memorandum No. 2 –Design Criteria Prepared May 8, 2015)

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT:

Public participation and support for this project has been demonstrated in the following ways:

1. Respective member entities have held public meetings regarding the rate increase. These boards/councils have received few comments regarding the anticipated rate increases.
2. In general, member entities with higher current rates or higher ongoing collection system commitments have expressed more concern about overall rate impacts but have stated their support for the project.
3. Central Valley's Board made a motion in August of 2016 to a) support the nutrient projects as envisioned in the 2015 Nutrient Feasibility Study, and b) support the 20 year capital improvement plans (CIP).
4. In October of 2016, Central Valley's Board approved the 2017 budget on a vote of 6-1; this budget included a number of 2017 expenditures related to the cogeneration system and nutrient project. Central Valley's Board adopted its 2018 budget 7-0 in favor, including $44 million of capital improvements funded by member entity cash and public bond proceeds.

EFFORTS TO SECURE FINANCING FROM OTHER SOURCES:

CVWRF is not eligible to receive financing through other public financing sources such as CIB and RD. They have gone through the process of obtaining a bond rating and have secured market financing for several other projects currently under construction. They also anticipate applying for and obtaining market financing for other portions of the project not funded by the WQB. Additionally, around $21 Million of the overall project is being financed in cash from member entities.

IMPLEMENTATION SCHEDULE:

Apply to WQB for Funding:	March 4, 2018
WQB Introduction	April 18, 2018
WQB Funding Authorization:	December 3, 2018
Facility Plan Approval:	December 2018
Issue Construction Permit	October 2019
Bid Opening	November 2019
Complete Construction	June 2024
Complete Commissioning	December 2024

FISCAL SUSTAINABILITY REVIEW:

CVWRF has taken a proactive approach to fiscal sustainability. CVWRF recently completed a Condition Assessment and Asset Management Plan (AMP) for its wastewater interceptor piping and treatment plant to identify the renewal needs of the system's 30-year old infrastructure. The AMP identified an estimated $150 million in necessary restorations to CVWRF's collection system piping and treatment facilities that will be needed over the next 20 years to serve the local community through the year 2035. These costs and improvements are in addition to the CIP projects that would be financed with this assistance application. The improvements will replace aging and degraded mechanical and electrical equipment in the treatment plant and rehabilitate

corroded collection system pipes to meet the future needs of our community and ensure compliance with State and Federal regulatory requirements. CVWRF has identified the necessary service rate increases and funding needed to renew their existing infrastructure and has implemented a plan to complete the necessary renewal over the next several years. CVWRF is also undertaking a cogeneration system upgrade to replace and modernize with an energy efficient system.

CVWRF also participates in MWPP self-assessment in which they indicated that they maintain a Plan of Operations, have updated their Capital Facility Plan within the last five years, that they use an Asset Management System, and that they fund sewer system capital improvements annually with sewer revenues at 2% or more of the total replacement cost.

APPLICANT'S CURRENT USER CHARGE:

Central Valley serves seven (7) entities, each with their own rate structure; some charge a monthly base rate, some charge by winter water usage, and some use taxes to supplement their sewer budget, or a combination of these. Staff estimated that the weighted average combined user charge for Central Valley customers is about $21 per ERU per month.

COST ESTIMATE:

Central Valley will complete its 60 percent design in November 2018. The total cost of this phase of the CIP is anticipated to be $177,059,000 including contingency of about 17 percent. A breakdown of these costs follows:

Item	Cost Estimate
Loan Origination Fee	$811,000
Financing Process Costs	150,000
Engineering	$13,000,000
Construction	$141,798,000
Contingency	$21,300,000
Sub-Total	$177,059,000

COST SHARING:

Central Valley is requesting $81,100,000 in financial assistance from the Water Quality Board. Central Valley intends to self-fund the remainder of its $177 million investment through member contributions and public market financing.

Funding Source	Cost Sharing	Percent of Project
CVWSRF Other Funding Sources*	$95,959,000	54.2%
WQB (Loan to Central Valley)	$81,100,000	45.8%
Total	$177,059,000	100%

*Includes $11.14M South Salt Lake portion of the project

ESTIMATED ANNUAL COST FOR SEWER SERVICE

Staff developed cost models to evaluate several financing alternatives for the project. The basic cost model data used in modeling financial alternatives for the project are provided below:

Operations and Maintenance (O&M) – Annual $24,914,000
Existing Debt – Annual $2,633,000
Weighted Median Adjusted Gross Household Income (2016) $40,346
Weighted Maximum Affordable Sewer Rate at 1.4 % MAGI $47.07

The static model financing alternatives considered are given in Attachment 1. The static cost model shows that the weighted required user rates will be below the Board's affordability criterion of 1.4% of MAGI, i.e., a loan is affordable at market rates. Current market rates index (from 11/16/18) are as follows:

US 20-year Treasury Bond[1]	3.35%
US 30-year Treasury Bond[1]	3.25%
MBIS Municipal Bond Index, 20-year[2]	3.524%

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

The bottom of Attachment 1 indicates how each of the member entities is affected by various interest rates.

South Salt Lake City is a member of Central Valley and has a combined sewer rate of $42.00 per month (1.65% MAGI). South Salt Lake City has applied for separate funding from the Water Quality Board for their portion of the Central Valley CIP project due to their increased hardship over other member entities. South Salt Lake requested that the board provide additional subsidy for their portion of the project recognizing this City's hardship. As a 6.29 percent owner of Central Valley WRF, South Salt Lake City's cost for the $177 million project is $11.14 million.

STAFF COMMENTS:

Staff supports the Central Valley Water Reclamation Facility (CVWRF) Upgrade project. It is an important water quality project that will enable CVWRF to meet the new TBPEL requirement, reduce phosphorus and nitrogen discharges to the impaired Jordan River, improve compliance with whole effluent toxicity (WET) requirements in their discharge permit, and provide cost effective and efficient service to the largest population service area in the state.

Staff recommends the Board consider a loan interest rate based on the following discounting factors. The 20-year market loan rate is 3.53 percent based on the MBIS Municipal Bond Index which is 0.26% above the 20-year US Treasury bond. Note that 1 percent interest on an $81,100,000 loan is $8.8 million in interest earned over a 20 year term.

Market Rate (20 year basis)		3.53 %
Discount Factors:	Maximum Discount	Applied Discount
Economic Hardship	3.53 %	--
Other Hardship	1.0 %	--
SRF Programmatic Costs	1.0 %	0.5 %
Fiscal Sustainability Credit	0.5 %	0.5 %
Green Project Reserve	0.5 %	0.5%
Regionalization	0.25 %	0.25 %
Recommended Interest Rate		**1.78%**

Although Central Valley is requesting $81,100,000 in financial assistance from the Water Quality Board, staff has determined that, to continue to support other important water quality projects in the state and maintain positive fund balances through the critical construction period, the board is not able to fully fund this large project. In discussions with the board, Central Valley, and other applicants, the maximum funding available to support the project on Central Valley's schedule is $65,100,000. Central Valley has agreed (in concept) to fund the remainder of this portion of the project as well as their $177 million overall project through member contributions and public market financing.

Funding Source	Cost Sharing	Percent of Project
CVWSRF Other Funding Sources*	$111,959,000	67.8%
WQB (Loan to Central Valley)	$65,100,000	32.2%
Total	$177,059,000	100%

*Includes $11.14M South Salt Lake portion of the project and additional $24 Million Not Funded by The WQB

Central Valley will need to bond for the additional funds on the public market. Assuming the additional funds will be obtained with an interest rate of 3.5 percent, the overall interest rate for CVWRF will increase by 0.19 percent from borrowing the additional $16 million through the market financing package. The resulting overall interest rate for the entire $177 million bond package would become 2.75% instead of 2.56%, were the Board able to fund the requested $81.1 million.

Reducing the interest rate to 1.5% for CVWRF, on the smaller loan, would result in a 2.63% weighted interest rate for their entire financing package. A cost model based on the reduced funding amount is shown in Attachment 2, including a weighted interest rate based on the WQB loan and the increased public financing required. The table below shows a comparison between the requested funding and the funding provided by the reduced WQB funding amount and interest rate.

Financing	WQB Funding @ Int. Rate	Initial Market Funding @ Int. Rate[1]	Additional Market Funding @ Int. Rate[1]	Equivalent 20-year Weighted Interest Rate
Requested	$81,100,000@ 1.78%	$95,959,000@ 3.5%	0@ 3.5%	2.56%
Recommended	$65,100,000@ 1.50%	$95,959,000@ 3.5%	$16,000,000@ 3.5%	2.63%

[1] Note: The calculations presented in this table are based on current market interest rates. DWQ staff recognize that interest rates are currently rising and may be as high as 4 – 5% at the time that CVWRF applies for a market loan.

STAFF RECOMMENDATION:

Staff recommends that the Board authorize funding to Central Valley Water Reclamation Facility **for a loan of $65,100,000 at an interest rate of 1.5% repayable over 20 years,** subject to the following special conditions:

1. The District must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
2. The District must pursue and retain remaining funding necessary to fully implement the project.
3. Central Valley must agree to present its project at a Water Quality Board meeting within one year from completion of construction.

ATTACHMENT 1

Central Valley WRF - Water Quality Board

20 Year Loan Static Cost Model TREATMENT ONLY

Project Costs	Total
Loan Origination Fee	$ 811,000
Financing Process Costs	$ 150,000
Engineering	$ 13,000,000
Construction	$141,798,000
Contingency (~15%)	$ 21,300,000
Total Project Cost:	**$177,059,000**

Current Customer Base & User Charges	
Total ERU's (Projected 2020)	$ 175,630
Weighted Average MAGI (2016):	$ 40,346
Affordable Monthly Rate at 1.4%	$ 47.07
Current Impact Fee	Varies
Current Average Monthly Fee (per ERU)	$ 21.09
Existing O&M expenses Treatment & Collecti	Varies
New O&M expenses Treatment	$ 24,914,308
Existing Sewer Debt Service	Varies

Project Funding	
Cash from member entities	$ 21,104,665
*South Salt Lake Funding	$ 11,137,000
Publicly issued bonds@3.5%	$ 63,717,335
WQB Loan	$ 81,100,000
Total Project Cost:	**$177,059,000**

SSL has a $11,248,000 Request due to $111,000 Loan Origination Fee

Funding Conditions	
Loan Repayment Term:	20
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE

WQB Loan Amount	WQB Loan Interest Rate	Annual WQB Loan Debt Service	WQB Loan Reserve	WQB Debt Service & Loan Reserves	Required other new Debt Service Payments*	Weighted Interest Rate for Project	Existing Debt Payments	Annual Sewer O&M Cost	Total Annual Sewer Cost	Monthly Treatment Cost/ERU	Increase in Cost Per ERU/Month Treatment Only
$ -	0.00%	$ -	$ -	$ -			$ 2,633,217	$ 24,914,308	$ 27,547,525	$ 13.07	
$ 81,100,000	0.00%	$ 4,055,000	$1,013,750	$ 5,068,750	$ 4,483,220	1.62%	$ 2,633,217	$ 24,914,308	$ 37,099,495	$ 17.60	$ 4.53
$ 81,100,000	1.00%	$ 4,494,182	$1,123,546	$ 5,617,728	$ 4,483,220	2.14%	$ 2,633,217	$ 24,914,308	$ 37,648,473	$ 17.86	$ 4.79
$ 81,100,000	1.10%	$ 4,539,565	$1,134,891	$ 5,674,456	$ 4,483,220	2.19%	$ 2,633,217	$ 24,914,308	$ 37,705,201	$ 17.89	$ 4.82
$ 81,100,000	1.25%	$ 4,608,134	$1,152,033	$ 5,760,167	$ 4,483,220	2.27%	$ 2,633,217	$ 24,914,308	$ 37,790,912	$ 17.93	$ 4.86
$ 81,100,000	1.30%	$ 4,631,122	$1,157,780	$ 5,788,902	$ 4,483,220	2.30%	$ 2,633,217	$ 24,914,308	$ 37,819,647	$ 17.94	$ 4.87
$ 81,100,000	1.50%	$ 4,723,729	$1,180,932	$ 5,904,661	$ 4,483,220	2.41%	$ 2,633,217	$ 24,914,308	$ 37,935,407	$ 18.00	$ 4.93
$ 81,100,000	**1.78%**	**$ 4,855,135**	**$1,213,784**	**$ 6,068,919**	**$ 4,483,220**	**2.56%**	**$ 2,633,217**	**$ 24,914,308**	**$ 38,099,664**	**$ 18.08**	**$ 5.01**
$ 81,100,000	2.00%	$ 4,959,810	$1,239,952	$ 6,199,762	$ 4,483,220	2.67%	$ 2,633,217	$ 24,914,308	$ 38,230,508	$ 18.14	$ 5.07
$ 81,100,000	3.27%	$ 5,588,176	$1,397,044	$ 6,985,220	$ 4,483,220	3.37%	$ 2,633,217	$ 24,914,308	$ 39,015,966	$ 18.51	$ 5.44

*3.5% interest rate used for estimating other new debt service

Sewer Bill by Entity Various Interest Rates

Member Entity	MAGI	current monthly Average Bill	current % MAGI	1% Loan New Monthly Average Bill	1% Loan % MAGI	1.5% Loan New Monthly Average Bill	1.5% Loan % MAGI	1.78% Loan New Monthly Average Bill	1.78% Loan % MAGI
Cottonwood I.D.	$ 56,460.00	$ 20.00	0.43%	$ 24.79	0.53%	$ 24.93	0.53%	$ 25.01	0.53%
Granger-Hunter I.D.	$ 34,991.00	$ 24.50	0.84%	$ 29.29	1.00%	$ 29.43	1.01%	$ 29.51	1.01%
Kearns I.D.	$ 34,579.00	$ 30.55	1.06%	$ 35.34	1.23%	$ 35.48	1.23%	$ 35.56	1.23%
Murray City	$ 41,429.00	$ 29.33	0.85%	$ 34.12	0.99%	$ 34.26	0.99%	$ 34.34	0.99%
Mt. Olympus I.D.	$ 35,284.00	$ 15.00	0.51%	$ 19.79	0.67%	$ 19.93	0.68%	$ 20.01	0.68%
Taylorsville-Bennion I.D.	$ 39,029.00	$ 19.36	0.60%	$ 24.15	0.74%	$ 24.29	0.75%	$ 24.37	0.75%
Weighted Average	40,346.03	21.09	0.65%	25.88	0.80%	26.01	0.81%	26.09	0.81%

Note: South Salt Lake's MAGI is covered in there Board Packet based on their separate financing package.

ATTACHMENT 2

Central Valley WRF - Water Quality Board

20 Year Loan Static Cost Model TREATMENT ONLY Reduced WQB Loan

Project Costs	Total
Loan Origination Fee	$ 651,000
Financing Process Costs	$ 310,000
Engineering	$ 13,000,000
Construction	$141,798,000
Contingency (~15%)	$ 21,300,000
Total Project Cost:	**$177,059,000**

Current Customer Base & User Charges	
Total ERU's (Projected 2020)	$ 175,630
Weighted Average MAGI (2016):	$ 40,346
Affordable Monthly Rate at 1.4%	$ 47.07
Current Impact Fee	Varies
Current Average Monthly Fee (per ERU)	$ 21.09
Existing O&M expenses Treatment & Collecti	Varies
New O&M expenses Treatment	$ 24,914,308
Existing Sewer Debt Service	Varies

Project Funding	
Cash from member entities	$ 21,104,665
*South Salt Lake Funding	$ 11,137,000
Publicly issued bonds@3.5%	$ 79,717,335
WQB Loan	$ 65,100,000
Total Project Cost:	**$177,059,000**

SSL has a $11,248,000 Request due to $111,000 Loan Origination Fee

Funding Conditions	
Loan Repayment Term:	20
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE

WQB Loan Amount	WQB Loan Interest Rate	Annual WQB Loan Debt Service	WQB Loan Reserve	WQB Debt Service & Loan Reserves	Required other new Debt Service Payments*	Weighted Interest Rate for Project	Existing Debt Payments	Annual Sewer O&M Cost	Total Annual Sewer Cost	Monthly Treatment Cost/ERU	Increase in Cost Per ERU/Month Treatment Only
$ -	0.00%	$ -	$ -	$ -			$ 2,633,217	$ 24,914,308	$ 27,547,525	$ 13.07	
$ 65,100,000	0.00%	$ 3,255,000	$ 813,750	$ 4,068,750	$ 5,608,998	2.01%	$ 2,633,217	$ 24,914,308	$ 37,225,273	$ 17.66	$ 4.59
$ 65,100,000	1.00%	$ 3,607,537	$ 901,884	$ 4,509,421	$ 5,608,998	2.42%	$ 2,633,217	$ 24,914,308	$ 37,665,944	$ 17.87	$ 4.80
$ 65,100,000	1.10%	$ 3,643,966	$ 910,992	$ 4,554,958	$ 5,608,998	2.46%	$ 2,633,217	$ 24,914,308	$ 37,711,480	$ 17.89	$ 4.82
$ 65,100,000	1.30%	$ 3,717,460	$ 929,365	$ 4,646,825	$ 5,608,998	2.54%	$ 2,633,217	$ 24,914,308	$ 37,803,348	$ 17.94	$ 4.87
$ 65,100,000	1.35%	$ 3,735,965	$ 933,991	$ 4,669,957	$ 5,608,998	2.56%	$ 2,633,217	$ 24,914,308	$ 37,826,479	$ 17.95	$ 4.88
$ 65,100,000	**1.50%**	**$ 3,791,797**	**$ 947,949**	**$ 4,739,747**	**$ 5,608,998**	**2.63%**	**$ 2,633,217**	**$ 24,914,308**	**$ 37,896,269**	**$ 17.98**	**$ 4.91**
$ 65,100,000	1.78%	$ 3,897,279	$ 974,320	$ 4,871,598	$ 5,608,998	2.75%	$ 2,633,217	$ 24,914,308	$ 38,028,121	$ 18.04	$ 4.97
$ 65,100,000	2.00%	$ 3,981,302	$ 995,326	$ 4,976,628	$ 5,608,998	2.84%	$ 2,633,217	$ 24,914,308	$ 38,133,150	$ 18.09	$ 5.02
$ 65,100,000	3.27%	$ 4,485,700	$1,121,425	$ 5,607,125	$ 5,608,998	3.40%	$ 2,633,217	$ 24,914,308	$ 38,763,648	$ 18.39	$ 5.32

*3.5% interest rate used for estimating other new debt service

Note: It should be noted that the reduced "Increase in cost per ERU/Month…" is lower in this scenario due to the decrease in Debt Service and Loan reserve funds however, this is a temporary reduction in cost that after the 6 year reserve is funded, will be a net increase in cost per ERU/month.

Sewer Bill by Entity Various Interest Rates

Member Entity	MAGI	current monthly Average Bill	current % MAGI	1% Loan New Monthly Average Bill	1% Loan % MAGI	1.5% Loan New Monthly Average Bill	1.5% Loan % MAGI	1.78% Loan New Monthly Average Bill	1.78% Loan % MAGI
Cottonwood I.D.	$ 56,460.00	$ 20.00	0.43%	$ 24.80	0.53%	$ 24.91	0.53%	$ 24.97	0.53%
Granger-Hunter I.D.	$ 34,991.00	$ 24.50	0.84%	$ 29.30	1.00%	$ 29.41	1.01%	$ 29.47	1.01%
Kearns I.D.	$ 34,579.00	$ 30.55	1.06%	$ 35.35	1.23%	$ 35.46	1.23%	$ 35.52	1.23%
Murray City	$ 41,429.00	$ 29.33	0.85%	$ 34.13	0.99%	$ 34.24	0.99%	$ 34.30	0.99%
Mt. Olympus I.D.	$ 35,284.00	$ 15.00	0.51%	$ 19.80	0.67%	$ 19.91	0.68%	$ 19.97	0.68%
Taylorsville-Bennion I.D.	$ 39,029.00	$ 19.36	0.60%	$ 24.16	0.74%	$ 24.27	0.75%	$ 24.33	0.75%
Weighted Average	40,346.03	21.09	0.65%	25.89	0.80%	26.00	0.81%	26.06	0.81%

Note: South Salt Lake's MAGI is covered in their Board Packet based on their separate financing package.

Date Received: Sept. 26, 2018
Date to be presented to the WQB: December 3, 2018

WATER QUALITY BOARD
FEASIBILITY REPORT FOR WASTEWATER TREATMENT PROJECT
AUTHORIZATION

APPLICANT:	Provo City 351 West Center Provo, UT 84601 Telephone: (801) 852-7105
PRESIDING OFFICIAL:	Mayor Michelle Kaufusi
TREASURER/RECORDER:	Dan Follett/Amanda Ercanbrack
CONSULTING ENGINEER:	Cory Christiansen, P.E. (for planning) Waterworks Engineering 672 West 220 South, Bldg A Pleasant Grove, UT 84062 (801) 785-4105
BOND COUNSEL:	Eric Hunter Chapman and Cutler 215 South State Street Salt Lake City, UT 84111 (801) 536-1441

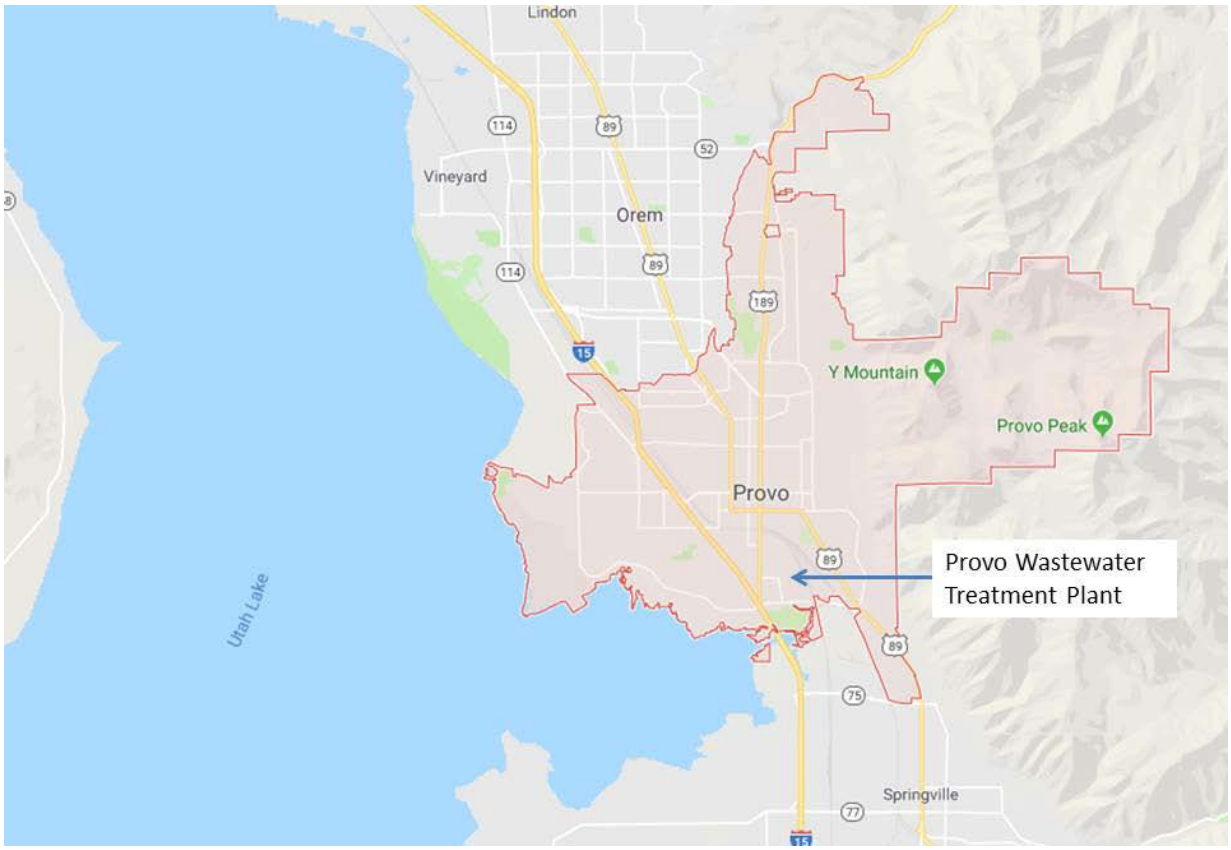
APPLICANT'S REQUEST:

Provo City is requesting a construction loan from the Utah Water Quality Board in the amount of $121,262,000 for construction of a new water reclamation plant.

APPLICANT'S LOCATION:

Provo City is located in Utah County on the eastern shore of Utah Lake. Provo's current treatment plant is located on the southern border near Provo Bay at 1685 South East Bay Boulevard.

MAP OF APPLICANT'S LOCATION



BACKGROUND:

The Provo City water reclamation facility treats an average flow of 12 MGD and serves a population of 116,868. The facility is designed for an average flow of 21 MGD and a design equivalent population of 160,000. The current treatment plant was built in the 1950's and was upgraded in 1978. In 1998, the tertiary filters were rehabilitated and permanent dechlorination facilities were operational in 1999.

The City has determined that the existing treatment plant would require major upgrades to maintain operations and has determined that a new treatment plant would best serve the City's long-term needs. Building a new plant with best available technology would meet not only the State's phosphorus (TBPEL) regulations but also anticipated future regulations. Seismic safety and other concerns with the old infrastructure would also be addressed with this new facility. The City is also considering aquifer recharge or other reuse of its treated effluent. Utah County is one of the fastest growing parts of the state and Provo City aims to have updated infrastructure in place to accommodate this growth.

The City also owns and operates its own wastewater collection system and maintains biosolids, pretreatment, and multi-sector stormwater permits for the water reclamation facility and a permit

for the City's municipal separate storm sewer system (MS4) program.

Provo City is currently in compliance with all UPDES permits associated with the Provo City Water Reclamation Facility including discharge, biosolids, pretreatment, and storm water. DWQ is working with the City to address several deficiencies in the municipal separate storm sewer system (MS4) program.

PROJECT NEED:

Provo currently discharges to Mill Race which flows to Provo Bay in Utah Lake. Utah Lake is listed on the 2016 Integrated Report: Lakes and Reservoirs 305(b) and 303(d) for harmful algal blooms, total dissolved solids, total phosphorus, and PCB in fish tissue. In addition, Provo Bay is listed for pH, total phosphorus, total ammonia and PCB in fish tissue. The improvement in effluent water quality from this project would significantly improve the water quality discharged from the reclamation facility and in turn the water quality of Provo Bay and Utah Lake.

PROJECT DESCRIPTION:

Provo City is proposing to construct a new treatment plant, replacing its existing works. The project will include Administration/Operations building, Influent pumping, Screening and grit removal, Primary treatment (dependent on selection of secondary process), Secondary treatment including biological nutrient removal, Filtration, UV disinfection, Solids digestion, Solids thickening and dewatering, Phosphorus and ammonia side stream treatment (dependent on digestion and dewatering processes), Ancillary support structures. The City also proposes to construct 3 miles of new interceptor sewer / force main for improved service to the City's growing west side. Provo continues to engage other nearby cities to fully evaluate regionalization opportunities.

The proposed project is Phase 1 of a two phase program being planned by the City. The City is currently soliciting proposals to engage a design team for Phase 1. Phase 2 addresses long term, buildout conditions and needs.

ALTERNATIVES EVALUATED:

Alternative	Description	Estimated Cost
1	Do Nothing	Not a Feasible Alternative
2	Upgrade Current Plant	$59,000,000
3	New Facility – Phased Implementation	$150,000,000
	New Facility Phase II (2031 construction)	$90,000,000
4	New Plant 24 mgd	$224,500,000

Provo City Council has directed its staff to pursue construction of a new facility with phased implementation (Alternative 3). The City continues to evaluate its options within this alternative to achieve the most cost effective long term solution for its growth and water quality protection.

POSITION ON PROJECT PRIORITY LIST:

This project is ranked 2nd out of 10 projects on the Wastewater Treatment Project Priority List.

POPULATION GROWTH:

There are an estimated 30,490 ERUs in Provo City's service area. The following populations for Provo City are taken from Utah Governor's Office of Management and Budget (GOMB) and Zion Public Finance.

Year	Population
2016	116,868
Estimated 2020	138,143
Estimated 2035	164,786
Estimated 2050	190,000

PUBLIC PARTICIPATION AND DEMONSTRATION OF PUBLIC SUPPORT:

Provo City Council has held work sessions and public meetings to discuss the proposed project and has resolved to advance the project and request financial assistance from the Water Quality Board.

EFFORTS TO SECURE FINANCING FROM OTHER SOURCES:

Provo City does not qualify for Community Impact Board (CIB) or US Rural Development funding. Provo City is investigating funding the additional needed funding for their aquifer storage and recharge project from State of Utah Division of Drinking Water.

IMPLEMENTATION SCHEDULE:

The proposed schedule for implementation of the Phase 1 construction project is as follows:

WQB Introduction	October 24, 2018
WQB Funding Authorization:	December 03, 2018
Start Construction	2020
Complete Construction	Fall 2023

FISCAL SUSTAINABILITY REVIEW:

Provo City participates in MWPP self-assessment and is pursuing updating their Capital Facility Plan and doing an impact fee study. The anticipated cost of the project to system users will be among the highest in the state if not the highest and clearly exceeding the Board's 1.4 percent MAGI threshold. The City has about $1.03 billion in available general obligation (GO) borrowing capacity and only about $35 million in outstanding GO debt.

APPLICANT'S CURRENT USER CHARGE:

The 2016 median adjusted gross income (MAGI) for Provo City is $28,606, which is 35 percent lower that the state average of $44,268. Based on the Board's affordability criterion of 1.4% MAGI, the maximum affordable sewer bill for Provo City is $33.37.

Provo City uses a progressive rate structure wherein sewer service fees are calculated based on a base rate plus a winter-time water usage commodity charge. Based on their FY2017 Comprehensive Annual Report sewer revenues and 30,490 ERU, the City's current average sewer bill is about $25.98 per month per ERU or 1.09 percent of MAGI. Effective in FY2018, the City increased its base rate 19 percent and its commodity charge 36 percent for residential users. This increase will result in an average sewer bill of roughly $33.12 per month or 1.39 percent of MAGI. Provo is currently conducting an impact fee study; the last impact fee study was completed in 2013.

Provo City expects to again increase rates in FY2019 to an average of $48.13 per month or 2.02 percent of MAGI. At current cost of operation, the City would generate $10 million per year for current and future capital improvement projects.

COST ESTIMATE:

The estimated cost of Provo City's new treatment plant construction is outlined in the following table.

Item	**Funded Project Cost**
Legal/Bonding	$ 50,000
DWQ Loan Origination	$ 1,212,000
Engineering, CMS	$ 9,100,000
Construction – Treatment Plant	$ 81,200,000
Construction - Pump Stations	$ 6,000,000
Construction - Interceptor Sewers	$ 27,000,000
Collection System Rehab	$ 6,000,000
Contingency	$ 20,700,000
Total	**$ 151,262,000**

In addition, to the described project, Provo will have an additional Phase II of the project in approximately 2031 for an additional $90,000,000. Provo hopes to pay for this Phase II using a pay as you go model and save capital to pay for this with cash reserves generated between 2025 and 2031.

COST SHARING:

Funding Source	Cost Sharing	Percent of Project
Local Contribution (cash)	$ 30,000,000	20%
WQB Loan	$ 121,262,000	80%
Total	$ 151,262,000	100%

ESTIMATED ANNUAL COST FOR SEWER SERVICE:

Staff developed cost models to evaluate several financing alternatives for the project. The basic cost model data used in modeling financial alternatives for the project are provided below:

Operations and Maintenance (O&M) – Annual $10,040,000
Existing Debt – Annual $660,000
Weighted Median Adjusted Gross Household Income (2016) $28,606
Weighted Maximum Affordable Sewer Rate at 1.4 % MAGI $33.37

The static model financing alternatives considered are given in Attachment 1. The static cost model shows that the required user rates will be above the Board's affordability criterion of 1.4% of MAGI. Current market rates index as follows:

US 20-year Treasury Bond[1]	3.35%
US 30-year Treasury Bond[1]	3.25%
MBIS Municipal Bond Index, 20-year[2]	3.524%

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

Staff prepared a cost model for evaluation of possible loan terms and affordability. Static Model 1 (Attachment 1) presents a conventional 20 years loan approach that is typical of what the Board usually sees. This model shows that for the proposed $121 million loan, average user rates would exceed 2 percent of the 2016 MAGI.

The City has proposed a financing plan under which it will increase sewer rates to annually generate capital improvement revenues. These capital improvement funds will be used to accelerate loan repayments as well as to self-fund asset management and ongoing capital improvements through Phase 2 of the City's overall capital facilities plan. This financing plan from the City is based on a 15 year loan term and a $13 million per year annual capital expenditures cost item. In this financing plan the monthly average sewer rates would exceed $91.50 per month per user or 3.8 percent of MAGI.

Both of these financing plans would require user rates well above the Board's affordability criterion of 1.4% of MAGI. Based on this, Provo City has requested the Board be as aggressive as possible with a low interest rate to help the project be affordable.

STAFF COMMENTS:

Staff supports the Provo treatment plant construction project. It is an important water quality project that will enable Provo to meet and exceed the new TBPEL requirement, reduce phosphorus and nitrogen discharges to the impaired Utah Lake, and provide cost effective and efficient service to a large and growing population service area in the state.

Staff recommends the Board consider a loan interest rate based on the following discounting factors. The 20-year market loan rate is 3.53 percent based on the MBIS Municipal Bond Index which is 0.26% above the 20-year US Treasury bond. Note that 1 percent interest on a $121,000,000 loan is $13.1 million in interest earned over a 20 year term.

Market Rate (20 year basis)		3.53 %
Discount Factors:	Maximum Discount	Recommended Discount
Economic Hardship	3.53 %	2.23 %
Other Hardship	1.0 %	--
SRF Programmatic Costs	1.0 %	0.5 %
Fiscal Sustainability Credit	0.5 %	0.25 %
Green Project Reserve	0.5 %	--
Regionalization	0.25 %	--
Recommended Interest Rate		**0.55%**

Although Provo City is requesting $121,262,000 in financial assistance from the Water Quality Board, staff has determined that, to continue to support other important water quality projects in the state and maintain positive fund balances through the critical construction period, the board is not able to fully fund this large project. In discussions with the board, Provo City, and other applicants, the maximum funding available to support the project on Provo's schedule is $77,800,000. Provo City has agreed (in concept) to fund the remainder of this portion of the project, as well as the remainder of the $151 million phase of the project through public market and other financing.

Funding Source	Cost Sharing	Percent of Project
Provo Other Funding Sources	$73,462,000	48.6%
WQB (Loan to Provo)	$75,800,000	50.1%
Principal Forgiveness	$2,000,000	1.3%
Total	$151,262,000	100%

Provo City will need to bond for the additional funds on the public market. Assuming the additional funds will be obtained with an interest rate of 3.5 percent, the overall interest rate for for Provo City will increase by 0.87% to cover the added cost for the $43 million that is being added to the market financing package. The resulting weighted interest rate for the entire $151 million bond package would become 2.04% instead of 1.17%, were the Board able to fund the requested $121 million at 0.55%.

Reducing the interest rate to 0.5% and including $2,000,000 of principal forgiveness for Provo on the reduced loan would result in a 1.90% weighted interest rate for their entire financing package. A cost model based on the reduced funding amount is shown in Attachment 2, including a weighted interest rate based on the WQB loan and increase in market financing required.

The table below shows a comparison between the requested funding and the funding provided by the reduced WQB funding amounts.

Financing	WQB Funding @ Int. Rate	Initial Market Funding @ Int. Rate[2]	Additional Market Funding @ Int. Rate[2]	Weighted Interest Rate
Requested	$121,361,000 @ 0.55%	$30,000,000 @ 3.5%	$0 @ 3.5%	1.17%
Recommended	$75,800,000 @ 0.50% PF[1] $2,000,000	$30,000,000 @ 3.5%	$43,128,000 @ 3.5%	1.90%

[1]PF – Principal Forgiveness
[2] Note: The calculations presented in this table are based on current market interest rates. DWQ staff recognize that interest rates are currently rising and may be as high as 4 – 5% at the time that Provo City applies for a market loan.

STAFF RECOMMENDATION:

Staff recommends that the Board authorize funding to Provo **of $2,000,000 in principal forgiveness and a loan of $75,800,000 at an interest rate of 0.5% repayable over 20 years with an adjusted amortization schedule with principal payments not to exceed $50,000/year until 2027, and then amortized over the remaining term of the loan.** Subject to the following special conditions:

1. Provo must agree to participate annually in the Municipal Wastewater Planning Program (MWPP).
2. Provo must pursue and retain remaining funding necessary to fully implement the project.
3. Provo must develop and implement an asset management program that is consistent with EPA's Fiscal Sustainability Plan guidance.

Attachments: Provo City Static Cost Model 1 & 2
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DWQ-2018-012980
File: Provo City, Admin, Section 1

Provo City - Authorization
December 3, 2018
Attachment 1

ATTACHMENT 1

Provo - Water Quality Board

20 Year Loan Static Cost Model

Project Costs		Total
Loan Origination Fee	$	1,211,000
Financing Process Costs	$	150,000
Engineeernig	$	9,100,000
Construction	$	120,200,000
Contingency (~15%)	$	20,700,000
Total Project Cost:	**$**	**151,361,000**

Current Customer Base & User Charges		
Total ERU's (Projected 2020)	$	30,490
Weighted Average MAGI (2016):	$	28,606
Affordable Monthly Rate at 1.4%	$	33.37
Current Impact Fee		
Current Average Monthly Fee (per ERU)	$	48.13
Existing O&M expenses Treatment & Collection	$	10,040,000
New O&M expenses Treatment	$	9,740,000
Existing Sewer Debt Service	$	660,000

Project Funding		
Publicly issued bonds @ 3.5%	$	30,000,000
Additional bonds @ 3.5%	$	-
WQB Loan	$	121,361,000
Principal Forgiveness		-
Total Project Cost:	**$**	**151,361,000**

Funding Conditions	
Loan Repayment Term:	20
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE

WQB Loan Amount	WQB Loan Interest Rate	Annual WQB Loan Debt Service	WQB Loan Reserve	WQB Debt Service & Loan Reserves	Required other new Debt Service Payemnts*	Weighted Interest Rate for Project	Existing Debt Payments	Annual Sewer O&M Cost	Total Annual Sewer Cost	Monthly Treatment Cost/ERU	Sewer Cost as a % of MAGI
$ -		$ -	$ -	$ -			$ 660,000	$ 9,740,000	$ 10,400,000	$ 28.42	1.19%
$ 121,361,000	0.00%	$ 6,068,050	$ 1,517,013	$ 7,585,063	$ 2,110,832	0.75%	$ 660,000	$ 9,740,000	$ 20,095,895	$ 54.92	2.30%
$ 121,361,000	0.25%	$ 6,228,596	$ 1,557,149	$ 7,785,745	$ 2,110,832	0.94%	$ 660,000	$ 9,740,000	$ 20,296,577	$ 55.47	2.33%
$ 121,361,000	0.55%	**$ 6,424,565**	**$ 1,606,141**	**$ 8,030,707**	$ 2,110,832	1.17%	**$ 660,000**	**$ 9,740,000**	**$ 20,541,539**	**$ 56.14**	**2.36%**
$ 121,361,000	0.80%	$ 6,590,622	$ 1,647,656	$ 8,238,278	$ 2,110,832	1.36%	$ 660,000	$ 9,740,000	$ 20,749,110	$ 56.71	2.38%
$ 121,361,000	1.05%	$ 6,759,165	$ 1,689,791	$ 8,448,956	$ 2,110,832	1.56%	$ 660,000	$ 9,740,000	$ 20,959,788	$ 57.29	2.40%
$ 121,361,000	1.30%	$ 6,930,179	$ 1,732,545	$ 8,662,724	$ 2,110,832	1.75%	$ 660,000	$ 9,740,000	$ 21,173,556	$ 57.87	2.43%
$ 121,361,000	1.55%	$ 7,103,651	$ 1,775,913	$ 8,879,564	$ 2,110,832	1.95%	$ 660,000	$ 9,740,000	$ 21,390,396	$ 58.46	2.45%
$ 121,361,000	1.80%	$ 7,279,564	$ 1,819,891	$ 9,099,455	$ 2,110,832	2.14%	$ 660,000	$ 9,740,000	$ 21,610,287	$ 59.06	2.48%
$ 121,361,000	2.05%	$ 7,457,901	$ 1,864,475	$ 9,322,376	$ 2,110,832	1.64%	$ 660,000	$ 9,740,000	$ 21,833,209	$ 59.67	2.50%

*3.5% interest rate used for estimating other new debt service

ATTACHMENT 2

Provo - Water Quality Board

20 Year Loan Static Cost Model

Project Costs		Total
Loan Origination Fee	$	778,000
Financing Process Costs	$	150,000
Engineeernig	$	9,100,000
Construction	$	120,200,000
Contingency (~15%)	$	20,700,000
Total Project Cost:	**$**	**150,928,000**

Current Customer Base & User Charges		
Total ERU's (Projected 2020)	$	30,490
Weighted Average MAGI (2016):	$	28,606
Affordable Monthly Rate at 1.4%	$	33.37
Current Impact Fee		
Current Average Monthly Fee (per ERU)	$	48.13
Existing O&M expenses Treatment & Collection	$	10,040,000
New O&M expenses Treatment	$	9,740,000
Existing Sewer Debt Service	$	660,000

Project Funding		
Publicly issued bonds @ 3.5%	$	30,000,000
Additional bonds @ 3.5%	$	43,128,000
WQB Loan	$	75,800,000
Principal Forgiveness		2,000,000
Total Project Cost:	**$**	**150,928,000**

Funding Conditions	
Loan Repayment Term:	20
Reserve Funding Period:	6

ESTIMATED COST OF SEWER SERVICE

WQB Loan Amount	WQB Loan Interest Rate	Annual WQB Loan Debt Service	WQB Loan Reserve	WQB Debt Service & Loan Reserves	Required other new Debt Service Payemnts*	Weighted Interest Rate for Project	Existing Debt Payments	Annual Sewer O&M Cost	Total Annual Sewer Cost	Monthly Treatment Cost/ERU	Sewer Cost as a % of MAGI
$ -		$ -	$ -	$ -			$ 660,000	$ 9,740,000	$ 10,400,000	$ 28.42	1.19%
$ 75,800,000	0.00%	$ 3,790,000	$ 947,500	$ 4,737,500	$ 5,145,365	1.67%	$ 660,000	$ 9,740,000	$ 20,282,865	$ 55.44	2.33%
$ 75,800,000	0.25%	$ 3,890,274	$ 972,569	$ 4,862,843	$ 5,145,365	1.79%	$ 660,000	$ 9,740,000	$ 20,408,207	$ 55.78	2.34%
$ 75,800,000	0.50%	$ **3,992,117**	$ **998,029**	$ **4,990,146**	$ 5,145,365	1.90%	$ **660,000**	$ **9,740,000**	$ **20,535,511**	$ **56.13**	**2.35%**
$ 75,800,000	0.75%	$ 4,095,522	$ 1,023,880	$ 5,119,402	$ 5,145,365	2.02%	$ 660,000	$ 9,740,000	$ 20,664,767	$ 56.48	2.37%
$ 75,800,000	1.00%	$ 4,200,481	$ 1,050,120	$ 5,250,601	$ 5,145,365	2.13%	$ 660,000	$ 9,740,000	$ 20,795,966	$ 56.84	2.38%
$ 75,800,000	1.25%	$ 4,306,986	$ 1,076,746	$ 5,383,732	$ 5,145,365	2.25%	$ 660,000	$ 9,740,000	$ 20,929,097	$ 57.20	2.40%
$ 75,800,000	1.50%	$ 4,415,027	$ 1,103,757	$ 5,518,783	$ 5,145,365	2.37%	$ 660,000	$ 9,740,000	$ 21,064,148	$ 57.57	2.42%
$ 75,800,000	1.75%	$ 4,524,595	$ 1,131,149	$ 5,655,744	$ 5,145,365	2.49%	$ 660,000	$ 9,740,000	$ 21,201,108	$ 57.95	2.43%
$ 75,800,000	2.00%	$ 4,635,679	$ 1,158,920	$ 5,794,599	$ 5,145,365	2.61%	$ 660,000	$ 9,740,000	$ 21,339,964	$ 58.33	2.45%

*3.5% interest rate used for estimating other new debt service