KELLER ASSOCIATES

City of McCammon

Wastewater Facilities Planning Study

October 2022
KA Project No. 219128

GROWING POSSIBILITIES

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EXECUTIVE SUMMARY

The City of McCammon's wastewater system provides collection, treatment, and beneficial reuse of the City's treated wastewater. Although most of the collection system was constructed in the 1970's, it remains in relatively good condition. In the mid to late 2000's, a new lift station, pressure main, three new treatment lagoons, and a land application system were added. The last facility planning study was completed prior to these improvements, so an update was recommended. Additionally, seepage testing of the wastewater lagoons was completed in 2018. Although the three new treatment lagoons passed, the old winter storage lagoon failed the seepage test. The purpose of this study is to determine if there are additional needs for the City's wastewater system. In addition to identifying the needs, this planning study provides a roadmap to meet the expected needs.

The facility planning study presents the recent trends in the wastewater system, documents known conditions, and identifies deficiencies. This facility plan also evaluates the benefits and costs of improvement alternatives and makes recommendations for financial plans to support those improvements. The facility plan was partially funded by a grant from the Idaho Department of Environmental Quality (DEQ) and the remaining funding came from the City of McCammon.

Chapter 1 overviews the project location, the environmental considerations, and the population growth forecast. Chapter 2 describes the existing system including the condition, financial status, and classification of the collection system and wastewater treatment plant (WWTP). Chapter 3 outlines the capacity and performance of the collection system and WWTP. Chapter 4 outlines the improvements, including the environmental impacts and sustainability considerations, and presents the capital improvement plan including possible funding sources.

ES.1 PLANNING CRITERIA

City-defined goals and objectives, regulatory requirements, and engineering best practices formed the basis for evaluation in this facility planning study. Applicable regulatory requirements include the City's reuse permit and State Water Quality Standards. Additional discussion of planning criteria is included in Chapter 1.

ES.2 PLANNING CONDITIONS

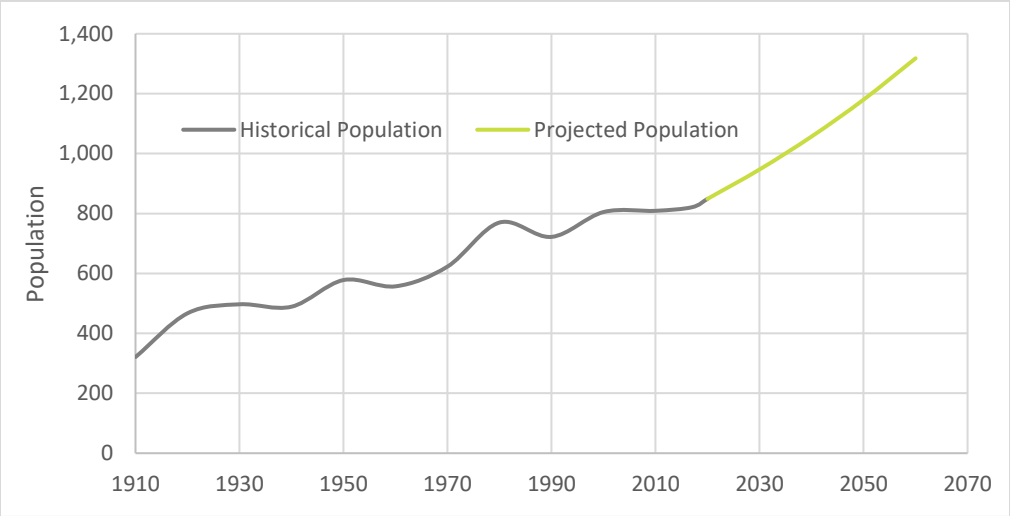
Study Area and Land Use

The service area is bounded by the City limits. The WWTP is located on the east side of the City near the Portneuf River. The topography, floodplains, climatological data, groundwater data, soils, land use, zoning, and surface water are discussed in Chapter 1. The City is surrounded by farmland.

Demographics

The City of McCammon has experienced gradual population growth, for instance, on average, the City has maintained approximately 0.7% growth between 1950 and 2010. Recently in the last decade, Bannock County has experienced 6.0% growth. For the purposes of this study, the City selected a growth rate of 1.1% for future populations, consistent with the growth rate that was assumed in the Water Facilities Planning Study that was completed in March 2021. Figure ES-1 illustrates the historical and future populations.

FIGURE ES-1 HISTORICAL AND PROJECTED POPULATIONS



Wastewater Flows

The City of McCammon's wastewater flows are not easily measured as there are no flow meters in the collection system. By using the water balance method, the planning study estimated an annual average daily flow for the wastewater system. Using Ten States Standards and the Water Environment Federation, Manual of Practice No. 8, peaking factors were also estimated for use in this evaluation. The projected planning flow rates in million gallons per day (MGD) are shown in Table ES-1.

TABLE ES-1 INFLUENT FLOW ESTIMATES

Year	Service Population/EDU's	AADF (MGD)	MMF (MGD)	PDF (MGD)	PHF (MGD)
2020	779/293	0.115	0.167	0.299	0.446
2040	970/365	0.144	0.209	0.374	0.547
2060	1,209/455	0.179	0.260	0.465	0.671

Wastewater Composition

Similar to the flows, without data, industry-standard values were assumed for the influent five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), total Kjeldahl nitrogen (TKN), and total phosphorus. The influent loadings (pounds per day) to the WWTP are discussed further in Chapter 1.

ES.3 EXISTING FACILITY ASSESSMENT

The wastewater collection system includes about 5.2 miles of 8-inch concrete and PVC gravity sewer pipe, 0.4 miles of concrete 10-inch gravity sewer pipe, 1.7 miles of 6-inch PVC and cast-iron pressure sewer, and 0.4 miles of 8-inch PVC pressure sewer. About 3,000 feet of the collection system was cleaned and inspected as part of the study, and the only issues noted in the video reports were instances of roots at pipe joints and services; exposed aggregate was not noted.

The City has five lift stations. Field observation of the five lift stations was performed to evaluate their condition. In general, the lift station structures appear to be in good condition. Lift Stations 1 and 2 were upgraded in 2019-2020, respectively, and Lift Station 5 was installed in 2006-2007. All three are in good condition. Lift Station 3 is original and needs an upgrade similar to the upgrade on Lift Stations 1 and 2. It is anticipated this project will be completed in 2022. Similarly, Lift Station 4 is older and does not have sufficient capacity for the planning horizon.

Wastewater treatment includes two aerated partially mixed lagoons (Cells 1 and 2), a facultative lagoon (Cell 3), a winter storage lagoon, chlorine disinfection, a land application pump, and land application area with wheel line irrigation system. Cells 1, 2, and 3 are lined with 60-mil thick HDPE while the Winter Storage Lagoon is clay-lined. A seepage test in 2018 showed Cells 1, 2, and 3 were able to meet the allowable seepage requirement; however, the Winter Storage Lagoon was leaking at a rate of 0.362 inches per day, which is above the maximum allowable seepage of 0.25 inches per day. A letter dated December 28, 2018, from the DEQ informed the City that corrective measures would need to be taken in order to bring the seepage rate to acceptable levels. Once the lagoon is relined, the Winter Storage Lagoon volume will be insufficient to hold the winter flows.

Solids in the aerated lagoons have not been removed, and based on an evaluation in 2020, the estimated sludge depths range from 14 to 20 inches in Cell 1. The biosolids need to be removed to maximize the treatment capacity of the lagoon. Additionally, the aeration system in the aerated lagoons is also at capacity. The City has observed a large number of rags or other debris in the wastewater as well that causes clogs in the WWTP components, including the aerators. Currently, there is not a headworks screening system to remove this debris. There is also no backup generator for the aerators and no SCADA system or means to provide the operator with alarms.

The land application systems, including transfer pump (not currently being used), land application pump, disinfection system, pipeline, and wheel line irrigation system, are in good condition. Expansion of the land application will be needed during the planning period. The site could be leveled and ditch and pipe could be relocated to allow for expanded use of the site. Alfalfa is commonly grown on the land application field, but recent nitrogen uptake has been extremely low meaning nitrogen uptake must improve, or even more land will be needed.

ES.4 CAPITAL IMPROVEMENT PLAN

The main result from this wastewater facilities planning study was a Capital Improvement Plan (CIP) to guide the City's wastewater-related decisions. The CIP shown in Table ES-2 is a prioritized list of projects to address the wastewater system deficiencies. The costs shown in the CIP are planning-level estimates (Class 5 cost opinion by the Association for the Advancement of Cost Engineering) and can vary depending on market conditions. It is recommended that Priority 1 items be implemented in the next five years, and the timeline for the Priority 2 improvements should be updated as growth dictates and budget allows. An estimated schedule for the next 5 years (including this year) is shown in Table ES-3.

TABLE ES-2 CAPITAL IMPROVEMENT PLAN

ID#	Improvement Item	Purpose(s)	Total Estimated Cost (2022)
Priority 1 Improvements			
CS 1.1	Lift Station No. 3	Upgrade Old Lift Station	$ 313,000
CS 1.2	Portable Generator	Provide Backup Power for Lift Stations	$ 65,000
CS 1.3	Sewer Repairs	Repair/Replace Problem Areas	$ 1,000,000
CS 1.4	Lift Station No. 4	Provide Capacity/Update to Current Codes	$ 509,000
TP 1.1	Influent Screen and Flow Measurement	Protect Equipment and Measure Flow	$ 1,000,000
TP 1.2	Biosolids and Aeration	Provide Capacity	$ 500,000
TP 1.3	Generator and SCADA	Provide Backup Power for WWTP and Alarms	$ 410,000
TP 1.4	Winter Storage Lagoon and Fence	Add Capacity and Protect Public	$ 2,050,000
TP 2.1	Land Application	Provide Additional Capacity	$ 205,000
	Total Priority 1 Improvements		**$ 6,052,000**
TOTAL WASTEWATER IMPROVEMENTS COSTS			**$ 6,052,000**

The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in 2022 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from

TABLE ES-3 PRIORITY 1 CIP SCHEDULE

ID#	Item	Cost	Opinion of Probable Costs (2022 Dollars)		
			2022	2023	2024
Priority 1 Improvements (2020-2025)					
CS 1.1	Lift Station No. 3	$ 313,000	$ 313,000		
CS 1.2	Portable Generator	$ 65,000		$ 65,000	
CS 1.3	Sewer Repairs	$ 1,000,000		$ 100,000	$ 900,000
CS 1.4	Lift Station No. 4	$ 509,000		$ 50,000	$ 459,000
TP 1.1	Influent Screen and Flow Measurement	$ 1,000,000		$ 500,000	$ 500,000
TP 1.2	Biosolids and Aeration	$ 500,000		$ 50,000	$ 450,000
TP 1.3	Generator and SCADA	$ 410,000		$ 41,000	$ 369,000
TP 1.4	Winter Storage Lagoon and Fence	$ 2,050,000		$ 1,025,000	$ 1,025,000
TP 2.1	Land Application	$ 205,000		$ 20,000	$ 185,000
Total (rounded)		**$ 6,052,000**	**$ 313,000**	**$ 1,851,000**	**$ 3,888,000**

ES.5 IMPLEMENTATION PLAN

The City would prefer to do the improvements as one project; however, it will depend on grant funding. The leakage rate from the Winter Storage Lagoon is greater than allowed by state standards and needs additional storage as well, therefore it is best to increase the volume at the same time the liner is replaced.

ES.6 RATE SUMMARY

The average monthly sewer rates are currently $48.00 after being raised 12% in 2022. For 2020, revenue equaled $175,779 and the average monthly sewer rate was $43 per EDU (residential) resulting in 341 EDUs over 12 months. Table ES-4 is a User Rate Summary based on known and potential funding options as this time.

TABLE ES-4 USER RATE SUMMARY

	USDA-RD 25% Grant, ARPA, CDBG	USDA-RD Per $1M
Project Total	$ 6,052,000	$ 1,000,000
DEQ/ARPA Grant	$ 1,504,495	
Block Grant	$ 500,000	
Subtotal	$ 4,047,505	$ 750,000
USDA-RD Grant	$ 1,011,876	$ 250,000
USDA-RD Loan Amount	$ 3,035,629	$ 750,000
Term (years)	40	40
Interest Rate	2.25%	2.25%
Annual Debt Service - New Debt	$115,892.35	$28,633.03
Monthly Debt Service - New	$ 9,657.70	$ 2,386.09
Users	293	293
Monthly Debt Service per User	$ 32.96	$ 8.14
Debt Service Reserve per User	$ 3.30	$ 0.81
Current User Rate	$ 43.00	
Total Monthly Fixed (Debt + Reserves) Costs p	$ 79.26	$ 8.96
Monthly O&M increase	$ 8,667	
Total Monthly Variable Costs per User	$ 29.58	$ -
Total Monthly Cost per User	**$ 108.84**	**$ 8.96**

The City Council has discussed the recommendations in this study during several City Council meetings. The City understands the deficiencies that are currently present in the wastewater collection and treatment system and the importance of addressing these items in a timely manner.

The City will seek for outside funding sources and modify the current user rate to fund the improvements listed in this study. The City has the technical, financial, and managerial resources to implement the recommendations of this study.

CHAPTER 1 - PROJECT PLANNING

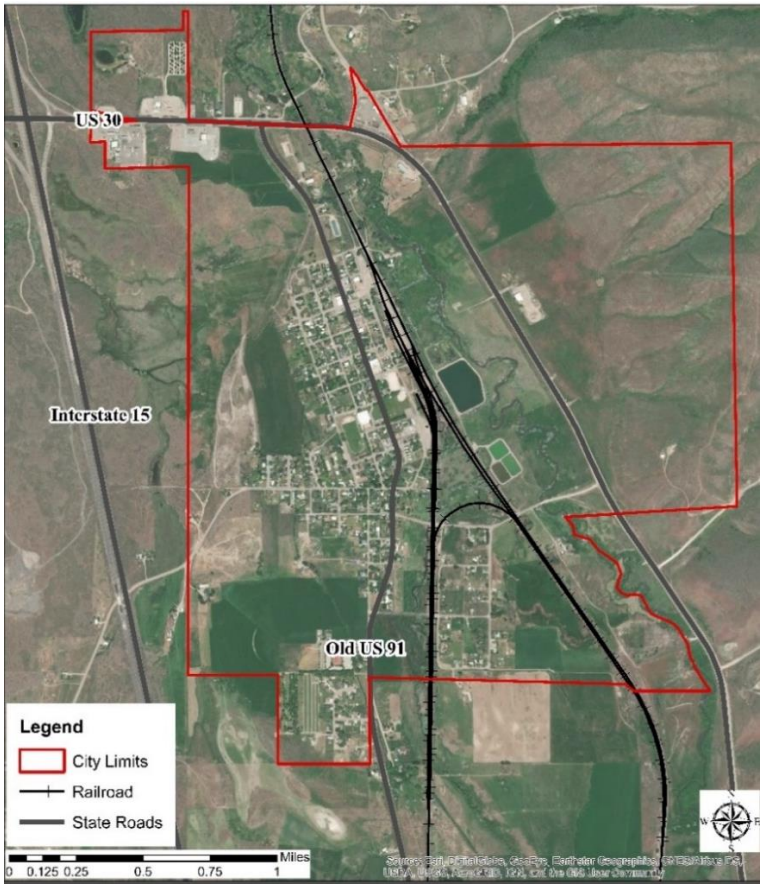
The City of McCammon (City) owns and operates a municipal wastewater collection system and wastewater treatment plant (WWTP). The effluent from the WWTP is stored during the winter and land applied on a field for crop production in accordance with the Idaho Department of Environmental Quality (DEQ) Reuse Permit Number M-192-03 (see Appendix A). The winter storage lagoon failed a seepage test in 2018, prompting a need for this study (see Appendix B). The purpose of this study is to determine the current and future needs of the City's wastewater system as well as provide a plan to meet those needs.

This Wastewater Facilities Planning Study (WWFPS) follows the DEQ and United States Department of Agriculture (USDA) – Rural Development (RD) requirements and provides a guide to the City for future wastewater improvements. The following chapter gives an overview of the project location, discusses the environmental considerations within the planning study area, and examines the population growth trend in the City. This chapter also provides the planning criteria and regulatory requirements.

1.1 LOCATION

McCammon, Idaho is a farming community in southern Bannock County, located approximately 25 miles south of Pocatello. The City is situated on a small knoll between U.S. Highway 30 and Interstate 15. U.S. Highway 30, and roughly forms the northern and eastern boundaries of the current City. The Union Pacific Railroad and the Portneuf River run through the City. Figure 1-1 shows the City limits, which constitutes the study area for this planning study. The WWTP lagoons are located along the west side of the Portneuf.

FIGURE 1-1 SERVICE AREA MAP



1.2 ENVIRONMENTAL RESOURCES PRESENT

The project at hand is solely a planning project, with recommended infrastructure and operational improvements that may have environmental impacts. While these impacts are briefly discussed throughout this report, a full environmental analysis is not included. The following paragraphs present a summary of the environmental resources in McCammon. Potential consequences for each improvement project are discussed in more detail in the subsequent chapters of this report.

Physiography, Topography, Geology, and Soils

The planning area is located in the Marsh Valley, which is situated between the Bannock and Portneuf Ranges. The topography in the City of McCammon is mostly flat with elevations varying from 4,740 feet at the north end of the City to 4,800 feet at the south end. The average slope is 0.6%, and the mountains east of the City slope at approximately 8% for several thousand feet, then steepen to a slope of 25%.

Soils in McCammon were primarily formed by wind-deposited materials and river alluvium, which are generally very deep and well-drained. The majority of the soil within the City limits is classified as Downey-Arimo complex, meaning it is comprised of gravelly silt loam and silt loam.

Surface and Ground Water Hydrology

The Portneuf River runs past the City of McCammon, and numerous mountain streams and creeks feed into the river. The Portneuf River lies within the eastern extent of the Columbia River Basin Watershed and the water eventually reaches the Pacific Ocean via the Snake and Columbia Rivers.

Potable water in the City of McCammon is supplied from Crystal Springs, which is located approximately 3.5 miles east of McCammon, as well as supplied from groundwater wells within the City. Groundwater is known to remain relatively shallow in pockets around the Portneuf River; however, west of the WWTP and railroad, where ground elevations are 10 to 20 feet higher, groundwater is correspondingly deeper.

Fauna, Flora, and Natural Communities

The United States Department of Agriculture Natural Resources Conservation Service (NRCS) lists three plants in Bannock County that are on the threatened or endangered list. These plants include the Astragalus eremiticus (a.k.a. Hermit Milkvetch; endangered), the Howellia aquatilis (a.k.a. Water Howellia; threatened), and the Mirabilis macfarlanei (a.k.a. Macfarlane's Four o'clock; threatened). The USFWS lists one plant (Spiranthes diluvialis, a.k.a. Ute Lady's Tresses) and one animal (Coccyzus americanus, a.k.a. Yellow-billed Cuckoo) as threatened. See Appendix A for the full lists of threatened or endangered plants and animals in the area.

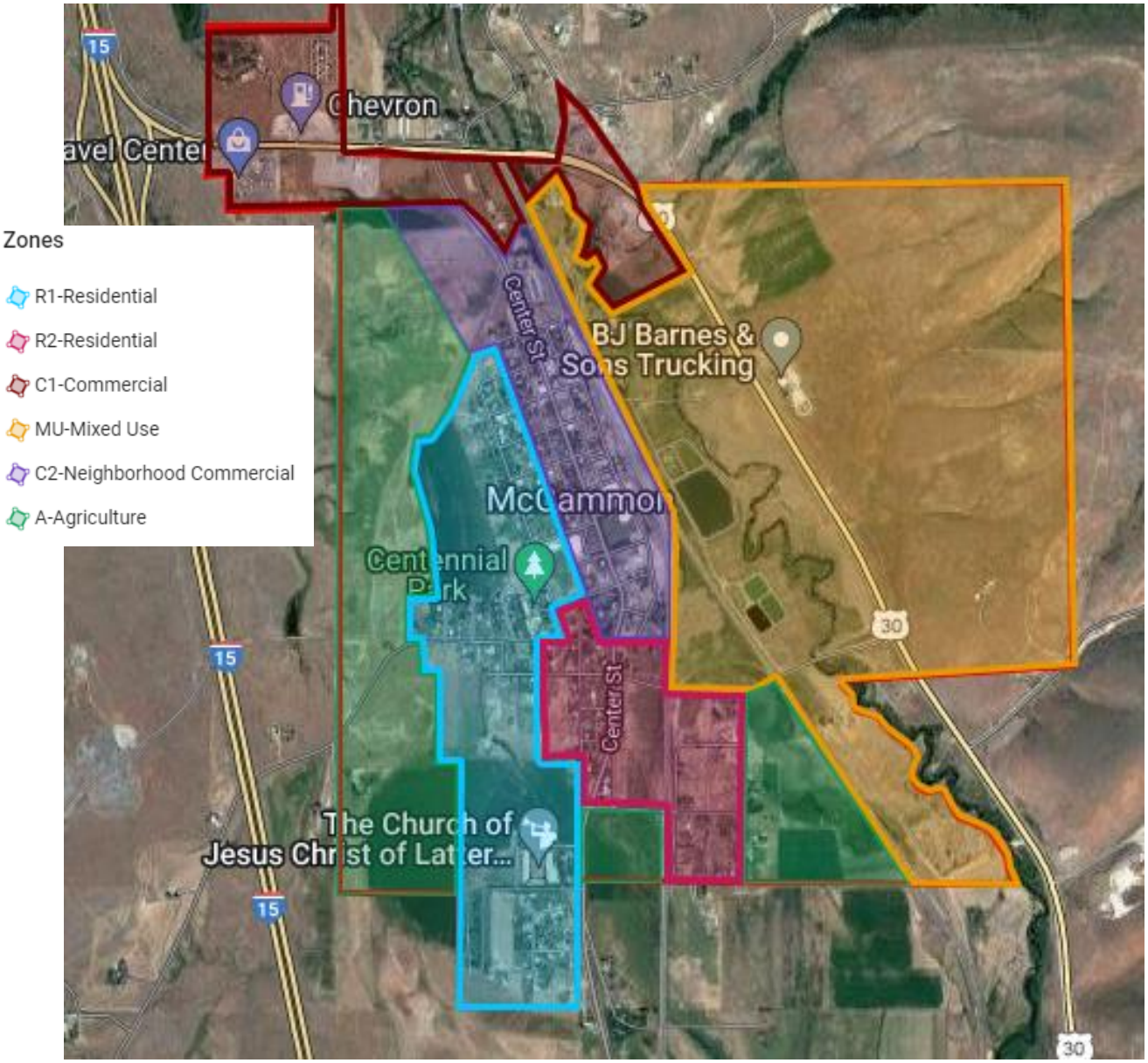
1.3 LAND USE INCLUDING HOUSING AND COMMERCIAL DEVELOPMENT

The planning area for this study corresponds to the McCammon City Limits and encompasses approximately 1,428 acres in Bannock County and the land is a mixture of developed or farmland with grass and alfalfa hay as typical crops. Table 1-1 shows land use by zone. The City does not contain any industrial facilities but is home to a few commercial facilities. Figure 1-2 displays the zoning in the study area.

TABLE 1-1 HOUSING AND COMMERCIAL DEVELOPMENT

Zone	Acres	%
R1-Residential	204	14%
R2-Residential	95	7%
C1-Commercial	132	9%
MU-Mixed Use	629	44%
C2-Commercial Neighborhood	119	8%
A-Agriculture	249	17%
Total City Limits	**1428**	**100%**

FIGURE 1-2 CITY ZONING MAP



Cultural Resources

The National Park Service's National Register of Historic Places lists the McCammon State Bank Building and the Harkness, H. O. Stable Building as historic properties in the study area. Note: no archeological sites were listed.

Utility Use

Wastewater is transmitted to the WWTP through approximately 5.6 miles of gravity sewer pipelines, five lift stations, and approximately 2.1 miles of pressure sewer pipelines. Storm water drains are not connected to the wastewater collection system. The wastewater is treated in two aerated lagoons, one facultative/settling lagoon, and then stored in a winter storage lagoon. Prior to being

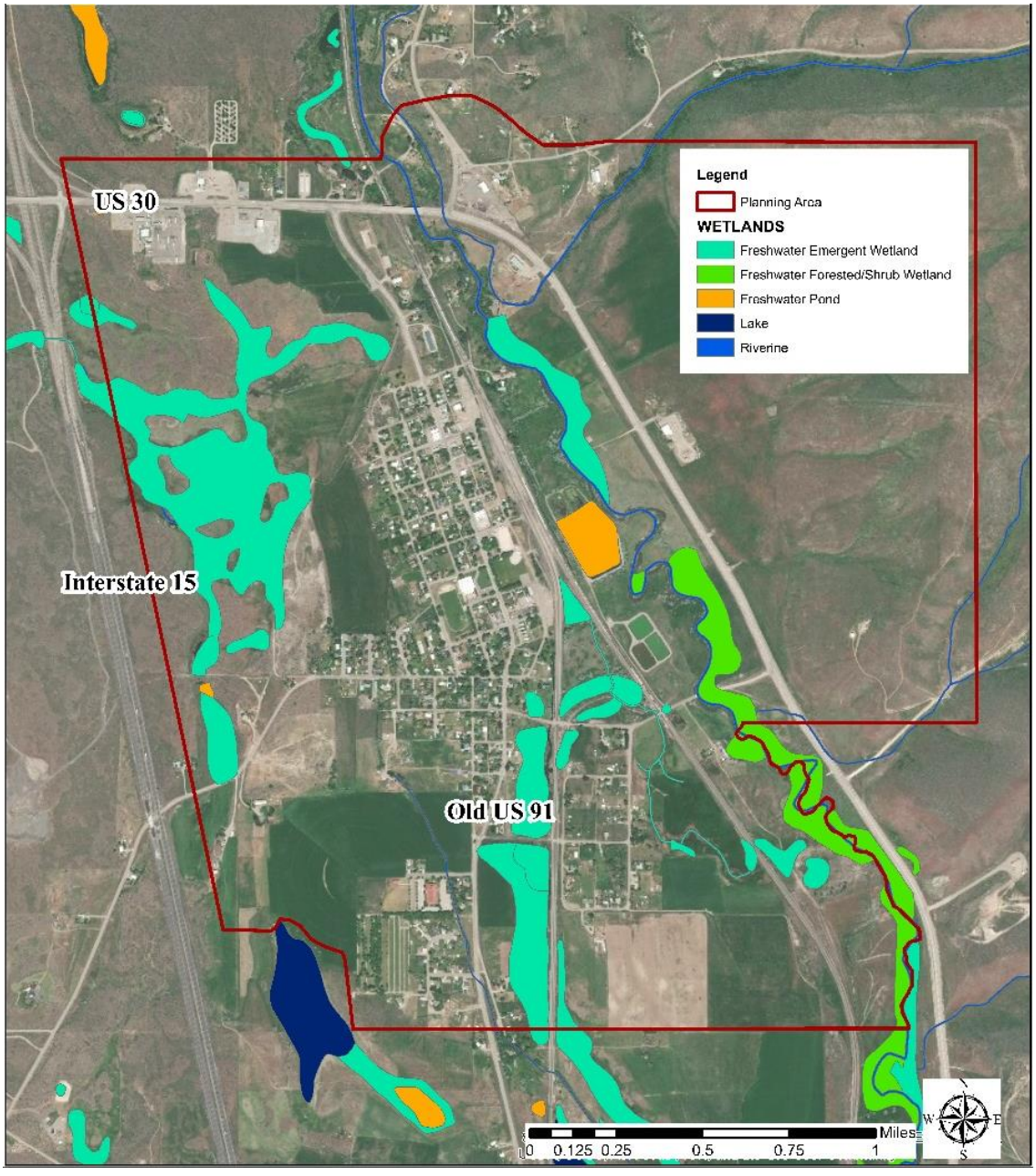
land applied, the treated wastewater is disinfected with liquid sodium hypochlorite. Land application occurs on a 30-acre field in the southeast corner of the City.

Floodplains and Wetlands

Floodplain information was gathered from the Federal Emergency Management Agency (FEMA) Map Service Center (https://msc.fema.gov/portal/home). The maps show that a portion of the City is within the 100-year flood plain. See Appendix A for the FEMA maps.

The National Wetlands Inventory through the Fish and Wildlife Service (USFWS) provides geographic information system (GIS) data outlining wetlands. Multiple locations within the study area are classified as wetlands, as shown in Figure 1-3.

FIGURE 1-3 WETLANDS IN MCCAMMON



Wild and Scenic Rivers

There are no Wild and Scenic Rivers located in the planning area.

Public Health and Water Quality Issues

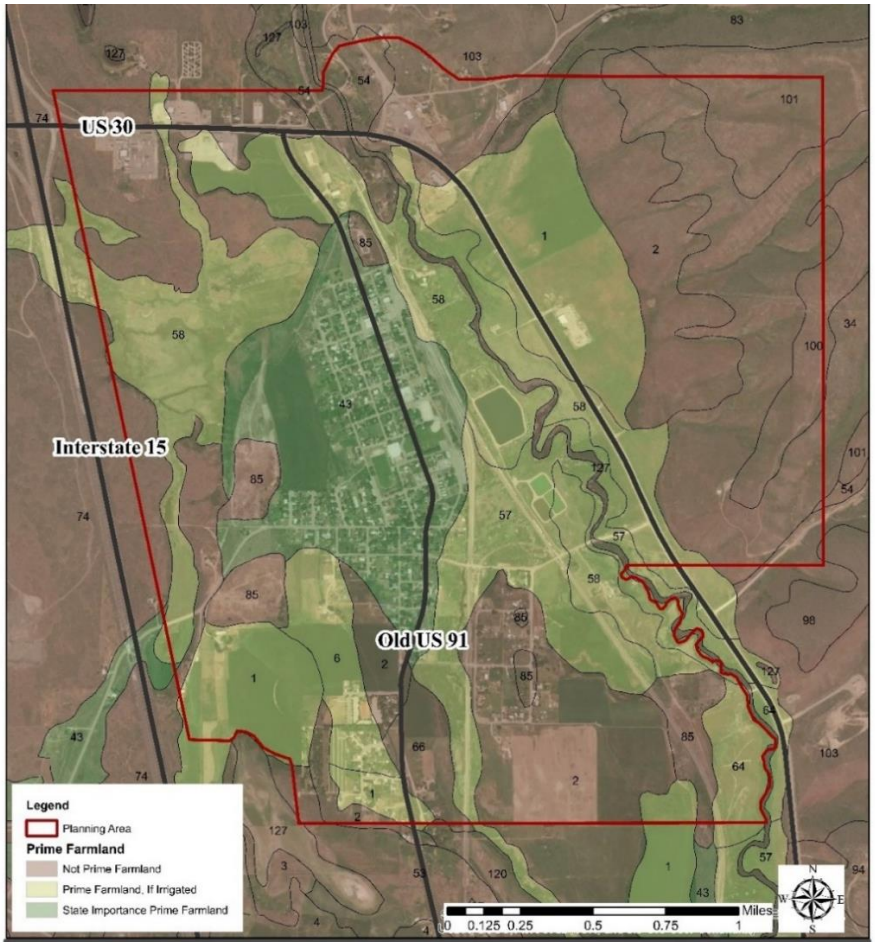
The City has a public drinking water system that provides potable water to residents and businesses. The water is disinfected with liquid sodium hypochlorite before it is placed into the City's system. The City monitors the drinking water to ensure the public health standards are met.

McCammon is not located in a current nitrate priority area. In order to protect the groundwater, potential areas of infiltration/exfiltration in the wastewater collection system will be prioritized for improvement. Best management practices should be employed during construction activities, ensuring the protection of surface water quality in the area, and backflow preventers should be provided where appropriate to protect potable water from cross-contamination.

Prime Agricultural Farmland

There is a vast amount of land in and around the McCammon area that is used for agriculture, and some of this agricultural land contains soils that are designated as "prime" farmland soils. Such designations are given to soils that are economically capable of producing sustained high yields of food, seed, forage, fiber, and oilseed crops. Of the 1,950 acres in the planning study area, approximately 531 acres (27%) has been classified as "Prime farmland if irrigated" by the NRCS (https://websoilsurvey.nrcs.usda.gov/). Figure 1-4 displays the prime farmland in the study area.

FIGURE 1-4 PRIME FARMLAND IN MCCAMMON



Sole Source Aquifer

McCammon lies approximately 28 miles southeast of the extents of the Eastern Snake River Plain Aquifer which has been designated as a Sole Source Aquifer. However, there are no Sole Source Aquifers within the planning area.

Coastal Resources

The Coastal Zone Management Act does not list any area in Idaho as a coastal resource; therefore, no coastal area will be affected by the proposed improvements.

Precipitation, Temperature, and Prevailing Winds

Climatological data was retrieved from the National Oceanic and Atmospheric Administration (NOAA) for McCammon and is summarized in Table 1-2. Snowfall averages less than 4 feet per year with the average freeze-free growing season being 113 to 146 days for 32°F and 28°F frosts, respectively. Approximately 35% of the annual precipitation falls during the growing season.

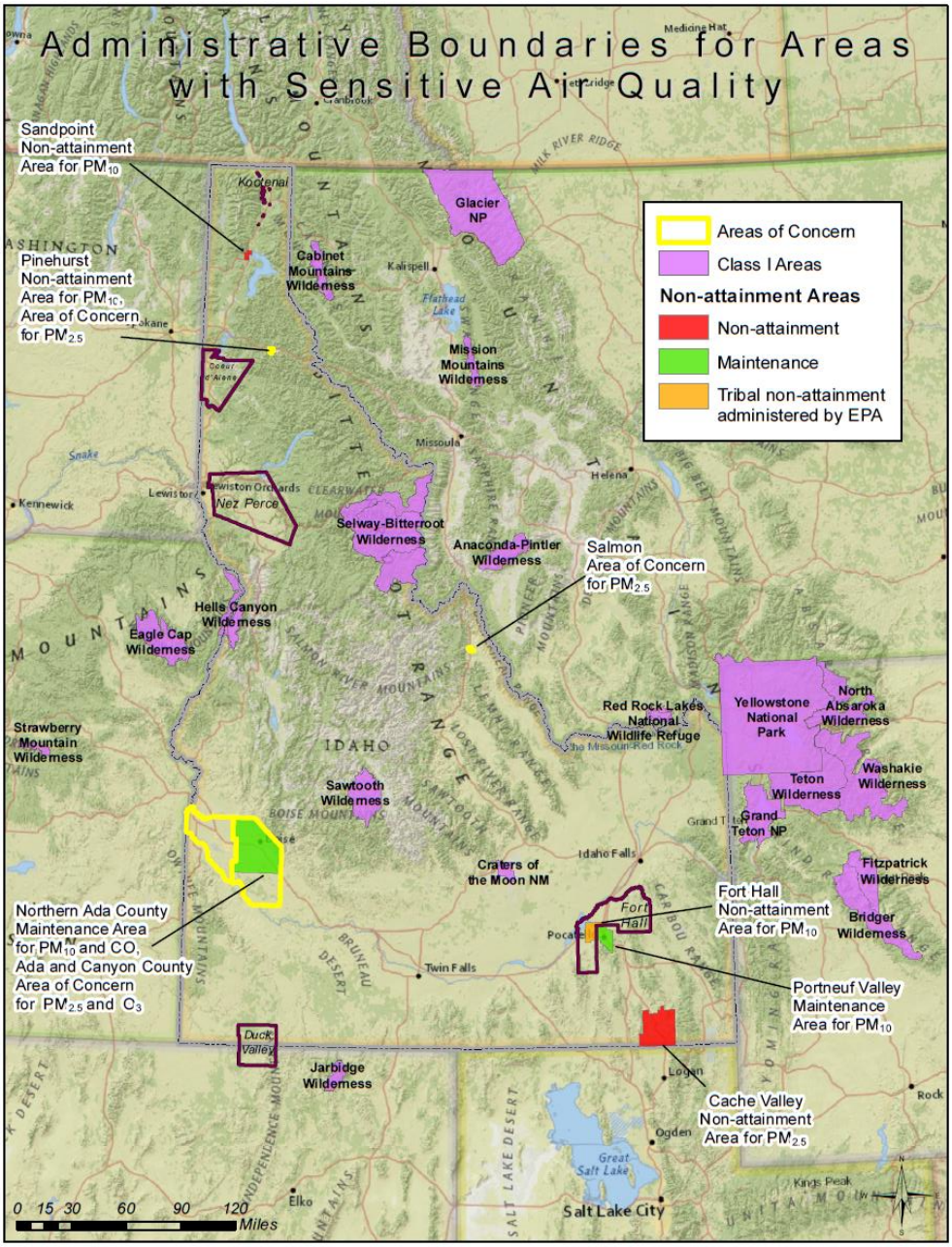
TABLE 1-2 CLIMATE SUMMARY FOR MCCAMMON

Month	Mean Temp (˚F)	Precipitation (in)	Evaporation (in)	Prevailing Wind		
				Mean Speed (mph)	Direction	Peak Gusts (mph)
Jan	21.4	1.43	0.64	10	WSW	68
Feb	25.5	1.45	0.94	11	WSW	60
Mar	35.6	1.01	2.17	11	WSW	64
Apr	44.2	1.22	3.68	12	WSW	66
May	52.6	1.31	4.85	11	WSW	61
Jun	60.7	1.08	5.69	10	WSW	70
Jul	68.3	0.48	6.39	9	WSW	66
Aug	67.0	0.86	5.60	9	WSW	68
Sep	57.5	1.33	4.26	9	WSW	51
Oct	45.6	1.21	2.93	10	WSW	51
Nov	33.0	0.88	1.25	11	WSW	58
Dec	22.7	1.66	0.60	10	WSW	58
Annual	**44.5**	**13.92**	**38.99**	**10**	**WSW**	**70**

Air Quality and Noise

Idaho is among the states that have delegated authority from EPA to issue air quality permits and enforce air quality regulations. DEQ's air protection efforts are intended to ensure compliance with federal and state health-based air quality regulations. The Clean Air Act of 1970 identified six common air pollutants of concern, called "criteria pollutants," which are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide. Fugitive dust is also closely regulated as it contributes to particulate matter. McCammon is not in an area of concern, Class I area, or non-attainment area, and additionally, no noise issues have been identified for the area. A map of areas with sensitive air quality is shown in Figure 1-5.

FIGURE 1-5 AIR QUALITY MAP



Energy Production and Consumption

The City of McCammon does not produce any energy. Energy use by the City's wastewater system is comprised primarily of pumping from lift stations, aerators at the WWTP, and dosing pumps for disinfection.

Socio-Economic Conditions

Based on census data, the population of McCammon in 2010 was 809, and 825 in 2020. The top five areas of employment are office and administrative support (19%), sales (13%), executives and administrators (12%), food preparation (10%), and education/training (6%). Over 90% of McCammon's labor force is employed in Pocatello and no change is anticipated in this employment scenario. About 22% of McCammon's population is over 65, who are presumably retired. At the time of this writing, the median household income in McCammon was $54,999, which is based on Idaho Department of Commerce statistics.

Population growth in McCammon has historically been gradual with growth consisting of primarily single-family residences with a small retail base, and this trend is expected to continue with the development of platted subdivisions in the planning area. Based on land use and topography, residential growth in McCammon is most likely to occur on the west and south sides of the City while commercial development is expected to occur along U.S. Highway 30.

1.4 POPULATION TRENDS

Information from the United States Census Bureau was used to project future growth. Historical data along with recent trends in Bannock County (6% growth estimate from 2010 to 2019) was factored in to determine a growth rate for the City. Table 1-3 summarizes the historical City growth rates. On average, the City has maintained approximately 0.61% growth between 1950 and 2020.

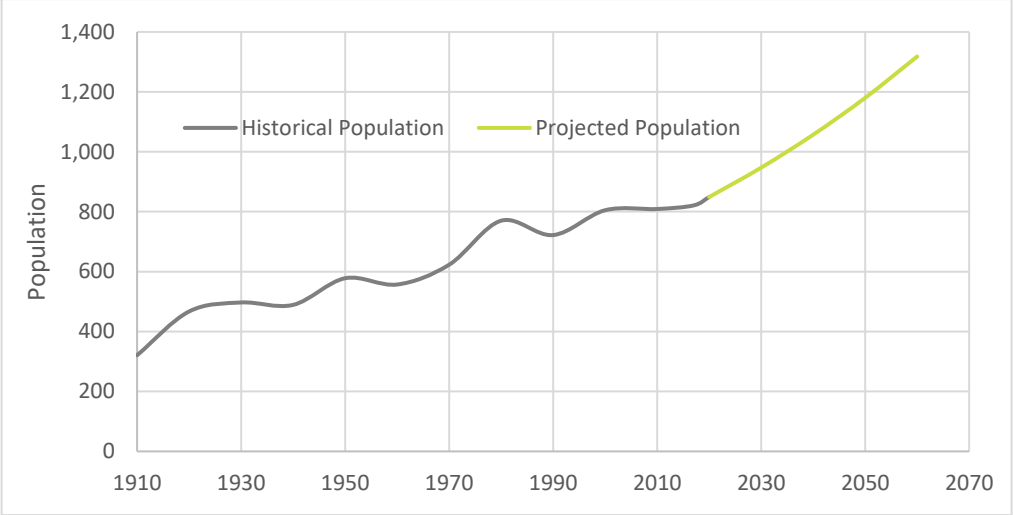
TABLE 1-3 HISTORICAL POPULATION AND GROWTH RATES

Year	Population	Growth Rate
1950	578	1.67%
1960	557	-0.37%
1970	623	1.12%
1980	770	2.12%
1990	722	-0.64%
2000	805	1.09%
2010	809	0.05%
2020	825	0.19%

For the purposes of this study, the City selected a growth rate of 1.1% for the future populations consistent with the growth rate used in the recently completed Water Facilities Planning Study. Using this growth rate,

the City population would be approximately 1,057 in 2040 and 1,318 people in 2060. Figure 1-6 below illustrates the historical and future populations.

FIGURE 1-6 MCCAMMON POPULATION



The City has 303 residential utility customers with 278 of those connected to the collection system (approximately 779 people). The customers who are not connected are spread out and not likely to connect in the future. The City has 8 commercial customers that comprise 14.5 equivalent dwelling units (EDUs). The total number of EDUs in the City is 293, or roughly 2.66 people per EDU. Assuming all future growth is connected (none of the existing non-connected customers), this equates to service populations for 2040 and 2060 of 970 people and 1,209 people, and 365 and 455 EDU's respectively. The 2040 population will be used to evaluate the WWTP and the 2060 service population will be used for the collection system.

1.5 INFLUENT FLOW PROJECTIONS

The City of McCammon's wastewater flows are not easily measured as there are no flow meters in the collection system. Two methods were used to estimate wastewater flow rates. The first method utilized the lift station pump run time readings and the second method used a water balance.

Pump Run Times

Using the pump run time, wet well diameter, and water level readings for Lift Stations No. 4 and 5, an estimate was made for the influent flow rate. Lift Stations No. 4 and 5 were selected since they directly pump into the WWTP. Lift Station No. 4 is the City's main lift station located near the City shop while Lift Station No. 5 is located next to U.S. Highway 30 and serves the Flying J, Chevron, and other commercial development at the north end of the City. During a site visit on October 29, 2020, the pumping rate for the two lift stations was estimated. The inside diameter of the wet well was measured, and the depth reading in the wet well was recorded at the start and end of the pumping period with a timer being used to measure the time it took to draw down the wet well. The inflow coming into the lift station was estimated based on observation. The estimated lift station flow rates were approximately 230 gallons per minute (gpm) for Lift Station No. 4 and 320 gpm for Lift Station No. 5.

The City does not have records of the pump rates of the existing pumps in Lift Stations No. 4 and 5. Using the pump nameplates on Lift Station No. 4, a pump curve was obtained from the pump manufacturer. The pumping rate was estimated using the known elevations of the lift station and the WWTP, and assumed losses through the pressure sewer line, an estimated flow rate of 230

gpm at 25.5 feet of head was calculated. While this pumping rate matched the field measurement and seemed reasonable, the window for data collection was fairly short.

Public Works' employees recorded pump run time readings weekly between October 29, 2020 and December 11, 2020. During that time, the two pumps at Lift Station No. 4 ran for 51.9 hours and 50.2 hours, and the two pumps at Lift Station No. 5 ran for 10.2 hours and 11.25 hours. The estimated pump rates for these run times equate to approximately 32,800 gallons per day (gpd) for Lift Station No. 4 and 9,600 gpd for Lift Station No. 5 for a total collection system flow of 42,400 gpd. The total collection system flow equates to an average rate of about 54.4 gallons per person per day (gpcd). The influent flow is lower than expected, and a rate between 100 to 120 gpcd would be more typical.

Water Balance

The second method used to estimate the influent flow rate was water balance, which uses average yearly values, so the time period is longer than the pump runtime method. The water balance method accounts for evaporation, precipitation, lagoon seepage, and land application data to estimate the total inflow into the WWTP. The water surface area for each lagoon was used for evaporation and seepage, and the top of the pond area was used for precipitation. The lagoon areas are shown in Table 2-1 in Chapter 2.

According to the National Weather Service, McCammon receives an average precipitation of 13.92 inches per year, and according to the University of Idaho's Kimberly Research and Extension Center, McCammon has an average of 38.99 inches per year of evaporation. The 2020 Annual Reuse Permit data of 8.6 MG was used for the land application while seepage for the lagoons was estimated using seepage tests. The total volumes of evaporation, precipitation, land application, and seepage are shown in Table 1-4. The influent wastewater flow is equal to the sum of the land application, evaporation, and lagoon seepage minus the precipitation.

TABLE 1-4 WATER BALANCE

Lagoon Gain/Loss	Cell 1	Cell 2	Cell 3	Winter Storage	Total
Evaporation (MG)	1.15	1.15	1.13	7.23	**+10.66**
Precipitation (MG)	0.46	0.46	0.45	2.85	**-4.22**
Seepage (MG)	0.17	1.20	1.14	24.51	**+27.03**
Land Application (MG)	-	-	-	-	**+8.60**
Estimated Influent Flow (MG)	**-**	**-**	**-**	**-**	**+42.07**

Using this method, the estimated influent flow is 42.07 MG, which equates to 115,000 gpd (148 gpcd). With this method, the flow rate is significantly more than the first method and above the expected range of 100-120 gpcd. Also, when using the water balance method, it might be accounting for infiltration in the system that was not observed during the pump run time method. Water usage records for the Flying J and Chevron equated to approximately 32,000 gpd in 2021. Assuming that most of the water used in the Flying J and Chevron enters the wastewater system, this large amount of water is likely impacting total flows from the City.

After subtracting the water usage of Flying J and Chevron (32,000 gpd) from the total estimated influent flow of 115,000 gpd, total flows from the rest of the City were 83,000 gpd or 107 gpcd. This is in the expected range for normal wastewater flows. Wastewater flows per equivalent dwelling

unit (EDU) are 298 gal/EDU/day. Based on these calculations, Flying J and Chevron are contributing wastewater equivalent to 88 EDU's and 20 EDU's respectively.

Flow Projections

The following section summarizes the projected average annual daily flow (AADF), maximum month flow (MMF), peak day flow (PDF), and peak hour flow (PHF). Using the water balance flow should provide a factor of safety in the evaluation.

A population-based factor from the Ten States Standards (18 + √Population / 4 + √Population) can be used to calculate the PHF (Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environment Managers, 2014). According to the Water Environment Federation, Manual of Practice No. 8, peaking factors for the MMF and PDF are typically between 1.30-1.45 and 1.40–2.60 times the AADF, respectively (WEF, MOP 8, 2018). To account for uncertainty, the highest peaking factors were selected for the evaluation. The projected planning flow rates in million gallons per day (MGD) for 2040 and 2060 are shown in Table 1-5 based on the population projections.

TABLE 1-5 WATER BALANCE INFLUENT FLOW ESTIMATE

Year	Service Population/EDU's	AADF (MGD)	MMF (MGD)	PDF (MGD)	PHF (MGD)
2020	779/293	0.115	0.167	0.299	0.446
2040	970/365	0.144	0.209	0.374	0.547
2060	1,209/455	0.179	0.260	0.465	0.671

Infiltration and Inflow (I/I)

The projected influent flows are likely conservative because they were based on one year of data and were highly sensitive to the amount of seepage from the Winter Storage Lagoon. It is highly recommended that flow measurement be added as one of the Priority 1 improvements because accurate flow measurements would help the City determine if I/I is a significant issue for the collection system.

1.6 INFLUENT LOADING PROJECTIONS

The City does not contain any industrial facilities but is home to a few commercial facilities, which are mainly service-oriented businesses. The City expects commercial customers to be required to pretreat (if necessary) to the levels of domestic wastewater, pay connection fees, and be billed for usage on the appropriate EDU basis. Septage is not accepted by the City wastewater system. For the purpose of this planning study, we assumed septage will not to be allowed into the wastewater system as it can provide a high loading to a WWTP.

Similar to the flows, without data, industry-standard values were assumed for the influent five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), total Kjeldahl nitrogen (TKN), and total phosphorus. The industry-standard values used were 0.20 ppcd for BOD_5, 0.25 ppcd for TSS, 0.046 ppcd for TKN, and 0.0048 ppcd for phosphorus for the annual average flows (Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environment Managers, 2014; Metcalf & Eddy/AECOM, 2014). An industry standard peaking factor of 1.30 for BOD_5, 1.30 for TSS, 1.15 for TKN, and 1.12 for phosphorus was used for the maximum month flows (Metcalf & Eddy/AECOM, 2014). Projected influent loads for the planning period are shown in Table 1 – 6.

TABLE 1-6 INFLUENT LOADING PROJECTIONS

Parameter	Planning Criteria (ppcd*)	Planning Criteria Projected Flow (MGD)		
Year		***2020***	***2040***	***2060***
Population/EDU's		779/293	970/365	1,209/455
		BOD_5		
AADF	0.20	156	194	242
MMF	0.26	203	252	314
		TSS		
AADF	0.25	195	243	302
MMF	0.33	257	320	399
		TKN		
AADF	0.046	36	45	56
MMF	0.053	41	51	64
		Phosphorus		
AADF	0.0048	3.7	4.7	5.8
MMF	0.0054	4.2	5.2	6.5

1.7 REGULATORY REQUIREMENTS

Reuse Water

The City is allowed to use the treated effluent during the growing season in accordance with the reuse permit (M-192-03; see Appendix A). The growing season is defined in the permit as April 1 through October 31 and the recycled water is classified as Class D. The effluent requirements are a median number of total coliform organisms less than or equal to 230 per 100 mL based on the last three days of sampling, with no sample exceeding 2,300 organisms per 100 mL. One 30-acre site is approved for slow rate land application. The City must irrigate at the crop specific irrigation water requirement (IWR) using wastewater and supplemental irrigation water. The maximum nitrogen loading of the water on the site (wastewater and supplemental irrigation water), must be less than or equal to 150% of the median crop uptake from the last three years. The monitoring requirements from the reuse permit are shown in Table 1-7.

TABLE 1-7 MONITORING REQUIREMENTS

Sampling	Date	Details	Test Constituents
Soils	In March or April 2023	Composite sample prior to 1st Irrigation of Supplemental or Recycled Wastewater or fertilizer application	pH, Plant Available Phosphorus, Nitrate – nitrogen, Ammonium nitrogen, Electrical conductivity
Recycled Wastewater	Daily	Daily meter reading	Flow
	Once per month	Million gallons per month and depth (inches per acre)	Flow
	1st watering	3 samples (preferred different days)	Total Coliform (CFU/100 mL)
	After 1st, when using	Monthly grab sample	Total Coliform (CFU/100 mL)
	Once per month during recycled wastewater use	Monthly 24-hour composite sample: 4 individual aliquots distributed by volume and over time.	Total Nitrogen
	Not until 2023	Monthly 24-hour composite sample: 4 individual aliquots distributed by volume and over time.	Total Phosphorus, TDS, VDS, and NVDS
Supplemental Irrigation	Not until 2023	2 samples during irrigation, prior to mixing with recycled wastewater	Total Nitrogen
			Total Phosphorus
			NVDS
	Daily	Daily meter reading	Flow
	Once per month	Million gallons per month and depth (inches per acre)	Flow
Groundwater	Not until 2027	Monthly groundwater depth prior to seepage testing in 2028	Static groundwater level
Harvested Crop	Each Harvest	Tissue Analysis	Moisture Content
			Total Combustible Nitrogen
			Nitrate as N
			Phosphorus as P
			Ash %
		Harvest General Information, By Farmer	Harvest Date
			Harvested Acres
			As-Harvested 'wet' weight
			Moisture Content
			Dry Yield
			Type of Crop

The City might consider another classification and use for the treated wastewater. Although not discussed in detail in this facility planning study, utilizing the wastewater for another use would require a new permit. The recycled water requirements can be found in the Idaho Administrative Procedures Act (IDAPA) 58.01.17 "Recycled Water Rules". Table 1-8 provides typical treatment requirements for the different classes along with some allowable uses. Classes A-D are shown in the table while Class E is not shown as it has the fewest uses.

TABLE 1-8 RECYCLED WATER CLASSES AND SOME EXAMPLE USES

	Class A	Class B	Class C	Class D
Typical Treatment Requirements				
Oxidized	X	X	X	X
Coagulated and Clarified	X	X	-	-
Filtered	X	X	-	-
Disinfected	X	X	X	X
BOD_5, mg/L	5 – 10	-	-	-
Total Nitrogen, mg/L	10 (or stricter) - 30	10 (or stricter) - agronomic rate	agronomic rate	agronomic rate
Turbidity, NTU	0.2 – 5	5 - 10	-	-
pH	6.0 - 9.0	-	-	-
Total Coliform, no./100 mL	2.2 – 23	2.2 - 23	23 - 230	230 – 2,300
Virus	5-log reduction	-	-	-
Allowable Uses				
Fodder, fiber, or processed food crops	X	X	X	X
Pasture: not producing milk for human consumption	X	X	X	X
Pasture: producing milk for human consumption	X	X	X	-
All edible food crops	X	X	-	-
Golf courses	X	X	-	-
Parks: non-use periods	X	X	-	-
Parks: use periods	X	-	-	-
Home irrigation	X	-	-	-
Groundwater recharge	X	-	-	-

Surface Water

The Portneuf River is nearby the City's WWTP, and at one time, the City of Lava Hot Springs, which is approximately 10 miles from McCammon, discharged into the Portneuf River. However, due to stringent total inorganic nitrogen (0.04 mg/L) and total phosphorus (0.06 mg/L) limits imposed on the surface water discharge, Lava Hot Springs changed to Class D land application, similar to the City of McCammon's system.

A total maximum daily load was established for the Portneuf River due to water quality concerns. Pollutants listed as part of the Portneuf River TMDL (2010) include sediment, nutrients, E. coli, and oil and grease. Since the City of McCammon does not discharge to the Portneuf River, a waste load allocation may not be available to the City. It is also likely, if a surface water discharge is possible, that the discharge limits would be stringent similar to the City of Lava Hot Springs. In order to meet stringent discharge limits, significant improvements to the WWTP would be required, and for these reasons, a surface water discharge is not recommended to be investigated further.

1.8 COMMUNITY ENGAGEMENT

Chapters 1 and 2 were presented to the City Council on 10 February 2021 along with the selected population growth rate of 1.1%. The City Council approved of moving forward assuming a growth rate of 1.1%. A draft Capital Improvement Plan with a total cost of recommended improvements of $6,052,000 was presented and discussed with the City Council on July 13, 2022. The draft study was presented to the City Council on September 15, 2022, along with the potential environmental impacts of each of the alternatives considered. Copies of the handouts used in these meetings are included in Appendix A.

CHAPTER 2 - EXISTING FACILITY ASSESSMENT

The following section contains a description and condition evaluation of the City of McCammon's existing collection system and wastewater treatment plant (WWTP).

2.1 LOCATION

The City of McCammon is located in Bannock County in southeast Idaho, approximately 20 miles to the southeast of Pocatello. A map of the existing collection system can be found in Figure 2-1 as well as in Appendix B. An aerial view of the WWTP is shown in Figure 2-2.

FIGURE 2-1 WASTEWATER SYSTEM MAP

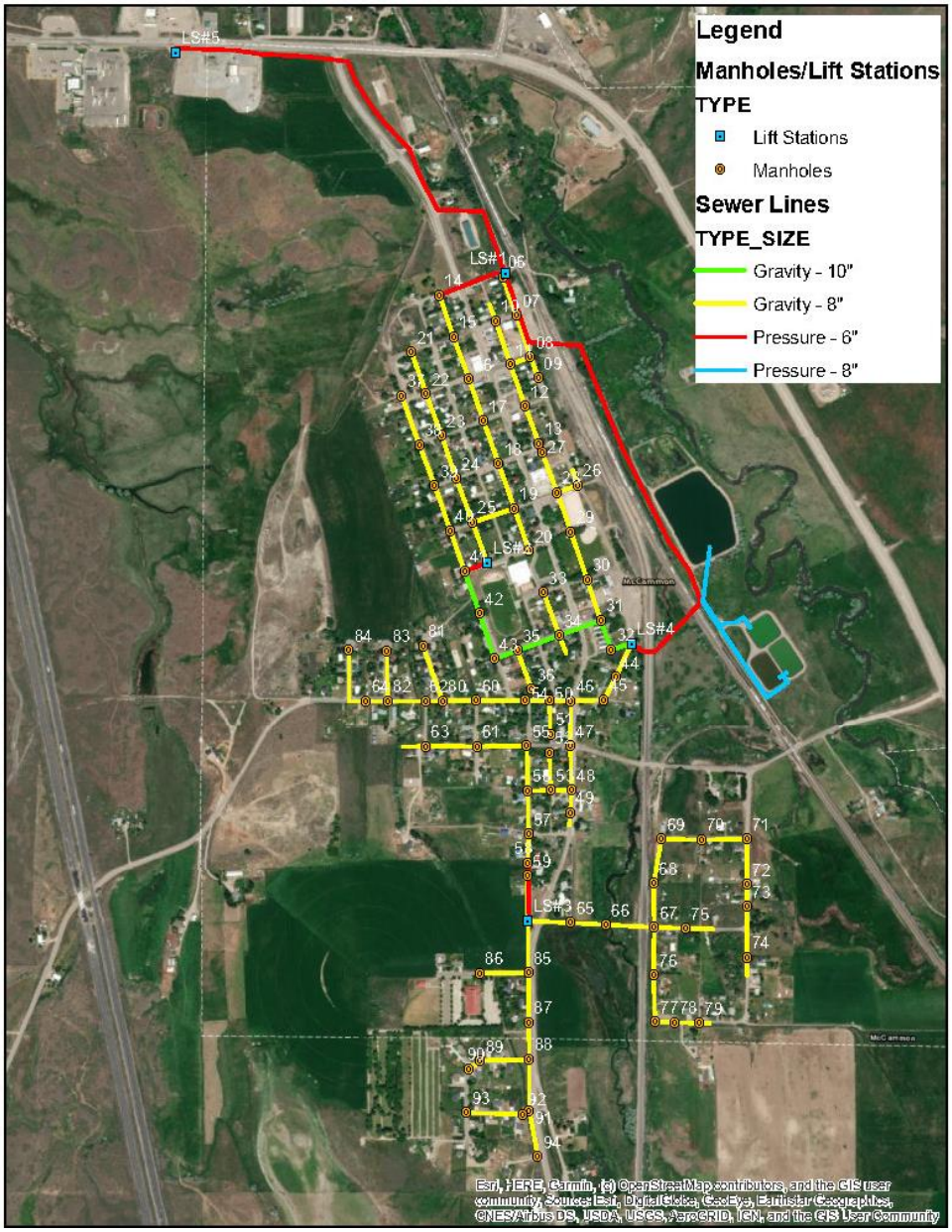


FIGURE 2-2 WWTP AERIAL VIEW

2.2 HISTORY

McCammon's wastewater system was constructed in 1971 by the McCammon Sewer Association. The treatment system was a total containment system, relying on evaporation to dispose of the treated wastewater. The City took over ownership and operation of the facilities in 2002. The system provides service to most of the City's residents, although some areas are sparsely populated or located far from the treatment plant and are not connected to the system (approximately 25 utility customers). Since the transition, two new service areas have been added to the system - the Bitton Subdivision and the Flying J and Chevron. As the total containment lagoons were undersized, the City constructed new treatment lagoons (Cells 1, 2, and 3) in 2005-2006. The lagoon now used for winter storage was part of the original treatment system, and it was repurposed as part of the 2005-2006 project. A reclaimed water pump station was also installed to pump to the land application area.

2.3 SYSTEM DESCRIPTION

Collection System Description

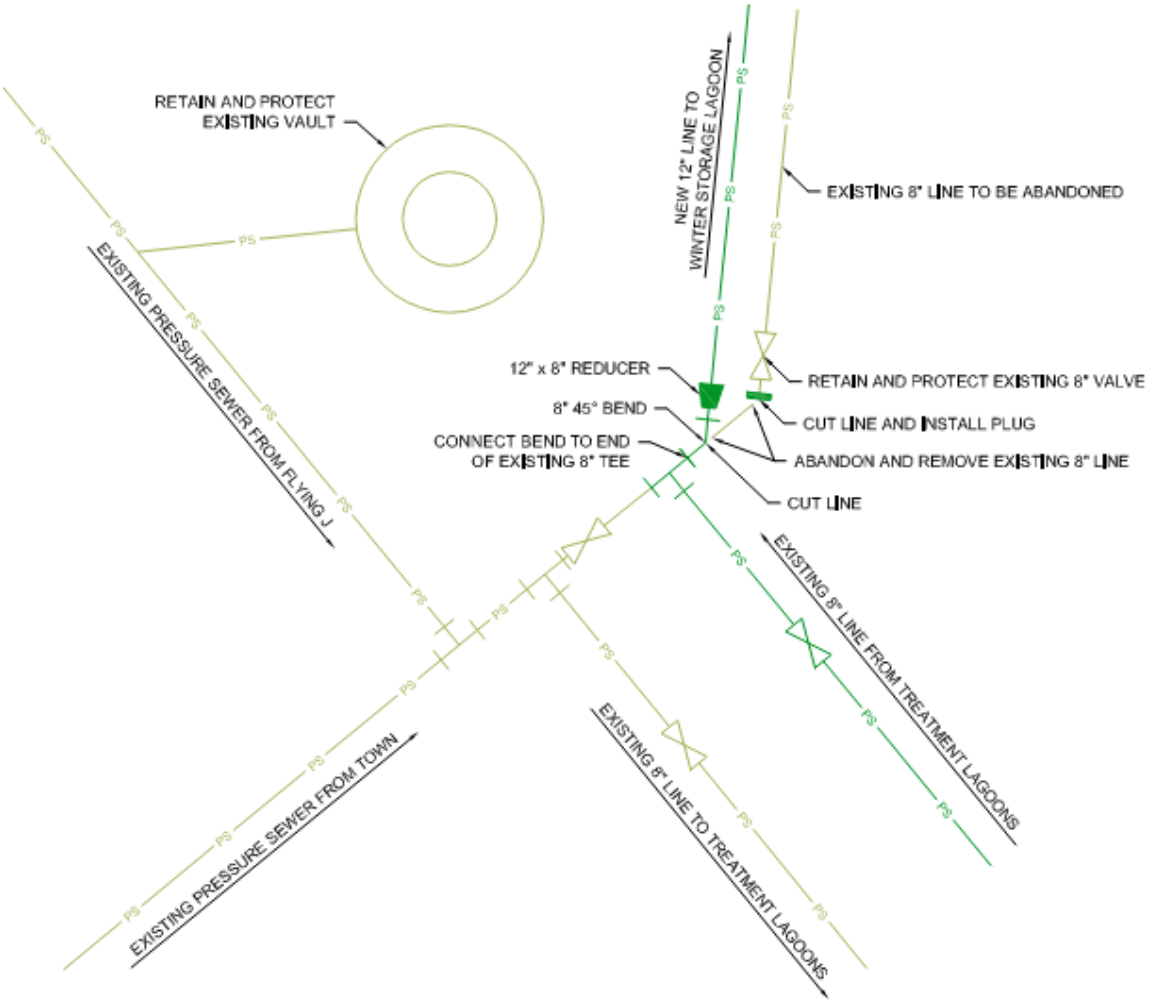
The wastewater collection system includes about 5.2 miles of 8-inch concrete and PVC gravity sewer pipe, about 0.4 miles of concrete 10-inch gravity sewer pipe, approximately 89 manholes, five lift stations, 1.7 miles of 6-inch PVC and cast-iron pressure sewer, and 0.4 miles of 8-inch PVC pressure sewer.

Lift Stations 1, 2, and 3 serve some of the lower elevation areas of the City and are similar to one another, with duplex submersible pumps in a 5-foot diameter wet well. The estimated pumping rate using field measurements for Lift Station No. 3 is 85 gallons per minute (gpm), but since Lift Stations 1 and 2 were upgraded in 2019-2020 with new pumps, they have a design flow of 180 gpm. Pumps

were selected that could be used interchangeably in either location, and separate valve vaults, new concrete lids, access hatches, and pump level controls were added. Pump curves for the new pumps in Lift Stations 1 and 2 can be found in Appendix B. Lift Station 3 is being upgraded in 2022 with the same pumps and controls used in Lift Stations 1 and 2.

Lift Station 4 is a wet well / dry well configuration with duplex pumps. As discussed in Chapter 1, field measurements estimated a pumping rate of approximately 230 gpm. Lift Station 4 is the City's main lift station and pumps all the flow from the City into the WWTP except for the flow from Lift Station 5. Lift Station 5 has duplex submersible grinder pumps with a pumping rate of approximately 320 gpm based on field measurements and pumps directly to the WWTP. These pumps are located in a wet well along the south side of Highway 30, just east of the Chevron convenience store. Figure 2-3 shows the piping configuration where the pressure sewer from Lift Station 5 joins with the pressure sewer from Lift Station 4 and can be routed to the treatment lagoons or to the winter storage lagoon.

FIGURE 2-3 PIPING CONFIGURATION



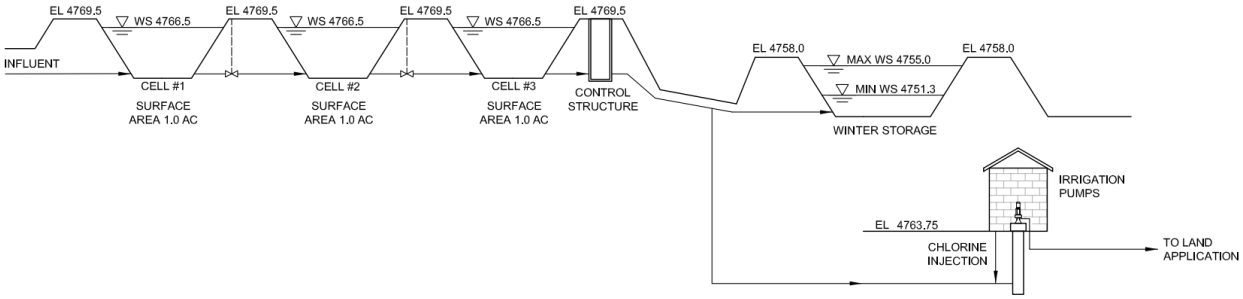
The control system for each lift station is configured to operate in a lead-lag condition, thus reducing pump wear and extending the life and reliability of the lift stations. The City has a portable backup generator, but it is not functional and is undersized for the largest lift stations in the system. The lift

stations are equipped with red alarm lights and an autodialer to notify City staff of an alarm condition.

WWTP Description

Wastewater from the City of McCammon is treated in three lagoons, which are located on the east side of the City, between the railroad and the Portneuf River as shown in Figure 2-1. A process schematic of the WWTP is shown in Figure 2-4.

FIGURE 2-4 WWTP SCHEMATIC PROCESS LAYOUT



Wastewater is pumped from Lift Stations 4 and 5 to the WWTP. During normal operation the wastewater flows through Cells 1, 2, and 3 in series; however, the City has the flexibility to bypass the first two cells or to operate the first two cells in parallel rather than series. Cells 1 and 2 each have two (2) 3 HP aerators that are located on opposite sides of the lagoons. Data on the lagoon is presented in Table 2-1. The volumes shown are based on depth from the bottom of the lagoon, and it is likely that sludge accumulation has somewhat reduced the available depth and lagoon storage capacity, particularly in Cell 1.

TABLE 2-1 LAGOON INFORMATION

Lagoon Data	Cell 1	Cell 2	Cell 3	Winter Storage
Seepage (in./day)	0.016	0.112	0.108	0.362
Storage Volume (MG)	2	2	2	13
Evaporation (MG)	1.15	1.15	1.13	7.23
Precipitation (MG)	0.46	0.46	0.45	2.85
Water Surface Area (SF)	47,273	47,273	46,383	297,558
Water Surface Elevation (ft)	4766.5	4766.5	4766.5	4755.0
Pond Bottom Area (SF)	26,711	26,717	27,056	246,358

Pond Bottom Elevation	4,758.5	4,758.5	4,758.5	4,750.8
Pond Top Area (SF)	52,884	52,879	51,898	328,333
Top of Dike Elevation	4,769.5	4,769.5	4,769.5	4,759.4

Cells 1 and 2 are aerated, partially mixed lagoons, while Cell 3 is a facultative, settling lagoon. There is a weir box at the outlet of Cell 3 that maintains the water level in Cell 3. Effluent from the treatment lagoons spills over the weir at the outlet from Cell 3 and flows by gravity through an 8 and then a 12-inch line to the Winter Storage Lagoon, and the water can only be land applied during the growing season. The stored water in the lagoon is disinfected prior to being land applied on a nearby field.

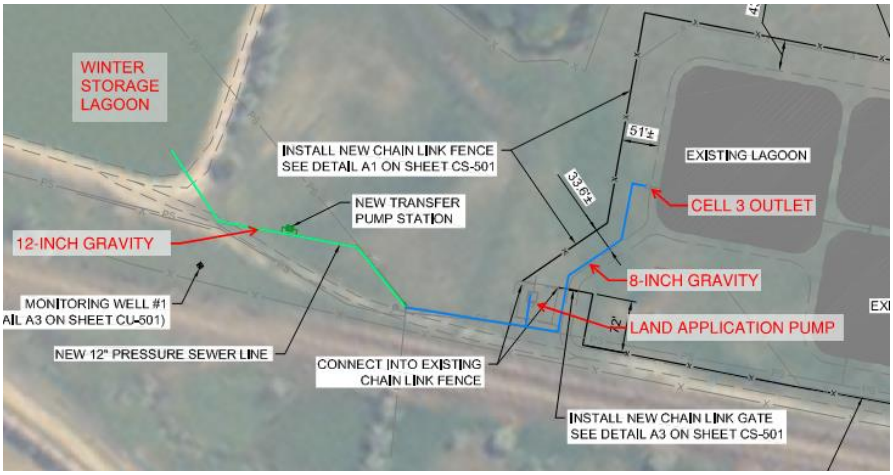
Cells 1, 2, and 3 are lined with 60-mil thick HDPE while the Winter Storage Lagoon is clay-lined. A seepage test in 2018 showed Cells 1, 2, and 3 were able to meet the allowable seepage requirement; however, the Winter Storage Lagoon was leaking at a rate of 0.362 inches per day, which is above the maximum allowable seepage of 0.25 inches per day. A letter dated December 28, 2018, from the DEQ informed the City that corrective measures would need to be taken to bring the seepage rate to acceptable levels. A copy of the letter is included in Appendix B.

The City has observed a large number of rags and other debris in the wastewater that causes clogs in the WWTP components, including the aerators. Currently, there is no headworks screen to remove this debris and there is no backup generator for the aerators and no SCADA system or means to notify the operator of alarms.

Land Application Description

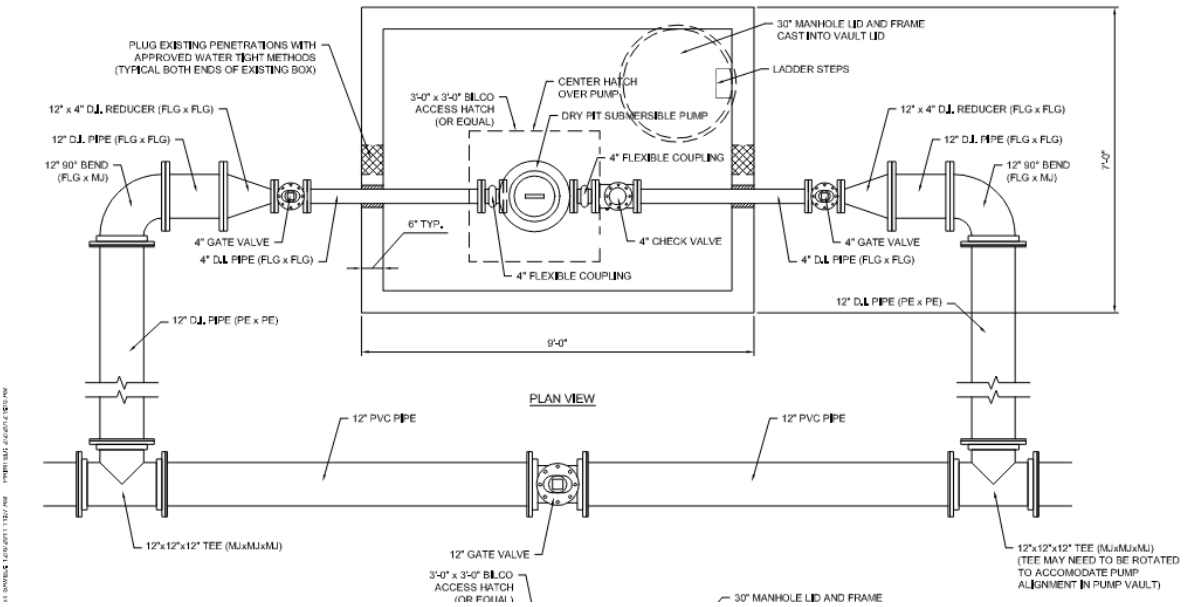
A pump house between Cell 3 and the Winter Storage lagoon is used to house disinfection and pumping equipment. A 40 HP vertical turbine pump is used to pump the treated wastewater to the land application area. The supply line to the land application pump is connected to the gravity line between Cell 3 and the winter storage lagoon. According to the operator, the land application pump can almost completely empty the winter storage lagoon. Figure 2-5 shows the interconnecting piping between the treatment and winter storage lagoons and the land application pump. The vertical turbine pump has a capacity of approximately 330 gpm to the wheel line sprinkler system. A magnetic flow meter is used to measure the pumping rate and total pumped volume for monitoring purposes. A screen on the pump discharge is used to remove debris that may clog the irrigation sprinkler heads and sodium hypochlorite is added for disinfection using a peristaltic pump.

FIGURE 2-5 PIPING



There is a transfer pump that is also connected to the gravity line between Cell 3 and the winter storage lagoon. Originally, the transfer pump was intended to help fully drain the winter storage lagoon. The transfer pump is installed on a bypass line around an isolation valve in the 12-inch gravity line to the winter storage lagoon. When the bypass pump is used, the isolation valve is closed and the transfer pump supplies water from the winter storage lagoon to the land application pump. Water supplied from the transfer pump in excess of what the land application pump uses pushes into the Cell 3 outlet structure and back into Cell 3. According to the operator, operation of the transfer pump was confirmed when it was first installed but has not been used since because the land application pump can completely empty the winter storage lagoon without the transfer pump. Figure 2-5shows the location of the transfer pump, and Figure 2-6 shows the layout of the and configuration of the transfer pump vault.

FIGURE 2-6 CONFIGURATION OF TRANSFER PUMP VAULT



The City of McCammon has one Hydraulic Management Unit (HMU) of 30 acres for land application and has wheel lines for irrigating (70% Irrigation efficiency (Ei = 0.70)). The Irrigation Water Requirement (IWR) for alfalfa and spring grain on this site are 46.9 inches and 34.0 inches respectively, according to the 2020 Wastewater Reuse Annual Report. These IWRs equate to volumes of 38.2 MG for alfalfa and 27.7 MG for spring grain. The permit does not allow any water to be applied during the non-growing season from November 1 through March 31. In 2020, alfalfa was grown on the site, which is planted normally, and the total hydraulic loading was 9.2 MG. The recycled water accounted for 8.6 MG of the hydraulic loading, and the remaining was supplemental irrigation water from a nearby irrigation canal. A 60 HP self-priming centrifugal pump is used to provide the supplemental irrigation water.

Nitrogen is the only nutrient tested during periods of recycled water use and nitrogen loading is limited to 150% of the median crop intake from the three most recent years the crop has been grown, which equates to 59.4 pounds of nitrogen per acre. The 3-year median crop intake from the 2020 Wastewater Reuse Annual Report was 39.6 pounds of nitrogen per acre, which is below the allowable limit.

2.4 CONDITION OF EXISTING FACILITIES

Collection System Condition

Field observation of ten (10) representative manholes was performed to evaluate the condition of the collection system and all of the examined manholes were found to be in good structural condition. Information from the field observation of these manholes, including pictures, can be found in Appendix B.

Field observation of the five lift stations was performed to evaluate their condition as well, and in general the lift station structures appear to be in good condition. Lift Stations 1 and 2 were upgraded in 2019-2020, respectively. Lift Station 5 was installed in 2006-2007 and is in good condition. Lift Station 3 is being upgraded in 2022 similar to the upgrades on Lift Stations 1 and 2. Lift Station 4 is older and lacks capacity for the planning period. Information from the field observation of these lift stations, including pictures, can be found in Appendix B.

Most of the City's gravity collection system was installed between 40 and 50 years ago. Concrete sewer pipe is expected to last 50 years but can last up to 100 years, depending on installation and operating conditions. PVC sewer pipe is also expected to last about 100 years. The oldest portion of the sewer piping is likely going to need to be replaced in the next 40 years.

Approximately 3,000 feet of the collection system was cleaned and inspected as part of this study. The previous sewer line investigation was performed in 2002. This recent investigation included problem areas and a sampling of other locations throughout the City to assess overall condition of the system. The only issues noted in the video reports were instances of roots at pipe joints and services. Exposed aggregate was not noted. With exception of the roots in the joints, the structural condition of the collection system piping was good.

WWTP Condition

A seepage test was performed in 2018 on Cells 1, 2, and 3 and the Winter Storage Lagoon. DEQ requires a seepage test to determine the actual rate of leakage from the lagoons. An electronic weather station, evaporation pan, and pressure transducer were installed and monitored in accordance with DEQ Wastewater Program "Guidance for Evaluating Wastewater Lagoon Seepage Rates" (August 2016). All of the lagoons were constructed prior to April 15, 2007, which means the maximum allowable seepage rate is 0.25 inches per day. The calculated seepage rates were based on measurements taken while accounting for evaporation for each lagoon, and to be conservative, the measured evaporation was reduced to 75%. The reported seepage rates for each lagoon were:

- 0.071 in./day for Cell 1
- 0.169 in./day for Cell 2
- 0.164 in./day for Cell 3
- 0.362 in./day for Winter Storage Lagoon

The seepage rates for Cells 1, 2, and 3 were below the allowable 0.25 inches per day rate meaning these lagoons are in compliance with the IDAPA requirements. These three lagoons also appear to be in good condition, however the seepage rate for the Winter Storage Lagoon was above the allowable 0.25 inches per day rate, meaning this lagoon is not in compliance with the IDAPA requirements.

It is likely that most of the sludge accumulation will occur in Cell 1, since all the City's wastewater is pumped directly into it and solids are most likely to settle out there before flowing into the other lagoons. Cell 1 was emptied in 2020 to manually remove rags. Sludge accumulation is shown in Figure 2-7. Sludge depths were measured in five locations along the length of the lagoon. Sludge depths varied from 14 inches at the north end to 20 inches at the south end. The lagoon was divided into five segments to estimate total sludge volume. The portion of the lagoon near the inlet had standing water with only 8 inches of loose sludge. The estimated sludge volume totaled 50,800

cubic feet. Based on the Biosolids Report by MTI (see Appendix B), the percent solids of the sludge were 95.85% and the sludge had a unit weight of 53.54 pounds per cubic foot. This equated to water and biosolids volumes of 2,100 cubic feet and 48,700 cubic feet, respectively. The dry biosolids weight is approximately 1,300 tons. The biosolids need to be removed to maximize the treatment capacity of the lagoon. A figure showing the sludge depths is included in Appendix B.

FIGURE 2-7 SLUDGE ACCUMULATION IN CELL 1

A gravel access road was constructed around and between the treatment cells. The road is in good condition with no deficiencies noted. The WWTP and land application area are completely surrounded by a fence, however the fence along the west side of the WWTP between the City property and railroad right-of-way needs to be repaired.

Land Application Condition

The land application systems, including pump, disinfection system, pipeline, and wheel line irrigation system, are in good condition. The operator has observed a gradual decline in the pumping rate from the treated effluent pump which may indicate the need for maintenance. Alfalfa is commonly grown on the land application field, but the site could be leveled to allow for complete use. Also, a ditch and pipe could be relocated to increase the use of the site.

2.5 FINANCIAL STATUS OF EXISTING FACILITIES

Financial information for the City of McCammon sewer utility is provided in Appendix C for the years 2016 through 2020. Sewer Fund revenue during the 2019-2020 fiscal year was $175,779. Annual costs to operate and maintain the wastewater system, separated by type of expense, are also shown in Appendix C. Total expenses from the sewer fund (including debt service interest) for the 2019-2020 fiscal year were approximately $182,478. The end of the 2019-2020 fiscal year total in the Sewer Fund was $1,670,643.

2.6 WATER/ENERGY/WASTE AUDITS

No audits have been performed on the system.

2.7 SYSTEM CLASSIFICATION

Both the Collection System and WWTP are classified as Class I systems. Classifications are determined by the components of the system and the amount of people they service. A Class I system is a small, simple

system without many components. The recycled wastewater is permitted as Class D. System Classification Worksheets are included in Appendix B.

CHAPTER 3 - SYSTEM CAPACITY & PERFORMANCE

The following section evaluates the capacity and performance of the collection system, the wastewater treatment plant (WWTP), and the land application system. The capacity of these systems was determined using information from record drawings and field observations. Current and future flow projections can be found in Chapter 1 and were used to evaluate the performance of these systems.

3.1 CAPACITY

Collection System Capacity

The gravity collection system is comprised of 8-inch and 10-inch concrete sewer lines. The minimum recommended grade to keep the flow at 2 feet per second for the 8-inch and 10-inch pipes is 0.4% and 0.28%, respectively. The recommended maximum flow through the 8-inch and 10-inch pipelines is about 175 and 260 gpm, respectively. The flows seen in the pipes during the CCTV indicate the pipes are not near the maximum capacity. The 8-inch gravity sewer pipelines leading to Lift Stations 1, 2, 3, and 5 are not expected to have flows near 175 gpm in the next 40 years. The 10-inch gravity sewer pipeline leading to Lift Station 4 from the north half of town are expected to have the highest flows of any pipeline in the collection system, the 2060 peak hour flow in this location is estimated to be about 193 gpm, which is less than the maximum pipe capacity. The 8-inch gravity sewer that flows to Lift Station 4 from the south half of town is expected to reach the capacity of the sewer in 2060, at which time the capacity of the line should be reassessed.

Each lift station in the collection system has two pumps, and for redundancy purposes, the firm capacity of a lift station is taken as the flow capacity with the largest pump out of service. Lift Station Nos. 1 and 2 were recently upgraded with Flygt Concertor pumps. The operating point for the pumps in Lift Station 1 is 170 gpm at 34 ft total dynamic head (TDH). The operating point for the pumps in Lift Station 2 is 280 gpm at 22 ft TDH. Lift Station 3 is being upgraded in 2022 with the same pumps. The operating point for Lift Station 3 is 238 gpm at 26 ft TDH. All of the flow from Lift Stations 1-3 eventually ends up at Lift Station 4, and as discussed in Chapter 1, Lift Station 4 has a capacity of approximately 230 gpm. Based on the planning criteria, Lift Station No. 4 currently needs a capacity of approximately 224 gpm (by 2060 the peak hour flow capacity needed is 370 gpm), therefore, Lift Station No. 4 does not have sufficient capacity. Lift Station No. 5 is located next to U.S. Highway 30 and serves the Flying J, Chevron, and other commercial development at the north end of the City. Lift Station No. 5 has a capacity of 320 gpm and, like Lift Station No. 4, pumps directly into the WWTP. The capacity of the pipelines and lift stations, except for Lift Station No. 4, appear to be sufficient for the 2060 planning criteria.

Figure 3-1 shows the lift station services areas and the areas of expected growth within the City. The parcels west of Logan Street and west of State Street near Lift Station 3 are currently zoned R1-Residential with a minimum lot size of 9,000 square feet. We assumed parcels zoned R1 can accommodate approximately 4 lots per acre after accounting for roads. The parcel west of Logan Street slopes to the north and would likely require a lift station at the north end which would discharge to the sewer in Logan Street, then south through the 10-inch sewer to Lift Station 4. The parcel west of State Street would likely fall in the service area for Lift Station 3. For purposes of sizing lift stations and sewer lines, we assumed approximately one half of the projected growth will occur in the parcel west of Logan Street, one half in the parcel west of State Street, and an additional 9 sewer service connections in the service area for Lift Station 5 by 2060.

FIGURE 3-1 LIFT STATION SERVICE AREAS

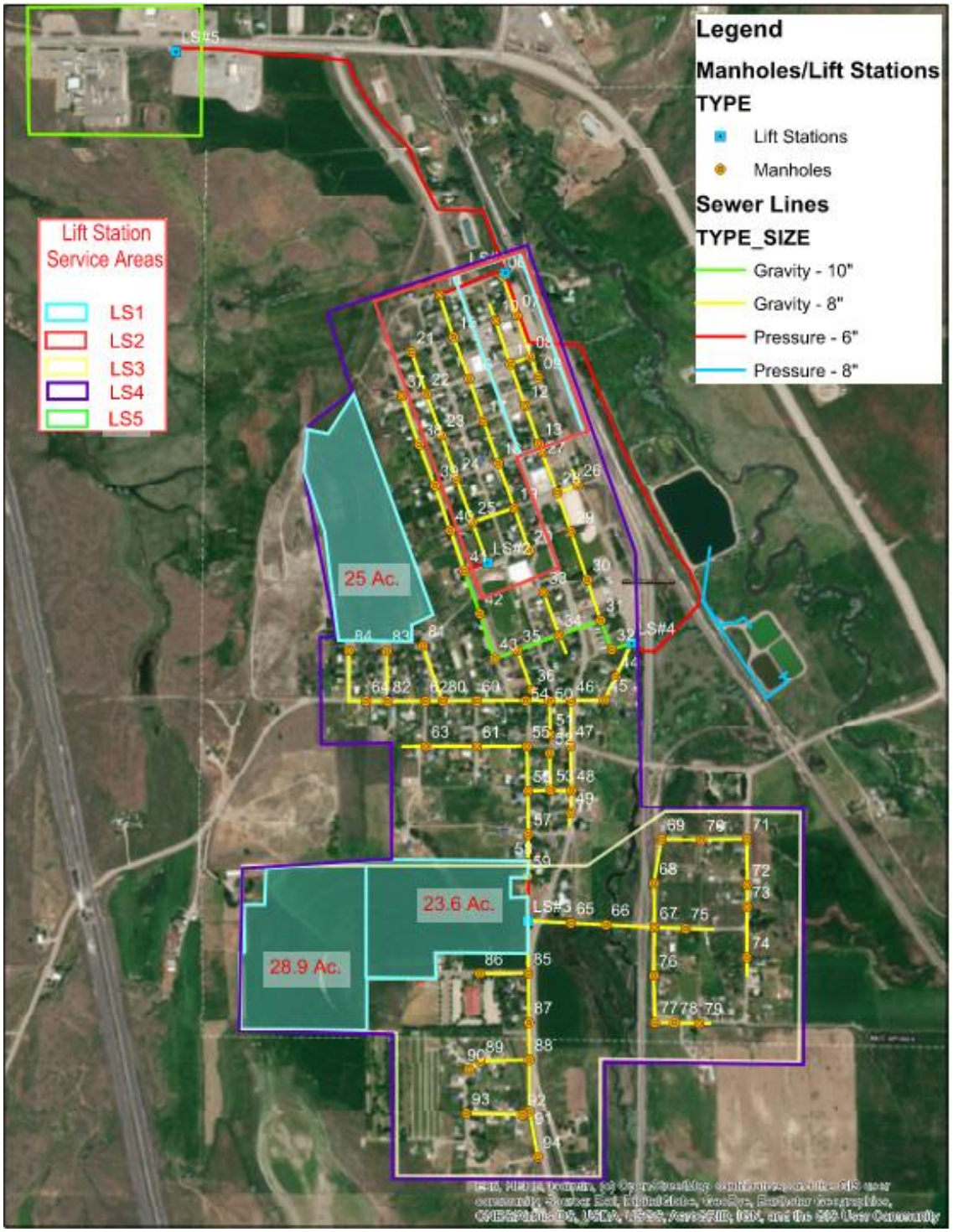


Table 3-1 compares the estimated flows to each lift station with the capacity of the lift station. Since there are no flow meters in the system, flows were proportioned to each lift station based on the number of service connections within the lift station service area. The number of service connections are approximate based on a count of the homes and businesses from aerial imagery.

TABLE 3-1 LIFT STATION CAPACITIES AND FLOWS

Description	Design Criteria	LS1	LS2	LS3	LS4N	LS4S	LS4 Total	LS5
Lift Station Capacity (gpm)	-	170	280	238	-	-	230	320
2020 Connections (approx)	293	27	100	59	154	137	291	2
2020 AADF (gpm)	80	5	20	12	31	27	58	22
2020 PHF (gpm)	310	21	77	45	118	105	224	86
2040 Connections	365	27	100	93	188	171	359	6
2040 PHF (gpm)	380	22	81	75	152	138	289	90
2060 Connections	455	27	100	135	231	213	444	11
2060 PHF (gpm)	466	22	84	113	193	178	370	96

WWTP Capacity

The McCammon WWTP includes two aerated, partially mixed lagoons and one facultative, settling lagoon. This arrangement is in accordance with the Wastewater Rules in IDAPA 58.01.16.493. It should be noted that the influent is from residential and commercial, rather than industrial sources. To evaluate the treatment capacity of the existing treatment lagoons, projected influent flows and loadings from Chapter 1 were used.

Based on the size of the lagoons, the theoretical BOD_5 removal was estimated using the equations for aerated and facultative lagoons from the EPA's Principles of Design and Operations of Wastewater Treatment Pond Systems for Plant Operators, Engineers, and Managers (2011). Detention time and water temperature are the main factors in determining theoretical BOD_5 removal from the lagoons. The evaluation assumed winter conditions, which is when treatment is at its slowest. Assuming a water temperature near freezing, the existing lagoon system is able to achieve approximately 85% BOD_5 removal during a month using the maximum month planning flows for 2020 and 2040. 85% BOD_5 removal was chosen as a treatment goal, as this level of treatment should allow the effluent total coliform limits to be achieved with an appropriate disinfection system.

The WWTP was designed for a population of 1,025. The 2040 expected population connected to the wastewater system is 970. It appears, based on the theoretical removal and the expected population growth, that although the existing lagoons are sufficient, they are approaching their capacity near the end of the 20-year planning period.

Aeration is provided in Cells 1 and 2 by surface aerators with each of these lagoon cells having two (2) 3 HP aerators. It is normally desirable to maintain 2.0 mg/L of dissolved oxygen in the aerated lagoons to ensure adequate oxygen is available. The surface aerators have a combined firm capacity (with one of the aerators out of service) of approximately 320 lbs. oxygen per day. Assuming influent concentrations of 145 mg/L BOD_5 and 30 mg/L TKN, and aeration requirements of 1.5 lbs. O_2/lb. BOD_5 and 4.6 lbs. O_2/lb. TKN, the existing aeration system has firm capacity to handle a maximum flow of approximately 0.11 MGD. The 2020 AADF is 0.115, which means the existing aeration system is currently at capacity.

The WWTP receives influent year-round but only land applies from the Winter Storage Lagoon between April 1 and October 31. A water balance was performed to evaluate the annual storage requirements, which included the influent, precipitation, evaporation, crop evapotranspiration, winter storage, and irrigation season discharge. The water balance did not take into account lagoon seepage as it was assumed the liner would either be repaired or replaced. Alfalfa has been grown most often at the land application site, therefore, alfalfa was used for this evaluation. For 2020 flows, the approximate storage volume needed is 23 million gallons (MG) and for 2040 planning

flows, approximately 29 MG will be needed for storage. The storage capacity of the Winter Storage Lagoon is approximately 13 MG; therefore, additional storage capacity is needed now and in the future.

Land Application Capacity

The land application site is 30 acres in size, so using the irrigation water requirement (IWR) of alfalfa in McCammon, and the 70% irrigation efficiency of the wheel lines, approximately 38 MG of treated effluent can be applied on the 30 acres. The 2020 and 2040 flows are anticipated to result in the need to land apply 35 MG and 46 MG per year, respectively, therefore, the land application area is insufficient for the planning flows and requires expansion. Based on the IWR, and assuming the enhancement to the Winter Storage Lagoon mentioned above, approximately 4 more acres are needed in 2040 (34 acres total).

The irrigation water is pumped from the WWTP at approximately 330 gpm to the wheel line irrigation system. At this flow rate, approximately 396,000 gallons per day (gpd) can be land applied during a 20-hour irrigation period. Based on the water balance, the maximum land application rate occurring in 2040 requires 400,000 gpd, or 307,000 gpd on average over the seven months when irrigation can occur, therefore, the irrigation pump has sufficient capacity to meet the maximum demand in 2040. However, there is a single irrigation pump, so it is imperative that the pump remains operable during the irrigation season. The irrigation pipe also has sufficient capacity for the pump flow rate.

Liquid sodium hypochlorite is injected into the irrigation pump discharge to provide disinfection. To determine the adequacy of the disinfection system, a chlorine contact time is calculated from the injection point to the point of land application. The chlorine contact occurs in the 8-inch irrigation line to the land application site. The pipeline is approximately 5,000 feet in length and at a flow rate of 330 gpm, the contact time is approximately 40 minutes, which is greater than the Ten States Standards recommendation of 15 minutes at the peak pump flow rate (Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environment Managers, 2014).

3.2 PERFORMANCE

Collection System Performance

The sewer CCTV showed that the concrete pipelines are in good condition with the only distress noted in the CCTV reports being roots. There is no indication that the collection system has significant inflow and infiltration (I&I) based on visual observation, and without flow monitoring data at the lift stations or WWTP, it would be difficult to verify I&I. The City will need to install a flow meter with the WWTP improvements to monitor flows to verify the presence or absence of I&I in the system.

Cleaning and maintenance are necessary to prolong the life of pipelines, wet wells, and pumps. CCTV inspection of pipelines allows problems such as cracking, ponding, infiltration/inflow, and grease buildup to be identified early on before larger problems or even failure occurs. The City currently does not have a system-wide CCTV inspection or cleaning program, and as a result, developing a pipeline preservation/rehabilitation program is recommended to organize and track pipeline cleaning, CCTV, and other maintenance. This program should include pipeline cleaning every three years and CCTV inspections every 3-10 years, depending on pipe material. Monitoring conditions over time will allow City staff to optimize the appropriate frequencies for maintenance and refine replacement budgets.

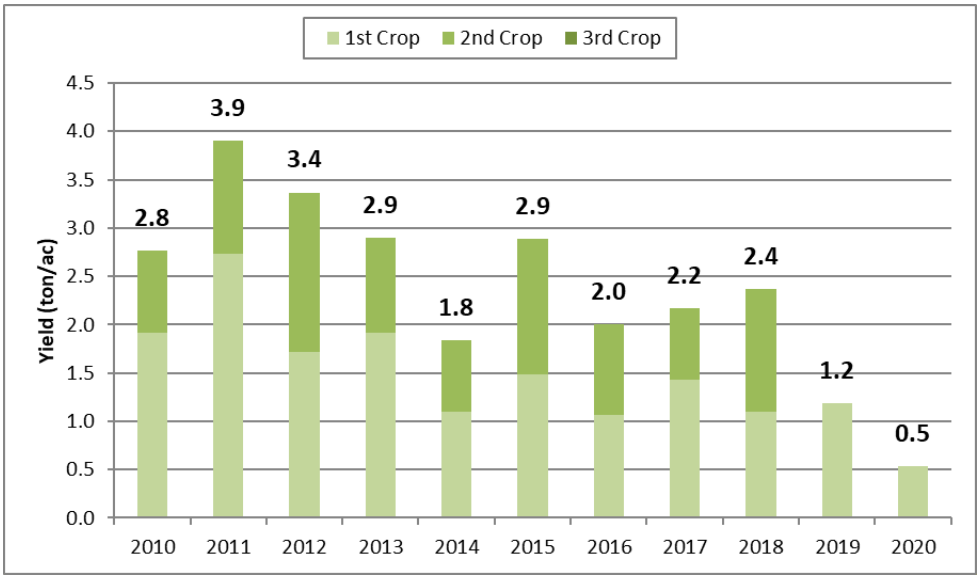
WWTP Performance

WWTP effluent is monitored for total coliform during the irrigation season and is required to meet permitted limits of 2300 CFU/100 mL for a single sample, and an average of 230 CFU/100 mL for three separate samples. In 2016, total coliforms in the effluent surpassed the permitted limit of 2300 CFU/100-mL in a single day. Since that time, as long as the chlorine dosing system has been in operation, the effluent samples have been in compliance with the total coliform limits.

Land Application Performance

Nitrogen loading from all sources (wastewater, supplemental irrigation water, and fertilizer) is limited to 150% of the crop uptake. Typical crop uptake is the median constituent crop uptake from the three most recent years the crop has been grown. In the 2020 Wastewater Reuse Annual Report, the median typical crop uptake from the previous three years was 39.6 lbs. nitrogen per acre (lbs. N/acre), therefore, the nitrogen limit for the land application site is 59.4 lbs. N/acre, which means this crop nitrogen uptake rate is very low and needs to significantly improve. The effluent nitrogen concentration in 2020 was 13.33 mg/L, which equated to a nitrogen loading of 31.8 lbs. N/acre. As the seepage from the Winter Storage Lagoon decreases, more recycled water will need to be land applied. At this effluent nitrogen concentration, without an improvement in the nitrogen crop uptake, only 16 MG could be land applied on the 30-acre site. In order to land apply the anticipated 2040 land application flows, at the nitrogen loading rate of 59.4 lbs. N/acre approximately 86 acres would be needed. Crop yields have also decreased in recent years as shown in Figure 3-2. Fertilizer and replanting is recommended to be considered as a way to improve the crop yield and nitrogen uptake rate.

FIGURE 3-2 CROP YIELDS



CHAPTER 4 - CAPITAL IMPROVEMENT PLAN

The following chapter summarizes the wastewater system needs and provides a capital improvement plan that can best meet the needs. This chapter also includes discussion on project schedule, funding, and user rates.

4.1 NEED FOR PROJECT

Health, Sanitation, and Security

As discussed in Chapter 1, the City of McCammon's Winter Storage Lagoon is leaking more than is allowed, which poses a human health risk due to the potential for groundwater and surface water contamination. Additionally, the fence at the wastewater treatment plant (WWTP) has deteriorated and needs to be repaired in order to secure the site.

Aging Infrastructure

The Winter Storage Lagoon is the oldest lagoon in operation at the WWTP. Age is likely one of the main reasons for the higher leakage due to the materials used to seal the lagoon at the time. Although some of the collection system piping is reaching the expected end of its useful life, based on the analysis performed during this planning study, in general the system appears to be in good shape. However, a replacement budget is recommended for the worst of the sewer lines and a replacement schedule is recommended for the remaining sewer lines during the 40-year collection system planning period.

System Deficiencies

The wastewater deficiencies were discussed in Chapter 3 as well as above, and although the equipment is well maintained, there are some capacity and aging infrastructure issues.

Reasonable Growth

Wastewater facility improvements are needed to stay ahead of growth due to potential increased population and new construction. Chapter 1 of this report discussed population growth projections including customers served, and the wastewater flows associated with this growth.

4.2 DEVELOPMENT OF IMPROVEMENTS

The following sections of this report detail the capital improvement plan proposed to resolve the system deficiencies and capacity limitations that the wastewater facilities are currently facing. The deficiencies and capacity limitations are relatively straight-forward. For instance, the City would like to stay with the current treatment and effluent land application system for the planning period. There are several advantages to this strategy, including already having ownership of the existing land application area, a recently renewed permit, and operators that understand how to operate the facilities.

A No Action alternative is not acceptable as there are several items that need to be addressed, including the leaking Winter Storage Lagoon. Additional Winter Storage volume is needed as well. The No Action alternative would result in fines or other penalties for non-compliance with permit and state regulations. Moreover, the City's deficiencies require greater effort than just having the existing system operate optimally.

4.3 ENVIRONMENTAL IMPACTS

Construction of the project improvements is likely to have a lasting positive impact on the environment. For example, decreasing the seepage from the Winter Storage Lagoon is likely to reduce the risk of contamination to the groundwater and surface water near the lagoon.

Land Use / Prime Farmland / Formally Classified Lands

No changes in land use are expected because it is likely the Winter Storage Lagoon expansion can occur within the footprint of the old WWTP treatment lagoons. Additional farmland for land application is anticipated to be purchased; however, the land use would likely not change.

Floodplains, Wetlands and Water Resources

The improvements are not anticipated to be located inside the 100-year floodplain or in wetland areas. The improvements are expected to be within the footprint of the existing WWTP. Properly sizing the Winter Storage Lagoon will also reduce risk of contamination reaching the Portneuf River or shallow groundwater areas.

Cultural, Biological, and Water Resources

It is not anticipated that the improvements will interfere with cultural resources, again because of the anticipated improvement locations. Impacts to fish, wildlife, and threatened species are not anticipated, and measures will be taken to protect water resources during construction. Additionally, the project is not within sole source aquifer area.

Potential Construction Problems

The groundwater depth and subsurface rock are not expected to pose a problem as the old WWTP treatment ponds are existing. Subsurface investigations were not within the scope of this project, however, construction techniques to effectively manage excavation, dewatering, and sloughing issues should be required of any construction plans. Construction plans should also include provisions to control dust and runoff. In addition, equipment noise is anticipated to be confined to the treatment site during normal working hours.

Sustainability/Green Infrastructure

Sustainable utility management practices include environmental, social, and economic benefits that aid in creating a resilient utility. Land application uses the nutrients in the effluent for crop growth, decreasing fertilizer application.

Water/Energy Efficiency

Water conservation will improve as more of the wastewater effluent is being used for crops. Also, it is likely energy efficiency will increase with the installation of a screen to remove materials from fouling the aerators.

Socio-Economic Conditions

According to the Idaho Department of Commerce, the City of McCammon has a median household income of $54,999 at the time of this writing. For the period between 2012 and 2016 the poverty rate was 13.0%, which is below the state poverty rate of 15.2%, and the average age of McCammon residents was 60 years.

System Classification

The wastewater classifications are currently Class I and are not expected to change with the improvements.

Potential environmental impacts are summarized in Table 4.1

TABLE 4-1 POTENTIAL ENVIRONMENTAL IMPACTS

Environmental Criteria	Wastewater System Alternatives								
	Collection System				Wastewater Treatment				
	LS 3	LS 4	Sewer Repairs	Portable Generator	Influent Screen and Flow Measurem	Biosolids and Aeration	Generator and SCADA	Winter Storage Lagoon and Fence	Land Application Site
Land Use/Important Farmland/Formally Classified Lands	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	Additional Water for Irrigation	Improved Farmland
Floodplains	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Wetlands	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Cultural Resources	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Biological Resources	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Water Quality Issues	No Impact	No Impact	No Impact	No Impact	Improved Effluent Quality	Improved Effluent Quality	Improved Treatment Reliability	Improved Effluent Quality	Improved Effluent Quality
Groundwater Quality Issues	No Impact	No Impact	Improved GW Quality	No Impact	No Impact	No Impact	No Impact	Reduce leakage to improve GW quality	No Impact
Socio-Economic Issues	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts
System Classification	Collection Class I*	Collection Class I	Collection Class I	Collection Class I	Treatment Class I*	Treatment Class I	Treatment Class I	Treatment Class I	Treatment Class I
*Current treatment and collection system classifications do not change with proposed improvements									

4.4 PRELIMINARY PROJECT DESIGN

Collection System Improvements

The following improvements are recommended for the collection system:

- Lift Station 3: Improvements are recommended to Lift Station 3, similar to the improvements made to Lift Stations 1 and 2, which would include replacing piping, valves, pumps, electrical controls, and part of the wet well.
- Lift Station 4: This lift station and the associated pumps are undersized for future flows meaning larger pumps would help meet the future demands.
- Portable Generator: The City's portable backup generator is not operational and should be replaced with a portable backup generator that can run all five lift stations. Lift Stations 1 and 2 had a generator hookup installed with their recent improvements, however, Lift Stations 3, 4, and 5 need a generator hookup installed so that all the lift stations can operate using the backup generator in emergency situations.

Major rehabilitation of the City's gravity collection piping is not anticipated at this time, but it is recommended that the City fix the spots found in the CCTV videos. It is also recommended that the City clean and video these lines every 3-5 years to check for problems. As many of these lines were installed around the same time, it is likely they will need to be replaced around the same time too. The City may want to consider a large replacement project in the future for replacing gravity sewer lines and manholes instead of separate replacement projects to reduce total project costs and increase the chance of receiving funding for the project. Additionally, it is recommended that the City budget for this future replacement project along with budgeting for sewer cleaning, video, and repair work.

WWTP Improvements

As identified in Chapter 3, WWTP improvements are recommended to address deficiencies and capacity limitations. Recommended improvements are described below.

- Influent Screening and Flow Measurement: The WWTP does not currently include any influent screening, which is an important step to protect the WWTP equipment from large debris. In addition to influent screening, flow measurement is recommended to provide data to the City for operations and future planning.

- Biosolids and Aeration: It is recommended that accumulated biosolids be removed from Cell 1 as part of the improvement project, to maximize the treatment volume. Removing the biosolids would also remove the rags in the lagoons to avoid the rags from continuing to foul the aerators. Also, as noted in Chapter 3, additional aeration is needed in Cells 1 and 2 to provide the necessary treatment, and this improvement would increase the aeration capacity.

- Generator and SCADA: A backup generator should be added to ensure influent screening and aeration continue in the event of a power outage. Also, a SCADA system is needed to provide alarms to the operator in the event of equipment failure.

- Winter Storage Lagoon and Fencing: The Winter Storage Lagoon is leaking at an unacceptable rate, and it is undersized for the needed storage. Several locations were considered since the City owns land to the north and south of the existing lagoons, however, there is not enough space to construct a new winter storage lagoon. The City could potentially install the winter storage lagoon in a different part of the City where more land is available, but because of the additional costs of pumping and setback requirements, this alternative was not considered further. Using the existing Winter Storage Lagoon footprint and adding capacity with the two currently abandoned cells to the north would provide sufficient storage. The City will need to remove the biosolids from the bottom of these lagoons and build them up to the proper level to reuse the existing piping. The bottom of the lagoon may need to be raised approximately one foot to provide two feet of separation between the bottom of the lagoon and groundwater. The working depth of the new Winter Storage Lagoon would be approximately 10-11 feet. Currently, the water surface elevation of the Winter Storage Lagoon is approximately 11.5 feet lower than the water surface elevation in the three treatment lagoons. This allows the treated wastewater to flow by gravity to the Winter Storage Lagoon. Calculations in Appendix D show that the depth of the Winter Storage Lagoon could be deepened to approximately 13.7 feet and still have enough head to drive the 2060 Peak Day Flow of 0.465 MGD or 323 gpm by gravity from Cell 3 to the Winter Storage Lagoon. There is no redundancy for the irrigation pump, so regular maintenance in the off-season and spare parts are recommended (not a capital improvement) to allow repairs to be quickly performed and ensure the reliability of the irrigation system.

The fence to the west of the Winter Storage Lagoon, parallel to the railroad, is in poor condition. The fence needs to be repaired in addition to a new fence that needs to be installed around the existing and future winter storage lagoons. The three treatment cells have a separate fence around them that is in good condition and will not need to be replaced.

Land Application Improvements

The following are the land application improvements needed:

- Additional Land: Approximately 4 more acres of land will be needed by 2040 based on the hydraulic loading. The existing land application field has a ditch with some trees and a buried pipe that prevent a portion of the site from being used. If the pipe and trees were removed, the City could request the additional acres be included in the permit for land application. The site also needs to be regraded to allow for planting and farming. The excess material from the embankment could possibly be used for fill material at the expanded Winter Storage Lagoon. It is anticipated that these land improvements will increase the alfalfa nitrogen uptake rate, so the nitrogen loading does not constrain how much water can be land applied.

4.5 ENGINEER'S OPINION OF PROBABLE COSTS

The summary of the improvement costs is shown in Table 4-2. The costs shown are planning-level estimates and can vary depending on market conditions. The costs are a Class 5 cost opinion by the Association for the Advancement of Cost Engineering (AACE), which is the industry standard for planning-level estimates. The range of accuracy for a Class 5 cost estimate is broad (-50 to 100%) due to the uncertainty in specific design requirements and the economic climate when a project is bid. In addition, the costs are based on experience with similar recent wastewater improvement projects. For the most part, the total estimated probable project costs include contractor markups and 30% contingencies (which is typical of a planning-level estimate), costs for engineering design, construction management services, inspection, as well as administrative costs. These estimated costs should be updated as the project is further refined in the predesign and design phases.

TABLE 4-2 CAPITAL IMPROVEMENT PLAN

ID#	Improvement Item	Purpose(s)	Total Estimated Cost (2022)
Priority 1 Improvements			
CS 1.1	Lift Station No. 3	Upgrade Old Lift Station	$ 313,000
CS 1.2	Portable Generator	Provide Backup Power for Lift Stations	$ 65,000
CS 1.3	Sewer Repairs	Repair/Replace Problem Areas	$ 1,000,000
CS 1.4	Lift Station No. 4	Provide Capacity/Update to Current Codes	$ 509,000
TP 1.1	Influent Screen and Flow Measurement	Protect Equipment and Measure Flow	$ 1,000,000
TP 1.2	Biosolids and Aeration	Provide Capacity	$ 500,000
TP 1.3	Generator and SCADA	Provide Backup Power for WWTP and Alarms	$ 410,000
TP 1.4	Winter Storage Lagoon and Fence	Add Capacity and Protect Public	$ 2,050,000
TP 1.5	Land Application	Provide Additional Capacity	$ 205,000
	Total Priority 1 Improvements		**$ 6,052,000**
TOTAL WASTEWATER IMPROVEMENTS COSTS			**$ 6,052,000**

The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in 2022 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from

4.6 ANNUAL REPLACEMENT COSTS

The project will result in additional electrical usage for the lagoon aeration system and influent screening; however, the new equipment should result in less downtime and treatment issues. The anticipated operation and maintenance costs are shown in Table 4-3. The table includes a recommended annual cost for sewer cleaning, CCTV, and collection system repair of $80,000. This value is based on the assumptions that 3,000 feet or 10 percent of the collection system will be replaced with this project, and the entire collection system has a life span of 100 years, so the City should assume 1% of the value of the collection system will need to be put toward the replacement each year.

TABLE 4-3 ANNUAL O&M COSTS

Component	Existing O&M Costs	Proposed O&M Cost	Net Increase
Electricity and Fuel	$9,000	$12,000	$3,000
Chemicals	$3,000	$5,000	$2,000
Disposal	$0	$2,000	$2,000
Parts	$6,000	$12,000	$6,000
Personnel and Supplies	$58,000	$77,000	$19,000
Miscellaneous	$1,000	$1,000	$0
Sewer Cleaning, CCTV, and Repair	$0	$72,000	$72,000
TOTAL	**$77,000**	**$181,000**	**$104,000**

No major operational staff changes are anticipated with these improvements, and the WWTP classification is not anticipated to be affected either. Wastewater classification worksheets for collection and treatment based on the proposed improvements are included in Appendix B.

4.7 PERMIT REQUIREMENTS

The current Wastewater Reuse Permit began in 2018 and expires on October 1, 2028. It is important to note, the renewal application is due six months prior to this expiration date on April 1, 2028. The Wastewater Reuse Permit requires static ground water level measurements monthly in 2027 only, however, the existing monitoring wells are not classified as compliant for ground water level measurements. The reuse site is permitted to apply Class D recycled wastewater which is defined by DEQ as “the median number of total coliform organisms does not exceed 230 CFU/100 mL, as determined from the bacteriological results for the last 3 days for which analysis have been completed. No sample shall exceed 2,300 CFU/100 mL in any confirmed sample.” A weekly coliform sample must be collected for the first three weeks of wastewater application and then monthly thereafter.

Total nitrogen is to be analyzed monthly during periods of recycled water use. In the year 2023 only, total phosphorus, TDS, VDS, and NVDS must also be tested monthly during recycled water use, which means the irrigation canal water will be tested in April and August of 2023 for total nitrogen, total phosphorus, and NVDS. Sampling of the soils is required in March or April of 2020 and 2023 only and the constituents sampled include pH, plant available phosphorus, nitrate nitrogen, ammonium nitrogen, and electrical conductivity. Crop tissue analysis is required for each harvest from the site including moisture content, total combustible nitrogen, nitrate nitrogen, phosphorus as N, and ash. Daily flow meter readings are required for the recycled water as well as pump run times and hour meter readings and volume conversions for the supplemental irrigation water.

4.8 PROJECT SCHEDULE

The City may choose to construct the projects separately or complete them all at once as project funding can be obtained. In past projects, residents of other cities prefer one increase over multiple increases over several years. Table 4.4 shows the CIP Schedule.

TABLE 4-4 CIP SCHEDULE

ID#	Item	Cost	Opinion of Probable Costs (2022 Dollars)		
			2022	2023	2024
Priority 1 Improvements (2020-2025)					
CS 1.1	Lift Station No. 3	$ 313,000	$ 313,000		
CS 1.2	Portable Generator	$ 65,000		$ 65,000	
CS 1.3	Sewer Repairs	$ 1,000,000		$ 100,000	$ 900,000
CS 1.4	Lift Station No. 4	$ 509,000		$ 50,000	$ 459,000
TP 1.1	Influent Screen and Flow Measurement	$ 1,000,000		$ 500,000	$ 500,000
TP 1.2	Biosolids and Aeration	$ 500,000		$ 50,000	$ 450,000
TP 1.3	Generator and SCADA	$ 410,000		$ 41,000	$ 369,000
TP 1.4	Winter Storage Lagoon and Fence	$ 2,050,000		$ 1,025,000	$ 1,025,000
TP 1.5	Land Application	$ 205,000		$ 20,000	$ 185,000
Total (rounded)		**$ 6,052,000**	**$ 313,000**	**$ 1,851,000**	**$ 3,888,000**

The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in 2019 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that

4.9 FUNDING ALTERNATIVES

The section below presents several alternatives for funding the capital improvements, such as grants, loans, and City funding. The City can apply for multiple grants at once to improve the likelihood of receiving grant funding for the capital improvements.

Idaho Department of Environmental Quality (State Revolving Fund (SRF)

The SRF program is funded by a combination of repayment of loans previously made by DEQ and grant money supplied by the Environmental Protection Agency (EPA). Owners of public wastewater systems can apply for SRF funds annually through a competitive application process, which applications are ranked by state officials based on need, sustainability, water quality improvements, and other criteria. Note, Davis-Bacon Wage Act and American Iron and Steel Requirements apply. Applicants may qualify for principal forgiveness or other subsidy programs. DEQ is required to commit a significant percentage of available loan funds to sustainable, energy efficient, and “green” infrastructure improvements and consequently, elements that meet the “green” infrastructure qualifications may receive priority for funding. In addition, voter approval in a bond election or through judicial confirmation is required for this funding source.

In addition to a traditional SRF loan, the City has been offered an American Rescue Plan Act (ARPA) grant of $1,504,495. It is anticipated that the requirements for the ARPA grant will be similar as for an SRF loan.

Idaho Department of Commerce and Community Development Block Grants (CDBG)

The Idaho Department of Commerce offers a number of grant programs for public wastewater system improvements and eligibility for these funds is dependent on economic development. There is an annual application window for applying for these funds with grants up to $500,000 available through community programs. Applicants must secure the services of a certified grant administrator to administer grant money and follow other grant requirements.

U.S. Department of Agriculture-Rural Development (USDA-RD)

USDA-RD offers a grant and loan program for improvements to wastewater systems that serve rural communities which is defined as systems that serve less than 10,000 people as is the case in the City of McCammon. Grants up to 45% of the project cost are eligible depending on user rates, and applicants can apply for USDA-RD funds anytime during the year. Funds have many program requirements including the completion of a short-lived asset inventory, approved engineering report, and others. Voter approval in a bond election or through judicial confirmation and interim financing are required with this funding source.

U.S. Army Corps of Engineers (Section 595)

The USACE can sometimes offer money for water-related infrastructure projects to supplement funding from DEQ or USDA-RD. Funding availability depends on an appropriation from Congress varying from year to year and costs are shared with a 25 percent local match required.

Idaho Bond Bank

A bond bank is a state level entity which lends money to local governments within the state, with the goal of providing funds for their infrastructure needs and access to the capital markets at competitive interest rates. Under the Idaho Bond Bank program "IBBA", a municipality obtains a loan from the Bond Bank secured by either the municipality's bond or a loan agreement with the Bond Bank. The Bond Bank pools several loans to municipalities into one bond issue then the municipalities repay the loan, and those repayments are used to repay the revenue bonds. The Bond Bank can obtain better credit ratings, more attractive interest rates, and lower underwriting costs than municipalities could achieve individually. The Bond Bank is able to pledge certain state funds as additional security for its bonds, further reducing interest costs. The Idaho Bond Bank Authority can open doors to municipalities that were previously barred from the capital markets due to the high costs of financing or challenging credit situations.

Local & Private

In addition to federal and state funding programs, there are local and private funding sources available to communities. Some of these include a local improvement district (LID), the municipal bond market with voter approval or judicial confirmation, a business improvement district (BID), urban renewal district, connection fees, development agreements with developers, and others.

Cash Funding

The City could consider raising rates to cash finance the improvements which would require the least total cash outlays for the City. However, the rates would be higher than if they were spread out over a long-term loan, which could be a significant hardship to the community. Cash funding would also require the City to hold off on the improvements until the funds have been raised.

4.10 USER RATE ANALYSIS

Monthly sewer user rates are currently $48. Table 4-5 shows the total monthly cost per user including the ARPA grant from DEQ, and assuming a $500,000 Block Grant, and a 25% grant, 75% loan from USDA-RD. The right-hand column illustrates the impact on monthly user rates for every $1,000,000 borrowed from USDA-RD. With monthly user rates of close to $109 based on the funding scenario assumed in the table, user rates will exceed two percent of the Median Household Income of $54,999, which is

considered by DEQ to be the upper threshold of affordability. The City will need to look for additional funding to make the project affordable for its residents.

TABLE 4-5 TOTAL MONTHLY COST PER USER

	USDA-RD 25% Grant, ARPA, CDBG	USDA-RD Per $1M
Project Total	$ 6,052,000	$ 1,000,000
DEQ/ARPA Grant	$ 1,504,495	
Block Grant	$ 500,000	
Subtotal	$ 4,047,505	$ 750,000
USDA-RD Grant	$ 1,011,876	$ 250,000
USDA-RD Loan Amount	$ 3,035,629	$ 750,000
Term (years)	40	40
Interest Rate	2.25%	2.25%
Annual Debt Service - New Debt	$115,892.35	$28,633.03
Monthly Debt Service - New	$ 9,657.70	$ 2,386.09
Users	293	293
Monthly Debt Service per User	$ 32.96	$ 8.14
Debt Service Reserve per User	$ 3.30	$ 0.81
Current User Rate	$ 43.00	
Total Monthly Fixed (Debt + Reserves) Costs p	$ 79.26	$ 8.96
Monthly O&M increase	$ 8,667	
Total Monthly Variable Costs per User	$ 29.58	$ -
Total Monthly Cost per User	**$ 108.84**	**$ 8.96**

Appendix A

Environmental Documentation

- Wastewater Reuse Permit Number M-192-03
- NRCS Threatened and Endangered Species
- USFWS Threatened and Endangered Species
- FEMA Flood Maps

Public Participation

- February 10, 2021 Chapters 1 and 2 Summary
- July 13, 2022 Draft Capital Improvement Plan
- September 15, 2022 City Council Presentation Information

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Idaho Department of Environmental Quality
Reuse Permit
M-192-03

The City of McCammon (hereafter "permittee") is hereby authorized to construct, install, and operate a reuse facility in accordance with:
(1) this permit;
(2) IDAPA 58.01.17 "Recycled Water Rules";
(3) an approved Reuse Plan of Operation; and
(4) all other applicable federal, state, and local laws, statutes, and rules.

This permit is effective from the date of signature and expires on OCTOBER 1, 2028

Signature

OCTOBER 2, 2018
Date

Bruce Olenick
Regional Administrator
Pocatello Regional Office
Idaho Department of Environmental Quality

Department of Environmental Quality
Pocatello Regional Office
444 Hospital Way, Building #300
208-236-6160
Pocatello, ID. 83201

Contents

1. Abbreviations and Definitions

cwt	a unit of weight measurement equal to 100 pounds
DEQ	Idaho Department of Environmental Quality
DEQ Guidance	DEQ Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater, latest revision
Director	Director of the Idaho Department of Environmental Quality or designee unless otherwise specified
EPA	Environmental Protection Agency
E_i	irrigation efficiency
GW	prefix for ground water reporting serial number
IDAPA	Idaho Administrative Procedures Act
IDWR	Idaho Department of Water Resources
IWR	irrigation water requirement - any combination of wastewater and supplemental irrigation water applied at rates commensurate to the moisture requirements of the crop, and calculated monthly during the growing season (GS). The equation used to calculate the IWR is: $IWR = P_{def}/E_i$
LG	prefix for lagoon reporting serial number
MG	million gallons
mg/kg	milligram per kilogram
mg/L	milligram per liter
MU	prefix for management unit reporting environmental serial number
NPDES	National Pollutant Discharge Elimination System
P_{def}	precipitation deficit - is synonymous with the net irrigation water requirement of the crop and for the purposes of this permit can be found at the following website http://data.kimberly.uidaho.edu/ETIdaho/
PO	plan of operation
QAPP	quality assurance project plan
Responsible Official	is the facility contact person authorized by the Permittee to communicate with DEQ on behalf of the Permittee on any matter related to the permit, including without limitation, the authority to communicate with and receive notices from DEQ regarding notices of violation or non-compliance, permit violations, permit enforcement, and permit revocation. The Responsible Official is also responsible for providing written certification of permit application materials, annual report submittals, and other information submitted to DEQ as required by the permit. Any notice to or communication with the Responsible Official is considered a notice to or communication with the Permittee.

	The Responsible Official may designate an Authorized Representative to act as the facility contact person for any of the activities or duties related to the permit, except signing and certifying the permit application, which must be done by the Responsible Official. The Authorized Representative shall act as the Responsible Official and shall bind the Permittee as described in this definition. Designation of the Authorized Representative shall follow the requirements specified in Section 6.1.3 of the permit.
SU	prefix for soil monitoring unit reporting serial number
SW	prefix for supplemental irrigation water reporting serial number
WW	prefix for wastewater reporting serial number

2. Facility Information

Information Type	Information Specific for This Permit
Type of recycled water	Municipal Class D
Method of treatment and reuse	Preliminary treatment via regulated flow through the established 3-cell, facultative and aerated lagoon system. Recycled water is sent from cell 3, to the winter storage lagoon. Disinfection of recycled water to Class D recycled water standards occurs following the winter storage lagoon. Recycled water is used for crop irrigation via slow rate land application.
Facility legal location	NW ¼ of the SW ¼ Section 18 in Township 9 South, Range 37 E
Facility mailing address **Phone** **Fax** **E-mail**	P.O. Box 9 McCammon, ID 83250 Phone 208-254-3200 Fax 208-254-3844 khall@pocatello.us
Facility contact information	Responsible Official: • Karlene Hall, Mayor
Ground Water	Depth to seasonally high ground water 3.08 ft. in June, 8.08 ft. in September, at the winter storage lagoon. Depth to water at the land application site varies from 15-60 feet bgs, (Listed in the 2013 annual report). The reuse area is not within the boundaries of a nitrate priority area. Public Water Supply wells > 1000 feet Groundwater flow toward the northwest
Surface Water	Town-site Lateral Canal (seasonal), Portneuf River adjacent to the treatment lagoons, and closest point 900 feet north of the winter storage lagoon. Beneficial uses: Cold water communities, salmonid spawning, and secondary contact recreation

3. Compliance Schedule for Required Activities

Compliance activity number and Completion due date	Compliance activity description
CA-192-01 One year prior to permit expiration	**Pre-Application Conference:** If the Permittee intends to continue operating the wastewater reuse facility beyond the expiration date of this permit, the Permittee shall contact DEQ and schedule a pre-application conference to discuss the compliance status of the facility and the content required for the recycled water reuse permit application package.
CA-192-02 Six months prior to permit expiration	**Permit Renewal Application:** The Permittee shall submit to DEQ a complete permit renewal application package, which fulfills the requirements specified at the pre-application conference identified in CA-192-01.

4. Permit Limits and Conditions

4.1. Management Unit Descriptions

Serial Number	Description	Type of recycled water allowed	Irrigation System Type and Irrigation Efficiency (E_i)	Acres
MU-192-01	Management Unit	Class D	Wheel lines (E_i = 0.70)	30
			Total acreage	30

a. Maximum acres represent the total permitted acreage of the MU as provided by the Permittee. If the Permittee uses less acreage in any season or year, then loading rates shall be presented and compliance shall be determined based on the actual acreage used during each season or year.

4.2. Hydraulic Loading Limits, Vegetation, and Grazing

Serial Number	Growing season hydraulic loading	Non-growing season maximum hydraulic loading
MU-192-01	Substantially at the crop specific irrigation water requirement (IWR) The source of P_{def} data used to calculate the IWR shall be specified in the PO.	Non-growing season application is not allowed

4.3. Constituent Loading Limits

Serial Number	Constituent loading (from all sources)			
	Nitrogen (lb per acre)[a]	Phosphorus (lb per acre)	Salt (Non-volatile dissolved solids, NVDS) (lb per acre)	COD (lb per acre)
MU-192-01	150% of crop uptake	N/A	N/A	N/A

a. Typical crop uptake is the median constituent crop uptake from the 3 most recent years the crop has been grown. For crops having fewer than three years of on-site crop uptake data, other crop yield data or nutrient content values may only be used if DEQ provides written approval before use.

N/A indicates not applicable as a limited constituent at this time.

4.4. Management Unit Buffer Zones, Fencing, and Posting

Class D Recycled Water- sprinkler irrigation in a rural area

Serial Number	Buffer Distances (in feet) from Hydraulic Management Units					
	Public Water Supplies	Private Water Supplies	Inhabited Dwellings	Permanent and Intermittent Surface Water	Irrigation Ditches and Canals	Areas Accessible to the Public
MU-192-01	1,000	500	500	100	50	300

4.5. Other Permit Limits and Conditions

Category	Permit Limits and Conditions
Growing Season	April 1 through October 31 (214 days)
Non-growing Season	November 1 through March 31 (151 days)
Reporting Year for Annual Loading Rates	November 1 through October 31
Disinfection limits in Class D recycled water Applied to MU-192-01	Class D: The median number of total coliform organisms does not exceed two hundred thirty (230) per one hundred (100) milliliters, as determined from the bacteriological results of the last three (3) days for which analyses have been completed. No sample shall exceed two thousand three hundred (2300) organisms per one hundred (100) milliliters in any confirmed sample.
Crop or vegetation restrictions	Refer to 58.01.17.602.02, Table 3 which specifies the type of crop or vegetation that can be grown based of the class of municipal recycled water used.
Grazing	Grazing is allowed according to the Grazing Management Plan in the Plan of Operation (PO), once approved by DEQ.
Posting for Class D	For the public, signs must be posted around the perimeter of the irrigation site stating that recycled water is used and is not safe for drinking or human contact. Signs shall be posted and must state "Warning: Recycled Water - Do Not Enter", or equivalent signage both in English and Spanish.
Fencing	Three-wire fencing minimum required around the treatment lagoons, the winter storage lagoon, and hydraulic management unit MU-192-01.
Operator Licensure	The wastewater treatment facility and reuse system shall be operated by personnel certified and licensed in the State of Idaho wastewater operator training program at the operator class level specified in IDAPA 58.01.16.203 of the Wastewater Rules and properly trained to operate and maintain the system.
Construction Plans & Specifications	Pursuant to IC§39-118, detailed plans and specifications shall be submitted to DEQ for review and approval prior to construction, modification, or expansion of any wastewater treatment, storage or conveyance facilities or structures. Within 30 days of completion of construction, the Permittee shall submit as-built plans for review and approval or a letter from an Idaho registered Professional Engineer certifying that the wastewater facilities or structures were constructed in substantial accordance with the approved plans and specifications
Backflow prevention and testing requirements	Backflow prevention is required to protect surface water and ground water from an unauthorized discharge of recycled water or wastewater. Refer to section 9.1.1 of this permit.
Records retention requirements	Keep records generated to meet the requirements of this permit for the duration of permit, including administrative extensions, plus 2 years.

5. Monitoring Requirements

5.1. Recycled Water and Irrigation Water Monitoring, Sampling, and Analyses

5.1.1. Microbial and Constituent Monitoring

Monitoring point serial number and location	Sample description	Sample type and Frequency	Constituents (units in mg/L unless otherwise specified)
WW-192-01 Recycled water sampling point following final treatment and disinfection, just prior to land application	Recycled water after chlorination and before application to MU-192-01	24-hour composite sample a minimum of four (4) individual aliquots evenly distributed by volume and over time. Reported monthly for MU-192-01, during periods of recycled water use	Each year: - Total nitrogen In the year 2023 only: - Total phosphorus - TDS - VDS - NVDS
		Monthly Grab Sample Reported monthly for MU-192-01 during periods of recycled water use In order to calculate the median coliform limits: A minimum of 3 weekly samples will be collected in the first month, (or 30 days) of operation (when operating) each year to determine compliance with the Class D disinfection standards listed in Table 4.5 of this permit Return to standard sampling thereafter, once the minimum number of confirmed samples are taken and recorded.	Each year: -Total Coliform (CFU/100 mL)
SW-192-01 Irrigation canal	Irrigation water prior to mixing with recycled water, and prior to being applied to MU-192-01	Grab sample Twice - April and August of 2023 when irrigating	- Total nitrogen - Total phosphorus - NVDS

5.1.2. Flow Monitoring

Monitoring point serial number and location	Sample description	Sample type and Frequency	Measured Parameter
WW-192-01 Flow meter at the treatment lagoon pump house	Recycled Water volume from LG-192-03 or LG-192-04 after disinfection, prior to application on: MU-192-01	- Daily meter reading. - Monthly, seasonal, and annual compilation of data	- Daily recycled water volume (MG per month and depth reported as inches per acre per month)
SW-192-01 Flow meter at the supplemental irrigation water pump	Volume of water from irrigation Canal or other sources to MU-192-01	- Daily flow meter readings, Daily pump run times, or hour meter readings and volume conversions - Monthly, seasonal, and annual compilation of data	- Daily Irrigation water volume when applying (MG per month and depth reported as inches per acre per month)

5.2. Ground Water Monitoring

5.2.1. Ground Water Monitoring Point Descriptions

Monitoring point serial number	Common Designation	Location	Well type
GW-192-01	Well 1	Southeast of the winter storage lagoon	Monitoring well
GW-192-02	Well 2	West of the winter storage lagoon	Monitoring well
GW-192-03	Well 3	Northwest of the Winter Storage Lagoon	Monitoring well

5.2.2. Ground Water Monitoring, Sampling, and Analyses

Monitoring point serial number	Sampling point description	Sample type Frequency	Constituents
GW-192-01 GW-192-02 GW-192-03	Monitoring wells	Monthly- January 2027 to December 2027 To determine seasonal high and low groundwater level for seepage testing the following year	-Static water level (hundredths of a foot)

5.3. Soil Monitoring

5.3.1. Soil Monitoring Unit Descriptions

Monitoring point serial number	Description	Associated MU
SU-192-01	Soil Management Unit	MU-192-01

5.3.2. Soil Monitoring, Sampling, and Analyses

Monitoring point serial number	Sample type (see Note)	Sample frequency	Constituents (units in mg/kg soil unless otherwise specified)
SU-192-01	Composite samples	In March or April, 2020 and 2023 only, prior to recycled water application or fertilizer application.	- pH (standard units) - Plant available phosphorus (Olsen Method) - Nitrate - nitrogen - Ammonium nitrogen - Electrical conductivity (µmhos/cm in saturated paste extract)

a. The number of sample locations specified in the PO or QAPP for each SU shall be sampled. At each location, samples shall be obtained from three depths: 0–12 inches; 12–24 inches; and 24–36 inches or refusal. The samples obtained from each depth shall be composited by depth to yield three composite samples for each soil monitoring unit; one composite sample for each depth.

5.4. Plant Tissue Monitoring

5.4.1. Crop Harvest Monitoring

Associated Hydraulic Management Units	Sample type	Sample Frequency	Parameters [a]
MU-192-01	Harvested portion, each crop, From the management unit. Reported separately by acreage if different crops are grown	Each harvest	- Crop type - Harvest date - Sample collection date - Harvested acreage (acres) - As-harvested ('wet') yield in customary harvested units (tons, bushels, cwt, etc.). - As-harvested (field) moisture content (%) - Dry yield (lb or tons, total yield each harvest)

a. Documentation of reported yields shall be provided for each harvest from each MU.

5.4.2. Plant Tissue Monitoring

Associated Hydraulic Management Units	Sample Type	Sample Frequency	Parameters[a]
MU-192-01	Harvested portion, each crop Reported separately by acreage if different crops are grown	Each harvest	- Moisture content (%); - Total Combustible Nitrogen (%); - Nitrate nitrogen, as N (ppm) - Phosphorus as P (ppm) - Ash (%)

a. Report dry-basis results for all parameters except lab moisture content.

5.5. Lagoon Information

Serial number	Description	Volume (MG)
LG-192-01	Cell 1	2.0
LG-192-02	Cell 2	2.0
LG-192-03	Cell 3	2.0
LG-192-04	Winter Storage Lagoon	13.0

6. Reporting Requirements

6.1. Annual Report Requirements

The Permittee shall submit to DEQ an Annual Report prepared by a competent environmental professional covering the previous reporting year.

6.1.1. Due Date

The Annual Report is due no later than January 31 of each year, which shall cover the previous reporting year.

6.1.2. Required Contents

The Annual Report shall include the following:

1. A brief interpretive discussion of all required monitoring data. The discussion shall address data quality objectives, validation, and verification; permit compliance; and reuse facility environmental impacts. The reporting year for this permit is specified in Section 4.5.
2. Results of the required monitoring as described in Section 5 of this permit. If the Permittee monitors any parameter for compliance purposes more frequently than required by this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Report. The report shall present all monitoring data in organized data summary tables to expedite review.

3. Status of all work described in Section 3 of this permit.
4. Results of all backflow testing, repairs, and replacements required by Section 9.1.1 of this permit.
5. Discussion of major maintenance activities such as major equipment replacement, lagoon liner maintenance, and wastewater treatment and reuse facility maintenance.
6. A summary of all noncompliance events that occurred during the reporting year. Examples of noncompliance events that must be discussed include, but are not limited to: complaints, missed monitoring events, incorrect monitoring dates or frequencies, dry monitoring wells, uncontained spills causing runoff, construction without DEQ engineering plan approval, construction without engineering inspection, and reporting incorrect acreage.
7. Submittal of the calculations and observations for hydraulic management units specified in the table below.
8. All laboratory analytical reports, chain of custody forms, and crop yield documentation.
9. The parameters in the following table:

Monitoring Point Serial Number	Parameter (Calculate for each MU)	Units
MU-192-01	Recycled water loading rate	Million gallons per month, and Inches per month
	Supplemental Irrigation water loading rate	Million gallons per month, and Inches per month
	Irrigation water requirement (IWR) for each crop grown Calculate IWR and report adherence with IWR	Inches per month calculated, and Total inches applied during the GS
	Recycled water nitrogen annually. Phosphorus, and NVDS loading rates first year only	Pounds per acre per year on a monthly and annual basis
	Recycled Water Coliform Sampling, including regular sampling and any confirmatory samples	CFU/100 ml
	Supplemental Irrigation water nitrogen, phosphorus, and NVDS loading rates, first year only	Pounds per acre per year on a monthly and annual basis
	Fertilizer nitrogen and phosphorus application rates, reported separately as elemental N and P	Pounds per acre per year on a monthly and annual basis
	Crop harvest and yield Report each harvest and the annual totals for the MU.	Crop types harvested Total harvested area (acres) Total 'wet' yield (lb/acre per year) Total 'dry' yield (lb/acre per year)
	Crop nitrogen, phosphorus, and ash removal rates (dry-basis) Report each harvest and the annual totals for the MU.	Pounds-N per acre per year Pounds-P per acre per year Pounds Ash per acre per year

6.1.3. Submittals

All applications, annual reports, or information submitted to DEQ as required by this permit shall be signed and certified as follows:

1. Permit applications shall be signed as follows:
   a. For a corporation: by a responsible corporate officer;
   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
   c. For a municipality, state, federal, Indian tribe, or other public agency: by either the principal executive officer or ranking elected official.

2. Annual reports and other information requested by DEQ shall be signed by the responsible official or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   a. The authorization is made in writing by the responsible official;
   b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual having overall responsibility for environmental matters for the company; and
   c. The written authorization is submitted to DEQ.

Submit all applications, annual reports, and other information required by this permit to the following DEQ regional office at this address:

Engineering Manager
Idaho Department of Environmental Quality
Pocatello Regional Office
444 Hospital Way #300
Pocatello, ID 83201

The annual report shall include the following certification statement and be signed, dated, and certified by the Permittee's Responsible Official or Authorized Representative:

"I certify that the information provided in this submittal was prepared in conformance with the Quality Assurance Project Plan required by permit M-014-02, and is to the best of my knowledge, true, accurate and complete and I acknowledge that knowing submission of false or incomplete information may result in permit revocation as provided for in IDAPA 58.01.17.920.01 or other enforcement action as provided for under Idaho law."

Permit applications shall include the following certification statement and be signed, dated, and certified by the Permittee's Responsible Official:

"I certify that the information provided in this submittal is, to the best of my knowledge, true, accurate and complete and I acknowledge that knowing submission of false or incomplete information may result in permit revocation as provided for in IDAPA 58.01.17.920.01, non-issuance of the permit, or other enforcement action as provided for under Idaho law."

Other information submitted to DEQ as required by the permit shall include the above certification statement and be signed, dated, and certified by the Permittee's Responsible Official or duly Authorized Representative.

6.2. Emergency and Noncompliance Reporting

Report noncompliance incidents to DEQ's regional office at 208-236-6160, or 1-800-655-6160

In case of public health emergencies, call the 24-hour Idaho Emergency Medical Services Communications Center number at (800) 632-8000.

Section 8 of this permit and IDAPA 58.01.17.500.06 provide the reporting requirements for facilities.

All instances of permit non-compliance that may endanger public health or the environment and unauthorized discharges to surface waters of the State of Idaho shall be reported to DEQ's regional office by telephone (phone numbers provided in this section) within 24 hours from the time the permittee becomes aware of these events at the phone numbers provided in this section.

A written follow-up shall be provided to the DEQ regional office within five days from the time the permittee became aware of the permit non-compliance or unauthorized discharge.

Reporting of unauthorized discharges to surface waters of the DEQ Idaho Pollutant Discharge Elimination System (IPDES) program may also be required. Contact information for IPDES is provided below:

IPDES Compliance, Inspection, and Enforcement Lead

1410 N. Hilton Street

Boise, ID 83706

833-IPDES24 or 833-473-3724

7. Section 7 – Reserved

8. Standard Permit Conditions

The following standard permit conditions are included as terms of this permit as required by the "Recycled Water Rules," (IDAPA 58.01.17.500).

500. STANDARD PERMIT CONDITIONS.
The following conditions shall apply to and be included in all permits. (4-1-88)

01. Compliance Required. The permittee shall comply with all conditions of the permit. (4-1-88)

02. Renewal Responsibilities. If the permittee intends to continue operation of the permitted facility after the expiration of an existing permit, the permittee shall apply for a new permit in accordance with these rules. (4-1-88)

03. Operation of Facilities. The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, control and monitoring, which are installed or used by the permittee to achieve compliance with the permit or these rules. (4-1-88)

04. Provide Information. The permittee shall furnish to the Director within a reasonable time, any information including copies of records, which may be requested by the Director to determine whether cause exists for modifying, revoking, re-issuing, or terminating the permit, or to determine compliance with the permit or these rules. (4-1-88)

05. Entry and Access. The permittee shall allow the Director, consistent with Title 39, Chapter 1, Idaho Code, to: (4-1-88)

a. Enter the permitted facility. (4-1-88)

b. Inspect any records that must be kept under the conditions of the permit. (4-1-88)

c. Inspect any facility, equipment, practice, or operation permitted or required by the permit. (4-1-88)

d. Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility. (4-1-88)

06. Reporting. The permittee shall report to the Director under the circumstances and in the manner specified in this section: (4-1-88)

a. In writing at least thirty (30) days before any planned physical alteration or addition to the permitted facility or activity if that alteration or addition would result in any significant change in information that was submitted during the permit application process. When the alteration or addition results in a need for a major modification, such alteration or addition shall not be made prior to Department approval issued in accordance with these rules. (4-7-11)

b. In writing thirty (30) days before any anticipated change which would result in noncompliance with any permit condition or these rules. (4-1-88)

c. Orally within twenty-four (24) hours from the time the permittee became aware of any noncompliance which may endanger the public health or the environment at telephone numbers provided in the permit by the Director. (4-1-

d. In writing as soon as possible but within five (5) days of the date the permittee knows or should know of any noncompliance unless extended by the Department. This report shall contain: (4-1-88)

i. A description of the noncompliance and its cause; (4-1-88)

ii. The period of noncompliance including to the extent possible, times and dates and, if the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and (4-7-11)

iii. Steps taken or planned, including timelines, to reduce or eliminate the continuance or reoccurrence of the noncompliance. (4-7-11)

e. In writing as soon as possible after the permittee becomes aware of relevant facts not submitted or incorrect information submitted, in a permit application or any report to the Director. Those facts or the correct information shall be included as a part of this report. (4-1-88)

07. Minimize Impacts. The permittee shall take all necessary actions to eliminate and correct any adverse impact on the public health or the environment resulting from permit noncompliance. (4-1-88)

08. Compliance with "Ground Water Quality Rule." Permits issued pursuant to these rules shall require compliance with IDAPA 58.01.11, "Ground Water Quality Rule." (4-7-11)

9. General Permit Conditions

The following general permit conditions are identical to the cited rules at the time of issuance and are enforceable as part of this permit. Note that the rules cited in this section, and elsewhere in this permit, are supplemented by the rules themselves. Rules applicable to your facility are enforceable whether or not they appear in this permit.

9.1. Operations

9.1.1. Backflow Prevention

Reuse facilities with existing or planned cross-connections or interconnections between the recycled water system and any water supply (potable or nonpotable) or surface water, shall have backflow prevention assemblies, devices, or methods as required by applicable rule or as specified in this permit and approved by DEQ.

For public water systems, backflow assemblies shall meet the requirements of IDAPA 58.01.08.543. Assemblies shall be adequately maintained and shall be tested annually by a certified backflow assembly tester, and repaired or replaced as necessary to maintain operational status.

For domestic water supply wells, backflow prevention devices shall meet the requirements of IDAPA 07.02.04 and shall be adequately operated and maintained.

Irrigation water supply wells shall meet the requirements of IDAPA 37.03.09.36 for preventing any waste or contamination of the ground water resource. Backflow prevention assemblies or devices used to protect the ground water shall be adequately operated and maintained.

Discharge of recycled water to surface water is authorized by the EPA NPDES program. An NPDES permit is required for any discharge to surface water and backflow prevention shall be implemented to prevent any unauthorized discharge.

Backflow prevention assemblies or devices used to protect surface water shall be adequately operated and maintained.

Records of all testable backflow assembly test results, repairs, and replacements shall be kept at the reuse facility along with other operational records, and shall be discussed in the Annual Report and made available for inspection by DEQ. Other approved means of backflow prevention, such as siphons and air-gap structures that cannot be tested, shall be maintained in operable order.

9.1.2. Restricted to Premises

Wastewaters or recharge waters applied to the land surface must be restricted to the premises of the application site. Wastewater discharges to surface water that require a permit under the Clean Water Act must be authorized by the United States Environmental Protection Agency (IDAPA 58.01.16.600.02).

9.1.3. Health Hazards, Nuisances, and Odors Prohibited

Health hazards, nuisances, and odors are prohibited as follows:

- Wastewater must not create a public health hazard or nuisance condition (IDAPA 58.01.16.600.03).
- No person shall allow, suffer, cause or permit the emission of odorous gases, liquids, or solids into the atmosphere in such quantities as to cause air pollution (IDAPA 58.01.01.776.01).
- Air Pollution. The presence in the outdoor atmosphere of any air pollutant or combination thereof in such quantity of such nature and duration and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property, or to interfere unreasonably with the enjoyment of life or property (IDAPA 58.01.01.006.06).

9.1.4. Solids Management

Biosolids are the nutrient-rich organic materials resulting from the treatment of sewage sludge. When treated and processed, sewage sludge becomes biosolids which can be safely recycled and applied as fertilizer to sustainably improve and maintain productive soils and stimulate plant growth.

Biosolids generated from sewage sludge are regulated by EPA under 40 CFR Part 503 and require a DEQ approved sludge disposal plan as outlined in IDAPA 58.01.16.650. Contact DEQ prior to application of biosolids at any permitted reuse facility.

Sludge is the semi-liquid mass produced and removed by wastewater treatment processes. This does not include grit, garbage, and large solids.

Sludge is generated by wastewater treatment processes at municipal and industrial facilities.

Solid Waste is any garbage or refuse, sludge from a waste water treatment plant, water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended.

Solid waste does not include inert wastes, manures and crop residues ultimately returned to the soils at agronomic rates, and any agricultural solid waste which is managed and regulated pursuant to rules adopted by the Idaho Department of Agriculture. DEQ reserves the right to use existing authorities to regulate agricultural waste that impacts human health or the environment.

Solid waste is regulated under IDAPA 58.01.06, "Solid Waste Management Rules." Wastes otherwise regulated by DEQ (i.e. this permit) are not regulated under 58.01.06.

Waste Solids include sludge and wastes otherwise regulated by DEQ in accordance with IDAPA 58.01.06.001.03.a.xii. Waste solids may include vegetative waste, silt and mud containing organic matter, and other non-inert solid wastes.

Inert wastes are defined as non-combustible, nonhazardous, and non-putrescible solids wastes that are likely to retain their physical and chemical structure and have a deminimis potential to generate leachate under expected conditions of disposal, which includes resistance to biological attack.

Waste solids require a DEQ approved sludge disposal plan as outlined in IDAPA 58.01.16.650.

9.1.5. Temporary Cessation of Operations and Closure (IDAPA 58.01.17.801)

Temporary cessation of operations and closure must be addressed as follows:

01. Temporary Cessation. A permittee shall implement any applicable conditions specified in the permit for temporary cessation of operations. When the permit does not specify applicable temporary cessation conditions, the permittee shall notify the Director prior to a temporary cessation of operations at the facility greater than sixty (60) days in duration and any cessation not for regular maintenance or repair. Cessation of operations necessary for regular maintenance or repair of a duration of sixty (60) days or less are not required to notify the Department under this section. All notifications required under this section shall include a proposed temporary cessation plan that will ensure the cessation of operations will not pose a threat to human health or the environment. (4-7-11)

02. Closure. A closure plan shall be required when a facility is closed voluntarily and when a permit is revoked or expires. A permittee shall implement any applicable conditions specified in the permit for closure of the facility. Unless otherwise directed by the terms of the permit or by the Director, the permittee shall submit a closure plan to the Director for approval at least ninety (90) days prior to ceasing operations. The closure plan shall ensure that the closed facility will not pose a threat to human health and the environment. Closure plan approval may be conditioned upon a permittee's agreement to complete such site investigations, monitoring, and any necessary remediation activities that may be required. (4-7-11)

9.1.6. Plan of Operation (IDAPA 58.01.17.300.05)

The PO must comply with the following:

05. Reuse Facility Operation and Maintenance Manual or Plan of Operations. A facility's operation and maintenance manual must contain all system components relating to the reuse facility in order to comply with IDAPA 58.01.16 "Wastewater Rules," Section 425. Manuals and manual amendments are subject to the review and approval provision therein. In addition to the content required by IDAPA 58.01.16.425, manuals for reuse facilities shall include, if applicable: operation and management responsibility, permits and standards, general plant description, operation and control of unit operations, land application site maps, wastewater characterization, cropping plan, hydraulic loading rate, constituent loading rates, compliance activities, seepage rate testing, site management plans, monitoring, site operations and maintenance, solids handling and processing, laboratory testing, general maintenance, records and reports, store room and inventory, personnel, an emergency operating plan, and any other information required by the Department. (4-7-11)

9.1.7. Seepage Testing Requirements (IDAPA 58.01.16.493.02.c)

Subsequent Tests. All lagoons covered under these rules must be seepage tested by an Idaho licensed professional engineer, an Idaho licensed professional geologist, or by individuals under their supervision every ten (10) years after the initial testing. (5-8-09)

9.1.8. Ground Water Quality Rule (IDAPA 58.01.11)

The permittee shall comply with the requirements of "Ground Water Quality Rule" (IDAPA 58.01.11).

9.2. Administrative

Requirements for administration of the permit are defined as follows.

9.2.1. Permit Modification (IDAPA 58.01.17.700)

01. Modification of Permits. A permit modification may be initiated by the receipt of a request for modification from the permittee, or may be initiated by the Department if one (1) or more of the following causes for modification exist: (4-7-11)

a. Alterations. There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit. (4-7-11)

b. New standards or regulations. The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. (4-7-11)

c. Compliance schedules. The Department determines good cause exists for modification of a compliance schedule or terms and conditions of a permit. (4-7-11)

d. Non-limited pollutants. When the level of discharge of any pollutant which is not limited in the permit exceeds the level which may cause an adverse impact to surface or ground waters. (4-7-11)

e. To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions. (4-7-11)

f. When a treatment technology proposed, installed, and properly operated and maintained by the permittee fails to achieve the requirements of the permit. (4-7-11)

9.2.2. Permit Transferable (IDAPA 58.01.17.800)

01. General. A permit may be transferred only upon approval of the Department. No transfer is required for a corporate name change as long as the secretary of state can verify that a change in name alone has occurred. An attempted transfer is not effective for any purpose until approved in writing by the Department. (4-7-11)

9.2.3. Permit Revocation (IDAPA 58.01.17.920)

01. Conditions for Revocation. The Director may revoke a permit if the permittee violates any permit condition or these rules, or the Director becomes aware of any omission or misrepresentation of condition or information relied upon when issuing the permit. (4-7-11)

02. Notice of Revocation. Except in cases of emergency, the Director shall issue a written notice of intent to revoke to the permittee prior to final revocation. Revocation shall become final within thirty-five (35) days of receipt of the notice by the permittee, unless within that time the permittee requests an administrative hearing in writing. The hearing shall be conducted in accordance with IDAPA 58.01.23, Rules of Administrative Procedure before the Board of Environmental Quality." (5-3-03)

03. Emergency Action. If the Director finds the public health, safety or welfare requires emergency action, the Director shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, the Director shall provide the permittee a revocation hearing and prior notice thereof. Such hearings shall be conducted in accordance with IDAPA 58.01.23, Rules of Administrative Procedure Before the Board of Environmental Quality." (3-15-02)

04. Revocation and Closure. A permittee shall perform the closure requirements in a permit, the closure requirements of these rules, and complete all closure plan activities notwithstanding the revocation of the permit. (4-7-11)

9.2.4. Violations (IDAPA 58.01.17.930)

Any person violating any provision of these rules or any permit or order issued thereunder shall be liable for a civil penalty not to exceed ten thousand dollars ($10,000) or one thousand dollars ($1,000) for each day of a continuing violation, whichever is greater. In addition, pursuant to Title 39, Chapter 1, Idaho Code, any willful or negligent violation may constitute a misdemeanor. (4-1-88)

9.2.5. Severability

The provisions of this permit are severable, and if a provision or its application is declared invalid or unenforceable for any reason, that declaration will not affect the validity or enforceability of the remaining provisions.

10. Other Applicable Laws

DEQ may refer enforcement of the following provisions to the state agency authorized to enforce that rule. The Permittee shall comply with all applicable provisions identified in this section, as well as all other applicable federal, state, and local laws, statutes, and rules.

10.1. Owner Responsibilities for Well Use and Maintenance

10.1.1. Well Use

The well owner must not operate any well in a manner that causes waste or contamination of the ground water resource. Failure to operate, maintain, knowingly allow the construction of any well in a manner that violates these rules, or failure to repair or properly decommission (abandon) any well as herein required will subject the well owner to civil penalties as provided by statute. See IDAPA 37.03.09.036.01 and consult the Idaho Department of Water Resources (IDWR) for more information.

10.1.2. Well Maintenance

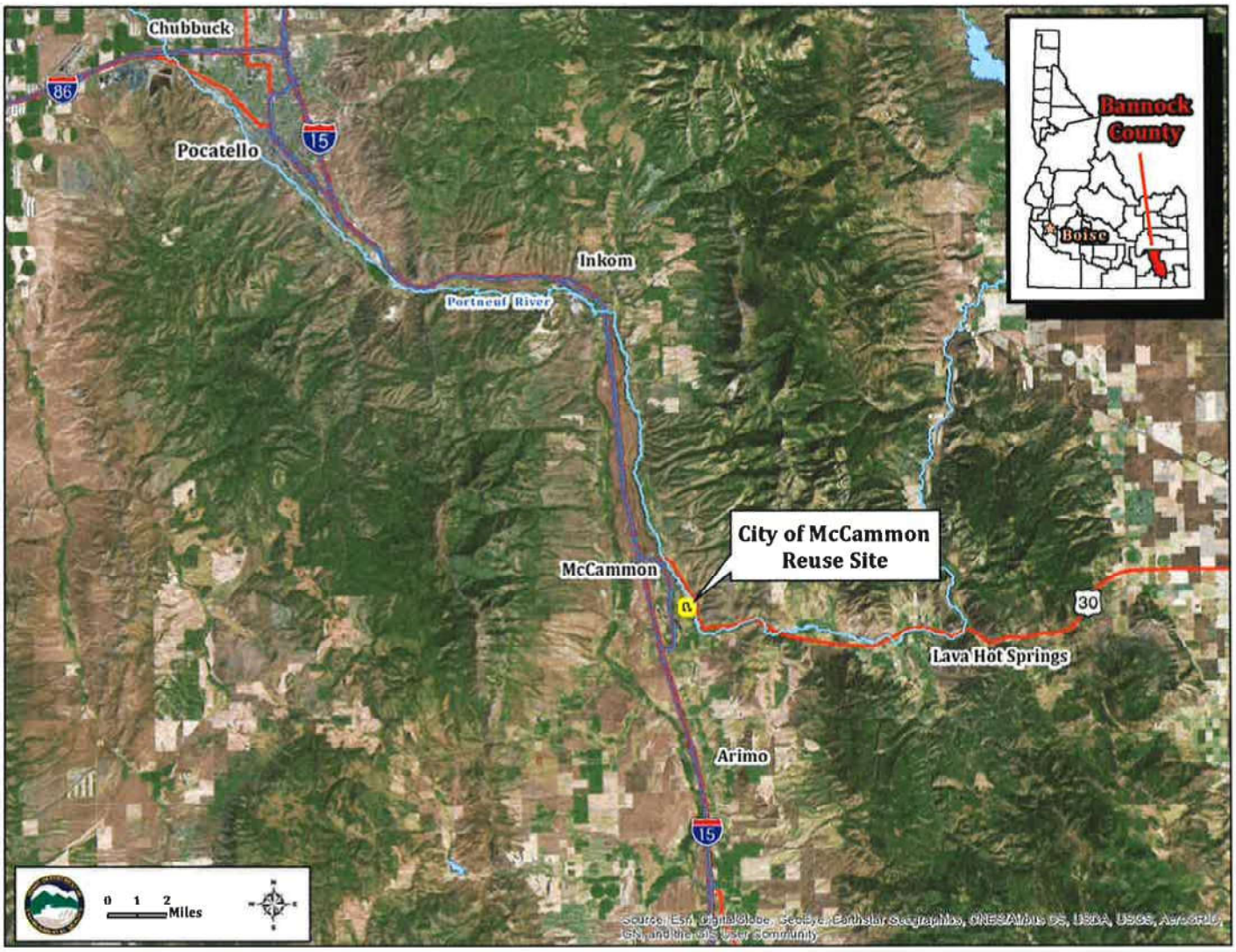
The well owner must maintain the well to prevent waste or contamination of ground waters through leaky casings, pipes, fittings, valves, pumps, seals, or through leakage around the outside of the casings, whether the leakage is above or below the land surface. Any person owning or controlling a noncompliant well must have the well repaired by a licensed well driller under a permit issued by the IDWR director in accordance with the applicable rules. See IDAPA 37.03.09.036.02 and consult IDWR for more information.

10.1.3. Wells Posing a Threat to Human Health and Safety, or Causing Contamination of the Ground Water Resource

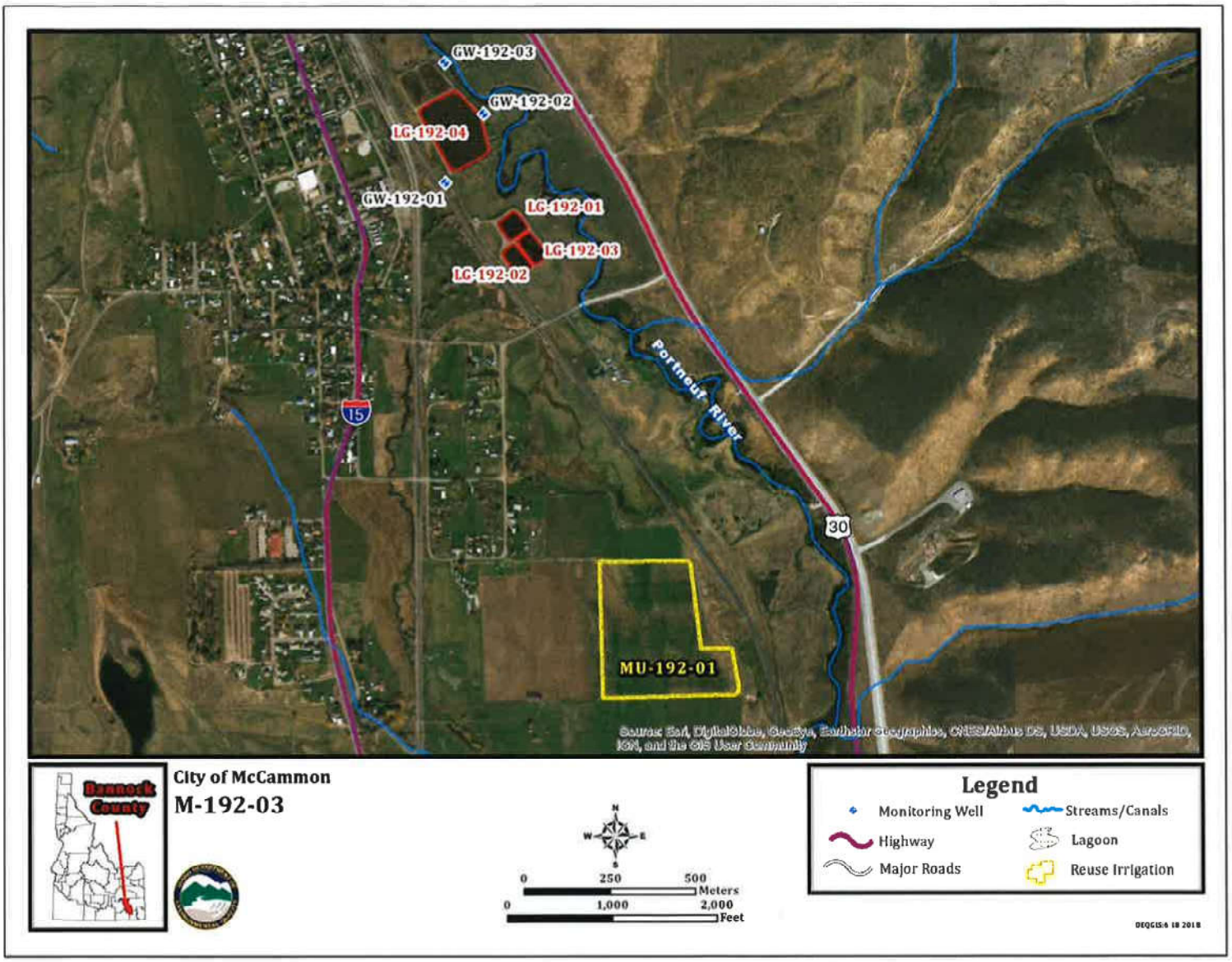
The well owner must have any well shown to pose a threat to human health and safety or cause contamination of the ground water resource immediately repaired or decommissioned (abandoned) by a licensed well driller under a permit issued by the IDWR director in accordance with the applicable rules. See IDAPA 37.03.09.036.06 and consult the IDWR for more information.

Site Maps

Appendix Figure 1. City of McCammon Vicinity Map.



Appendix Figure 2. City of McCammon Management Unit, Lagoons, and Reuse Features



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Click on an accepted name below to view its PLANTS Profile with all synonyms, distribution map, more information, and web links if available. If shown, synonyms are indented beneath accepted counterparts. Click on a column header to learn about that category. Click on the Download link at the top right of the page to download a comma delimited text version of this data to use in another application or database.

Scientific Name	County	Federal T/E Status
Astragalus eremiticus		
Astragalus ampullarioides		Endangered
Howellia aquatilis		T
Mirabilis macfarlanei		T

Time Generated: 01/10/2020 09:51 AM CST

U.S. Fish & Wildlife Service
ECOS

ECOS / Species Reports / Species County Report

Listed species believed to or known to occur in Bannock, Idaho

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit theIPaC application.

CSV

Search:

5 Species Listings

Group	Name	Population	Status	Lead Office	Recovery Plan	Recovery Plan Action Status
Mammals	North American wolverine (Gulo gulo luscus)	Wherever found	Proposed Threatened	6		
Flowering Plants	Ute ladies'-tresses (Spiranthes diluvialis)	Wherever found	Threatened	6	Ute Ladies'-Tresses Draft Recovery Plan	Implementation Progress
Snails	Utah valvata snail (Valvata utahensis)	Wherever found	Original Data in Error - New Information Discovered	1		
Birds	Yellow-billed Cuckoo (Coccyzus americanus)	Western DPS: U.S.A. (AZ, CA, CO (western), ID, MT (western), NM (western), NV, OR, TX (western), UT, WA, WY (western)); Canada (British Columbia (southwestern); Mexico (Baja California, Baja California Sur, Chihuahua, Durango (western), Sinaloa, Sonora)	Threatened	2		
Mammals	Gray wolf (Canis lupus)	Northern Rocky Mountain Distinct Population Segment: Montana, Idaho, Wyoming, eastern Washington, eastern Oregon, and north central Utah	Recovery	6		

Showing 1 to 5 of 5 entries

Previous 1 Next

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

Provisionally Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by June 26, 2009. If the community or owner does not provide the necessary data and documentation or if the data and documenation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713 3242

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Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 3100000 FT — 5000-foot ticks: Idaho State Plane East Zone (FIPS Zone 1101), Transverse Mercator projection
- 4689000mN — 1000-meter Universal Transverse Mercator grid values, zone 12N
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 7, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0514D

FIRM

FLOOD INSURANCE RATE MAP

BANNOCK COUNTY, IDAHO AND INCORPORATED AREAS

PANEL 514 OF 925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BANNOCK COUNTY	160009	0514	D
MCCAMMON, CITY OF	160176	0514	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
16005C0514D
EFFECTIVE DATE
JULY 7, 2009

Federal Emergency Management Agency

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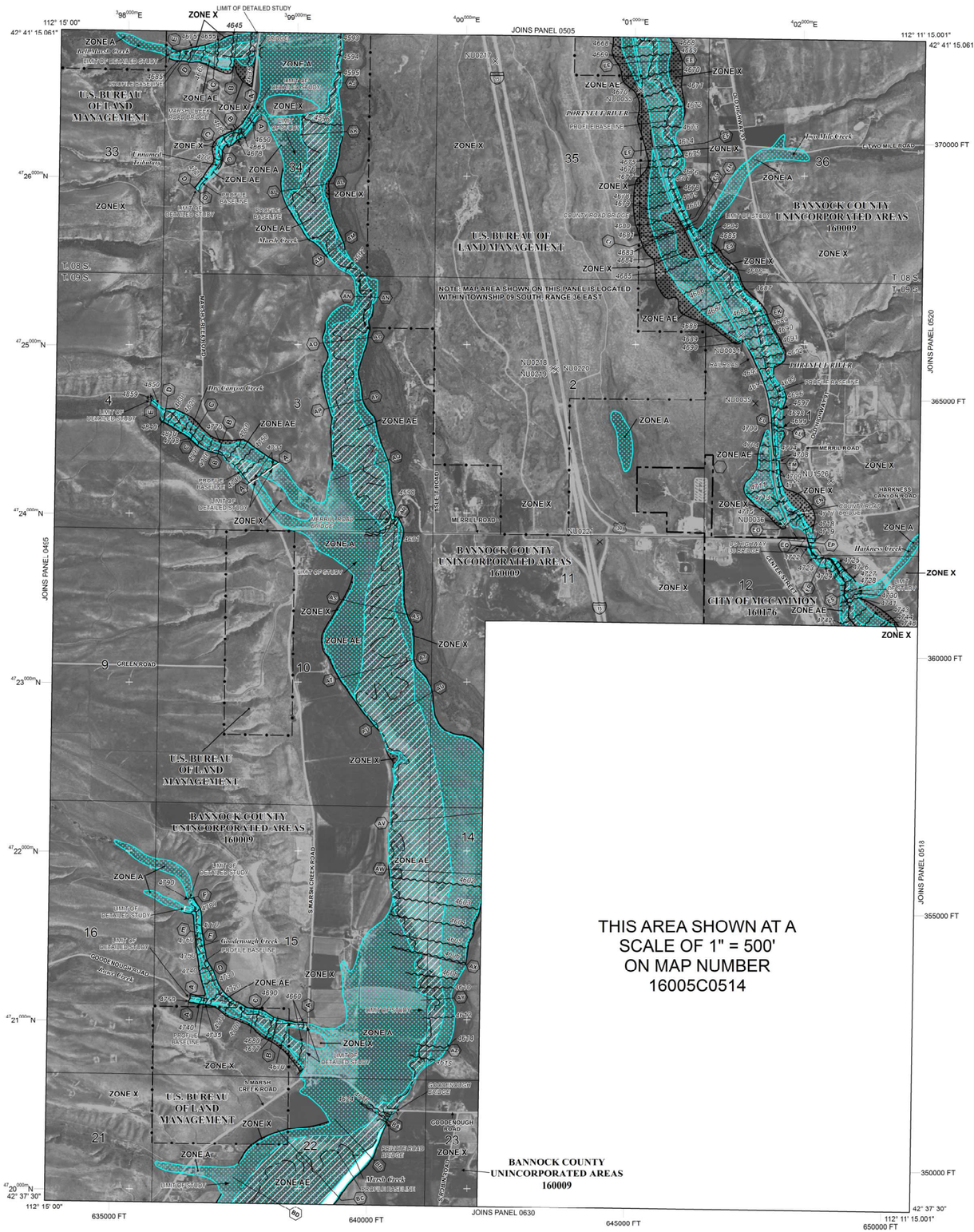

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 3100000 FT — 5000-foot ticks: Idaho State Plane East zone (FIPS zone 1101), Transverse Mercator projection
- 89°00'00" N — 1000-meter Universal Transverse Mercator grid values, zone 12N
- DX5610 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 7, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0515D

FIRM

FLOOD INSURANCE RATE MAP

BANNOCK COUNTY, IDAHO AND INCORPORATED AREAS

PANEL 515 OF 925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BANNOCK COUNTY	160009	0515	D
MCCAMMON, CITY OF	160176	0515	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
16005C0515D
EFFECTIVE DATE
JULY 7, 2009

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

Provisionally Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by June 26, 2009. If the community or owner does not provide the necessary data and documentation or if the data and documenation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 12. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Bannock County (2006), the Columbia Basin Project (1006), Idaho Department of Water Resources (2003), Idaho Geospatial Data Clearinghouse (2006), National Geodetic Survey (2006), City of Pocatello (2004), and the USDA-FSA (2004) at a scale of 1:24,000.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

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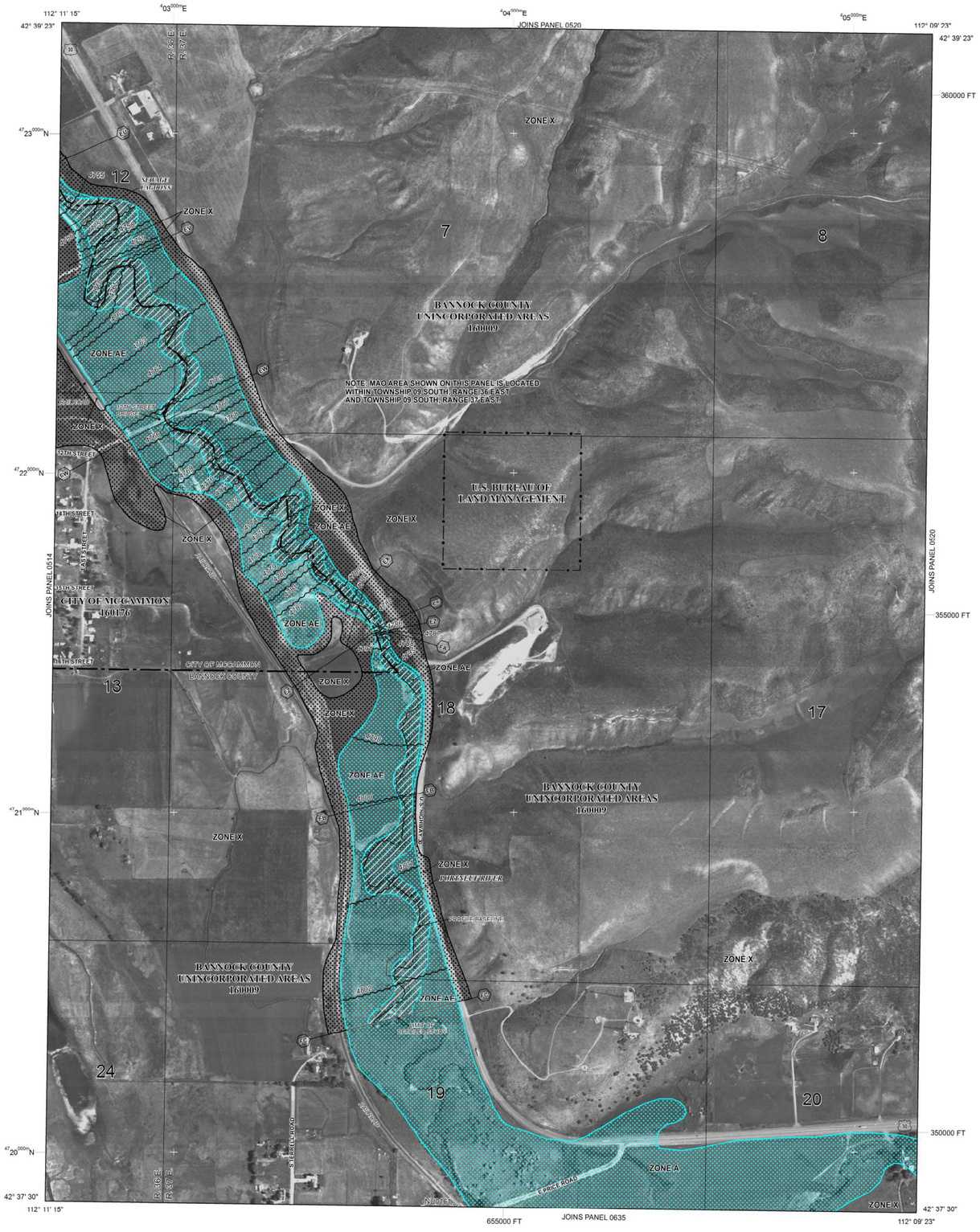

LEGEND

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JULY 7, 2009

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250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0518D

FIRM

FLOOD INSURANCE RATE MAP

BANNOCK COUNTY, IDAHO AND INCORPORATED AREAS

PANEL 518 OF 925
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BANNOCK COUNTY	160009	0518	D
MCCAMMON, CITY OF	160176	0518	D

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MAP NUMBER
16005C0518D
EFFECTIVE DATE
JULY 7, 2009

Federal Emergency Management Agency

McCammon WWFPS Key Points - February 10, 2021

Chapters 1 and 2 Summary

- The purpose of the study was to address the winter storage lagoons that are leaking more than allowed by the state. This needs to be addressed in a timely manner to avoid receiving fines from DEQ.
- The same population projections from the WFPS were used for this study.
- 278 of the 303 residential utility customers in McCammon are connected to sewer.
- McCammon does not have any flow meters on the wastewater system. A water balance estimated the City's sewer flows to be approximately 147.9 gallons per capita per day.

Population and Flow Projection

Year	2020	2040	2060
City Population	849	1,057	1,318
Service Population	779	970	1,209
Average Day Flow (gpm)	80.0	99.7	124.2
Peak Hour Flow (gpm)	309.7	379.7	465.8

- Lift station #5 (Near Flying J) can handle the projected 2040 flows while lift station #4 (main lift station) will need new pumps to handle the projected 2040 flows. These two lift stations pump directly to the lagoons.

Lift Stations #4 and #5 Capacities and Flows

Lift Station	4	5
2040 Peak Hour Flow (gpm)	309.6	70.1
Estimated Pump Capacity (gpm)	230	320

- Preliminary winter storage sizing of at least 9.4 acres. The City would need to use the existing footprint of the winter storage lagoon to avoid purchasing additional land. The approximate footprint of a new lagoon is shown below.
- Additional land application area of at least 7.1 acres is also needed.

Facility
- Bio-Solids Removal
- Winter Lagoon
- Headworks
- Waste Water Reuse Site
- Lift Stations
- Manholes

Sewer Lines
- Gravity - 10"
- Gravity - 8"
- Pressure - 6"
- Pressure - 8"

BIO-SOLIDS REMOVAL
$500,000

HEADWORKS BUILDING
$1,000,000

GENERATOR & SCADA
$410,000

CLEAN, EXPAND & LINE WINTER STORAGE LAGOON
$2,050,000

WASTE WATER REUSE SITE EXPANSION
$205,000

LIFT STATION 4 REHABILITATION
$509,000

LIFT STATION 3 REHABILITATION
$313,000

LIFT STATION 1 REHABILITATION
$100,000 (COMPLETED)

LIFT STATION 2 REHABILITATION
$130,000 (COMPLETED)

PORTABLE GENERATOR FOR LIFT STATIONS: $65,000
SEWER REPAIRS: $1,000,000

0 250 500 1,000 Feet

Print Date: 3/7/2022

Document Path: J:\219128 McCammon WWFP\fs_PLAN\GIS\24x36 Exhibit.mxd

PROJECT NO. 219128

FILENAME 24X36 Exhibit.mxd

KELLER ASSOCIATES
3153 McNeil Drive
Idaho Falls, ID 83402
208.542.6120

CITY OF McCAMMON, IDAHO

WASTEWATER FACILITIES PLANNING STUDY

CAPITAL IMPROVEMENT PLAN

FIGURE NO.

1 OF 1

McCammon City Council Meeting Agenda
802 Front Street
September 15, 2022

Dale Kinlock
Aaron Heinsaker
Stephanie Iverson
-Steve Campbell - absent

Welcome & Call Meeting to Order:

A. In-person attendance is allowed, but strict social distancing measures are in place.
B. Attendance is limited. The wearing of mask/coverings is optional.
C. Please SILENCE CELL PHONES
D. Roll Call of Council Members
E. Conflict on any Agenda Item/ *ACTION ITEM*

Consent Agenda:

The consent agenda includes items which require formal Council action, but which are typically routine or not of great controversy. Individual Council Members may ask that any specific item be removed from the consent agenda in order that it be discussed in greater detail.

A. Council Minutes/*ACTION ITEM*
B. Bills/*ACTION ITEM*

New Business:

C. Bannock County Sheriff/INFORMATIONAL
D. Ward Hansen Property Purchase/Swap/ACTION ITEM
E. Marvin Fielding Wastewater Study Public Comment/ACTION ITEM
F. Bannock County Sheriff Contract 2024 2023/ACTION ITEM
G. Resolution 2022-11 Judicial Confirmation/ACTION ITEM Approved
H. Health Insurance/Stipend Increase for Full Time Employees/ACTION ITEM $750/mo. → $950/mo. approved
I. Fire Chief Pay Increase/Paid Call Firefighters/ACTION ITEM $10.63/hr for training & calls - unknown
Was $600/yr → $720/mo. payroll taxes rather than lump $
J. Pay Application #1 Falken Construction for Bonds & Insurance/ACTION ITEM -$4,750 Approved
K. Public Works
1. Lift Station #3 Update/ACTION ITEM $2,000 approved
2. ...
L. City Attorney
1. Ordinance 521 Annett's Painted Acres Subdivision Approval/ACTION ITEM
2. ...
M. Permits & Licenses
1. Business License BLMMC22-13 Chazell Derrick Sweet Mama's Shack/ACTION ITEM
2. Building Permit MCC2022-013 Ivan Bullock Concrete Pad for Storage Units/ACTION ITEM

Unfinished Business:

1. Action List Items/DISCUSSION
2. ...

Executive Session: Legal Matters / ACTION *ITEM*

Executive Sessions may be held to consider specific City related matters, subject to applicable legal requirements contained in Idaho Code 67-2345. No Executive session may be held for the purpose of taking any final action or making any final decision. This will include one of the following:

1. Personnel 2. Legal Matters 3. Purchases

Adjourn: McCammon City Council Meeting Agenda / *ACTION ITEM*

City Council Presentation
September 15, 2022

KELLER ASSOCIATES

City of McCammon

Wastewater Facilities Planning Study

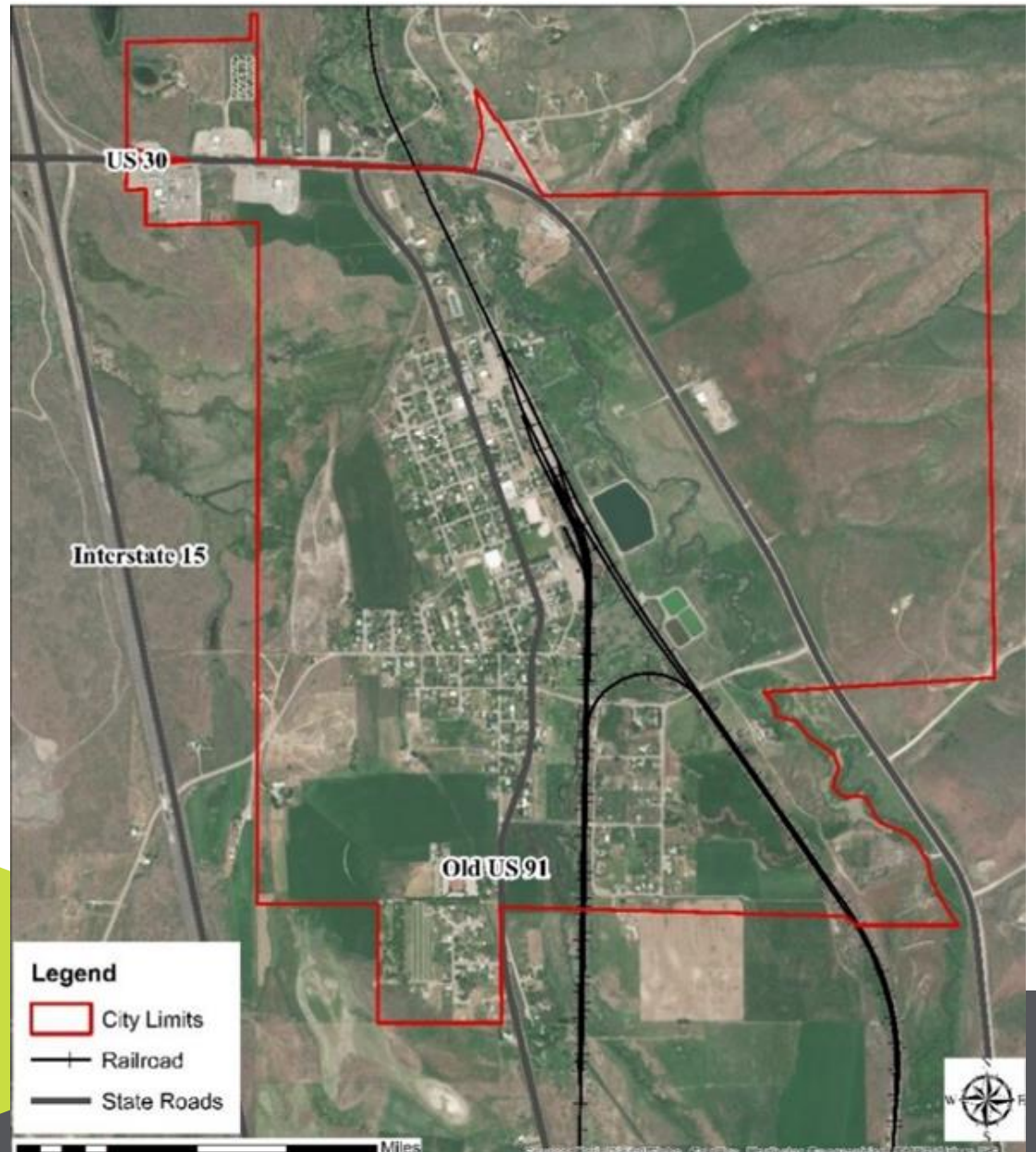
Purpose of Public Meeting

- Present Study Findings
  - Population, Flow, and Loading Projections
  - Alternatives
  - Potential Environmental Impacts
  - User Rate Impacts
- Conclude Public Comment Period
- Formal Selection of Alternatives
- Next Steps

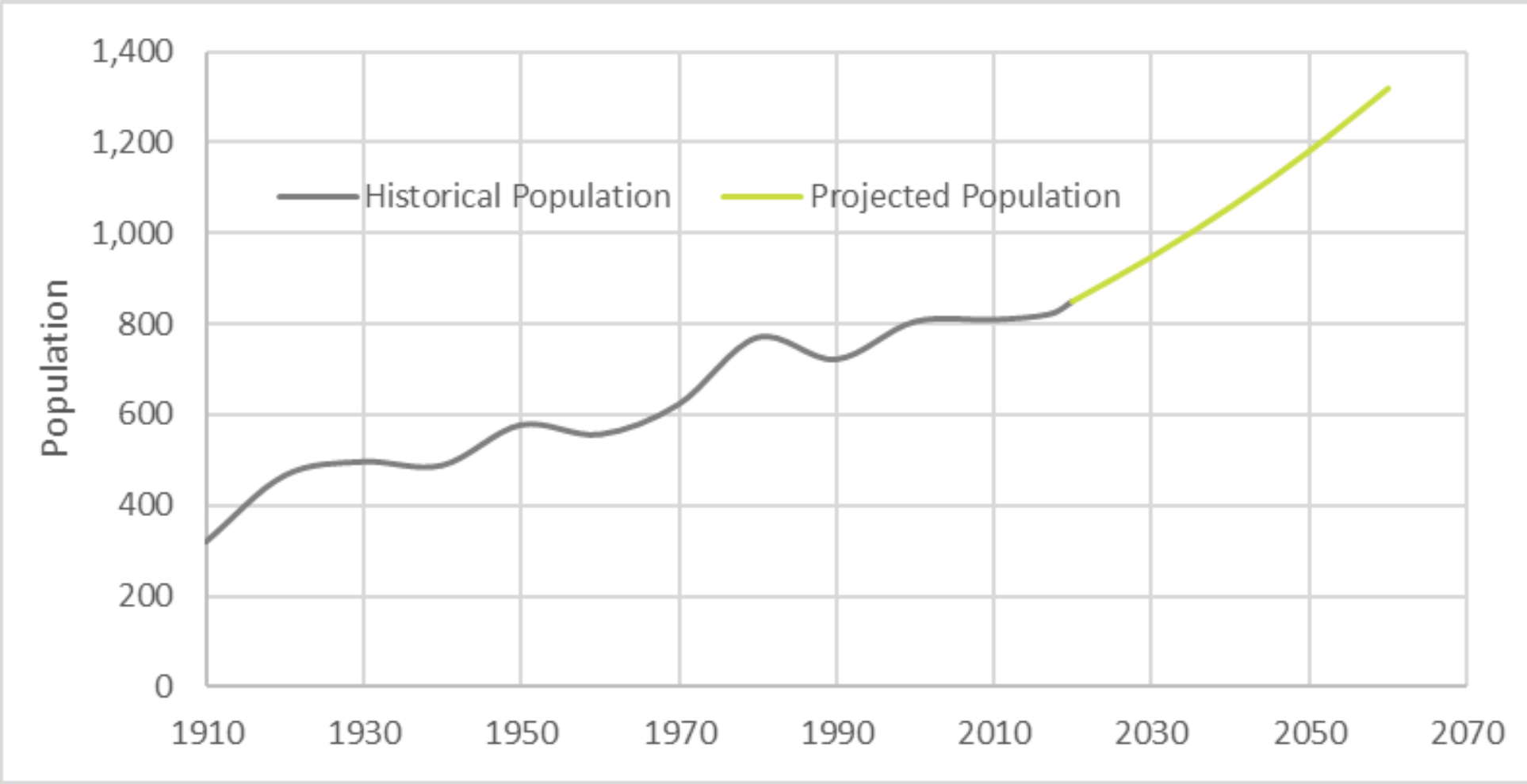
Purpose and Need for Study

- Leaking Winter Storage Lagoon
- Ragging issue
- Lift Station issues

Study Area


US 30
Interstate 15
Old US 91
Legend
City Limits
Railroad
State Roads
Miles

Historical and Projected Populations



Historical Influent Flows

Lagoon Gain/Loss	Cell 1	Cell 2	Cell 3	Winter Storage	Total
Evaporation (MG)	1.15	1.15	1.13	7.23	**+10.66**
Precipitation (MG)	0.46	0.46	0.45	2.85	**-4.22**
Seepage (MG)	0.17	1.20	1.14	24.51	**+27.03**
Land Application (MG)	-	-	-	-	**+8.60**
Estimated Influent Flow (MG)	**-**	**-**	**-**	**-**	**+42.07**

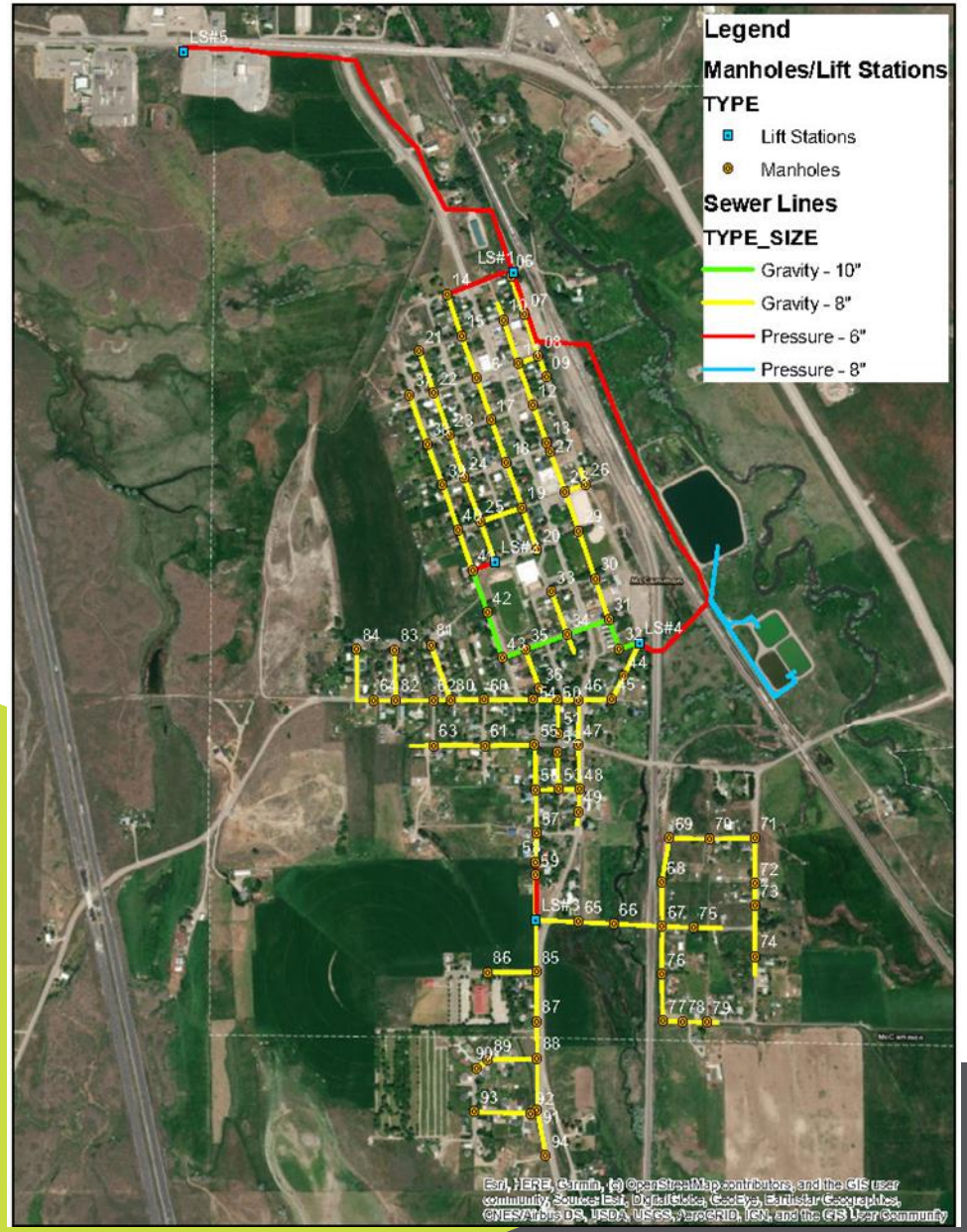
- 115,000 gallons per day
- 32,000 gpd from Flying J and Chevron
- 107 gpcd for residents

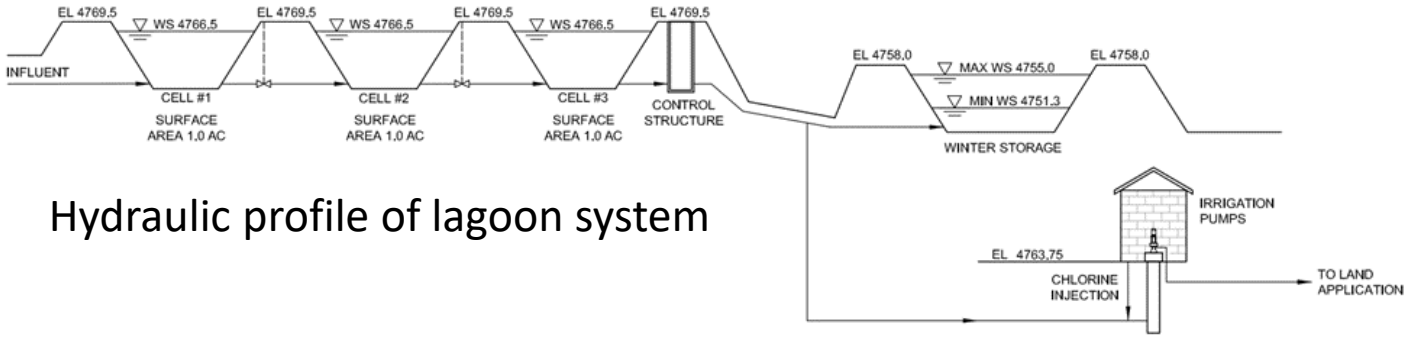
Projected Wastewater Flows and Loadings

Year	Service Population	AADF (MGD)	MMF (MGD)	PDF (MGD)	PHF (MGD)
2020	779	0.115	0.167	0.299	0.446
2040	970	0.144	0.209	0.374	0.547
2060	1,209	0.179	0.260	0.465	0.671

Parameter	Planning Criteria (ppcd*)	Planning Criteria Projected Flow (MGD)		
Year		***2020***	***2040***	***2060***
Population		779	970	1,209
	BOD_5			
AADF	0.20	156	194	242
MMF	0.26	203	252	314
	TSS			
AADF	0.25	195	243	302
MMF	0.33	257	320	399
	TKN			
AADF	0.046	36	45	56
MMF	0.053	41	51	64
	Phosphorus			
AADF	0.0048	3.7	4.7	5.8
MMF	0.0054	4.2	5.2	6.5

Existing Collection System and Treatment Plant





Hydraulic profile of lagoon system

Biosolids accumulation in Cell 1

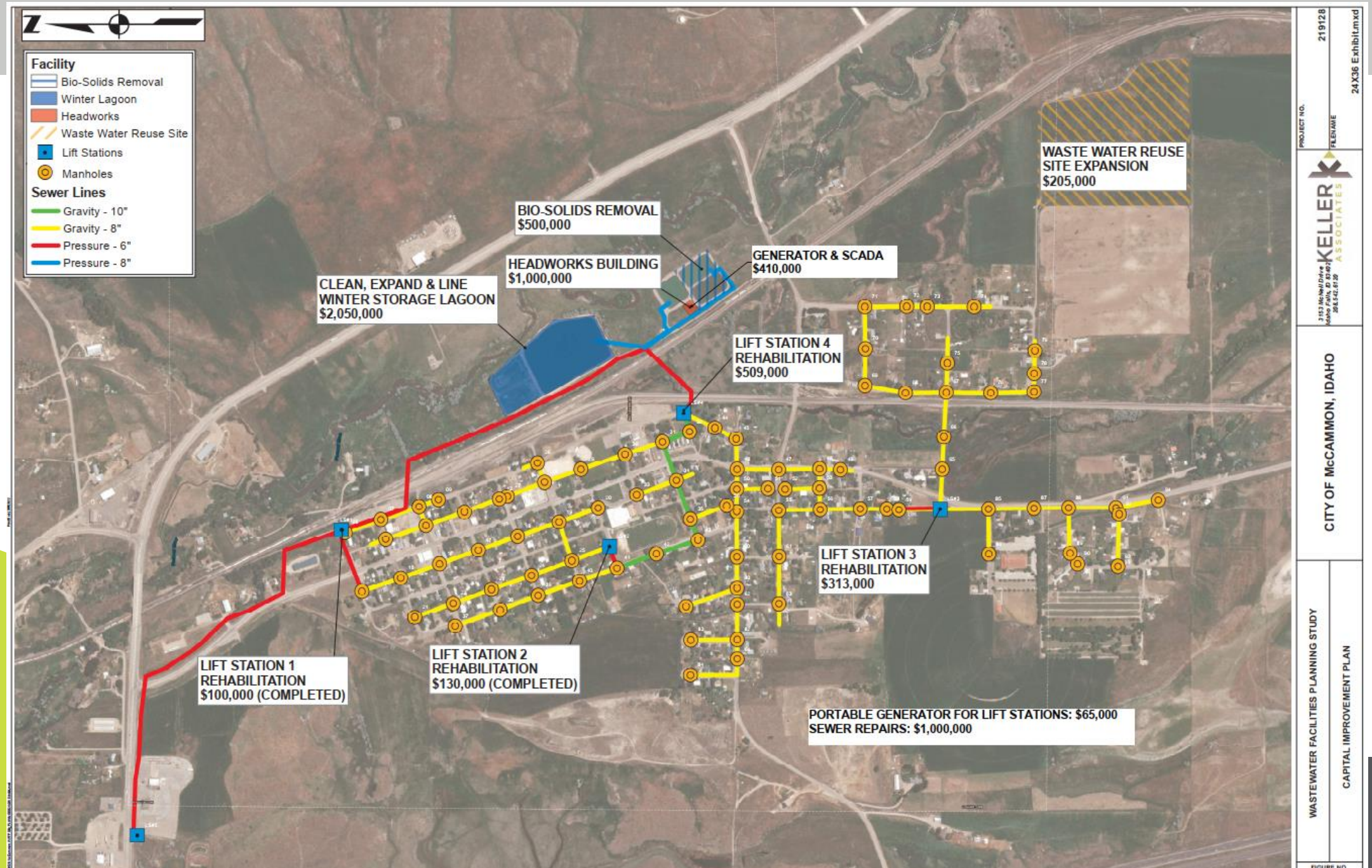
Wastewater System Deficiencies

- Roots in collection system
- No backup generator for lift stations
- Lift Station 4 capacity
- No influent flowmeter
- Ragging issue – can’t run aerators
- Leaking winter storage lagoon
- Land application site capacity

Capital Improvement Plan

ID#	Improvement Item	Purpose(s)	Total Estimated Cost (2022)
Priority 1 Improvements			
CS 1.1	Lift Station No. 3	Upgrade Old Lift Station	$ 313,000
CS 1.2	Portable Generator	Provide Backup Power for Lift Stations	$ 65,000
CS 1.3	Sewer Repairs	Repair/Replace Problem Areas	$ 1,000,000
TP 1.1	Influent Screen and Flow Measurement	Protect Equipment and Measure Flow	$ 1,000,000
TP 1.2	Biosolids and Aeration	Provide Capacity	$ 500,000
TP 1.3	Generator and SCADA	Provide Backup Power for WWTP and Alarms	$ 410,000
TP 1.4	Winter Storage Lagoon and Fence	Add Capacity and Protect Public	$ 2,050,000
Total Priority 1 Improvements			**$ 5,338,000**
Priority 2 Improvements			
CS 2.1	Lift Station No. 4	Provide Capacity/Update to Current Codes	$ 509,000
TP 2.1	Land Application	Provide Additional Capacity	$ 205,000
Total Priority 2 Improvements			**$ 714,000**
TOTAL WASTEWATER IMPROVEMENTS COSTS			**$ 6,052,000**

The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in 2022 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from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WASTE WATER REUSE SITE EXPANSION $205,000
BIO-SOLIDS REMOVAL $500,000
GENERATOR & SCADA $410,000
HEADWORKS BUILDING $1,000,000
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KELLER ASSOCIATES
CITY OF McCAMMON, IDAHO
WASTEWATER FACILITIES PLANNING STUDY
CAPITAL IMPROVEMENT PLAN

Annual O&M Costs

Component	Existing O&M Costs	Proposed O&M Cost	Net Increase
Electricity and Fuel	$9,000	$12,000	$3,000
Chemicals	$3,000	$5,000	$2,000
Disposal	$0	$2,000	$2,000
Parts	$6,000	$12,000	$6,000
Personnel and Supplies	$58,000	$77,000	$19,000
Miscellaneous	$1,000	$1,000	$0
Sewer Cleaning, CCTV, and Repair	$0	$72,000	$72,000
TOTAL	**$77,000**	**$181,000**	**$104,000**

User Rate Analysis

	USDA-RD 25% Grant, ARPA, CDBG	USDA-RD Per $1M
Project Total	$ 6,052,000	$ 1,000,000
DEQ/ARPA Grant	$ 1,504,495	
Block Grant	$ 500,000	
Subtotal	$ 4,047,505	$ 750,000
USDA-RD Grant	$ 1,011,876	$ 250,000
USDA-RD Loan Amount	$ 3,035,629	$ 750,000
Term (years)	40	40
Interest Rate	2.25%	2.25%
Annual Debt Service - New Debt	$115,892.35	$28,633.03
Monthly Debt Service - New	$ 9,657.70	$ 2,386.09
Users	311	311
Monthly Debt Service per User	$ 31.05	$ 7.67
Debt Service Reserve per User	$ 3.11	$ 0.77
Current User Rate	$ 43.00	
Total Monthly Fixed (Debt + Reserves) Costs p	$ 77.16	$ 8.44
Monthly O&M increase	$ 8,667	
Total Monthly Variable Costs per User	$ 27.87	$ -
Total Monthly Cost per User	**$ 105.03**	**$ 8.44**

Environmental Impact Comparison

Environmental Criteria	Wastewater System Alternatives								
	Collection System				Wastewater Treatment				
	LS 3	LS 4	Sewer Repairs	Portable Generator	Influent Screen and Flow Measurement	Biosolids and Aeration	Generator and SCADA	Winter Storage Lagoon and Fence	Land Application Site
Land Use/Important Farmland/Formally Classified Lands	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	Additional Water for Irrigation	Improved Farmland
Floodplains	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Wetlands	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Cultural Resources	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Biological Resources	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Water Quality Issues	No Impact	No Impact	No Impact	No Impact	Improved Effluent Quality	Improved Effluent Quality	Improved Treatment Reliability	Improved Effluent Quality	Improved Effluent Quality
Groundwater Quality Issues	No Impact	No Impact	Improved GW Quality	No Impact	No Impact	No Impact	No Impact	Reduce leakage to improve GW quality	No Impact
Socio-Economic Issues	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts	Potential User Rate Impacts
System Classification	Collection Class I*	Collection Class I	Collection Class I	Collection Class I	Treatment Class I*	Treatment Class I	Treatment Class I	Treatment Class I	Treatment Class I

*Current treatment and collection system classifications do not change with proposed improvements

Next Steps

- Submit draft study for DEQ review
- Public comment period
- Formally select the project
- Submit Environmental Information Document
- DEQ Issue Environmental Determination
- Judicial Review

Appendix B

Additional System Documentation

- DEQ Letter – Lagoon Seepage Test Results
- Existing Collection System Map
- Lift Stations 1 and 2 Pump Curves
- Lift Stations 1, 2, and 3 System Curves
- Manhole Observations
- Lift Station Observations
- Observed Sludge Depths in Cell 1
- MTI Biosolids Report
- Cell 1 Sludge Depths
- Idaho Public Wastewater Treatment Plant Classification Worksheet
- Idaho Public Wastewater Collection System Classification Worksheet

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STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

444 Hospital Way #300• Pocatello, ID 83201 • (208) 236-6160

C. L. "Butch" Otter, Governor
John Tippets, Director

December 28, 2018

City of McCammon
Attn: Mayor Karlene Hall
PO Box 9
McCammon, ID 83250

Re: McCammon – Lagoon Seepage Testing Results
McCammon- Bannock county
DEQ #03-17-26, 03-17-27, 03-17-28, 03-17-29

Dear Mayor Hall,

The Idaho Department of Environmental Quality (DEQ) has completed a review of the seepage test results for the above referenced project as submitted by your consultant, Keller Associates. DEQ has determined that the test procedure utilized is consistent with DEQ approved testing procedures for estimating lagoon seepage rates.

The maximum allowable seepage rate for these lagoons is 0.25 inches per day as specified in the Wastewater Rules (IDAPA 58.01.16). The test results provided by your consultant indicate a seepage rate that is less than the maximum allowable seepage rate for cells #1, #2 and #3. The report indicates that cells #1, #2, and #3 have satisfactorily passed testing requirements; therefore the report for these cells is **approved**.

The winter storage lagoon had a measured seepage rate of 0.362 inches per day and was above the required minimum of 0.25 inches per day. The report indicates the lagoon could not successfully pass IDAPA requirements for seepage rates; therefore the report for the winter lagoon is **not approved**.

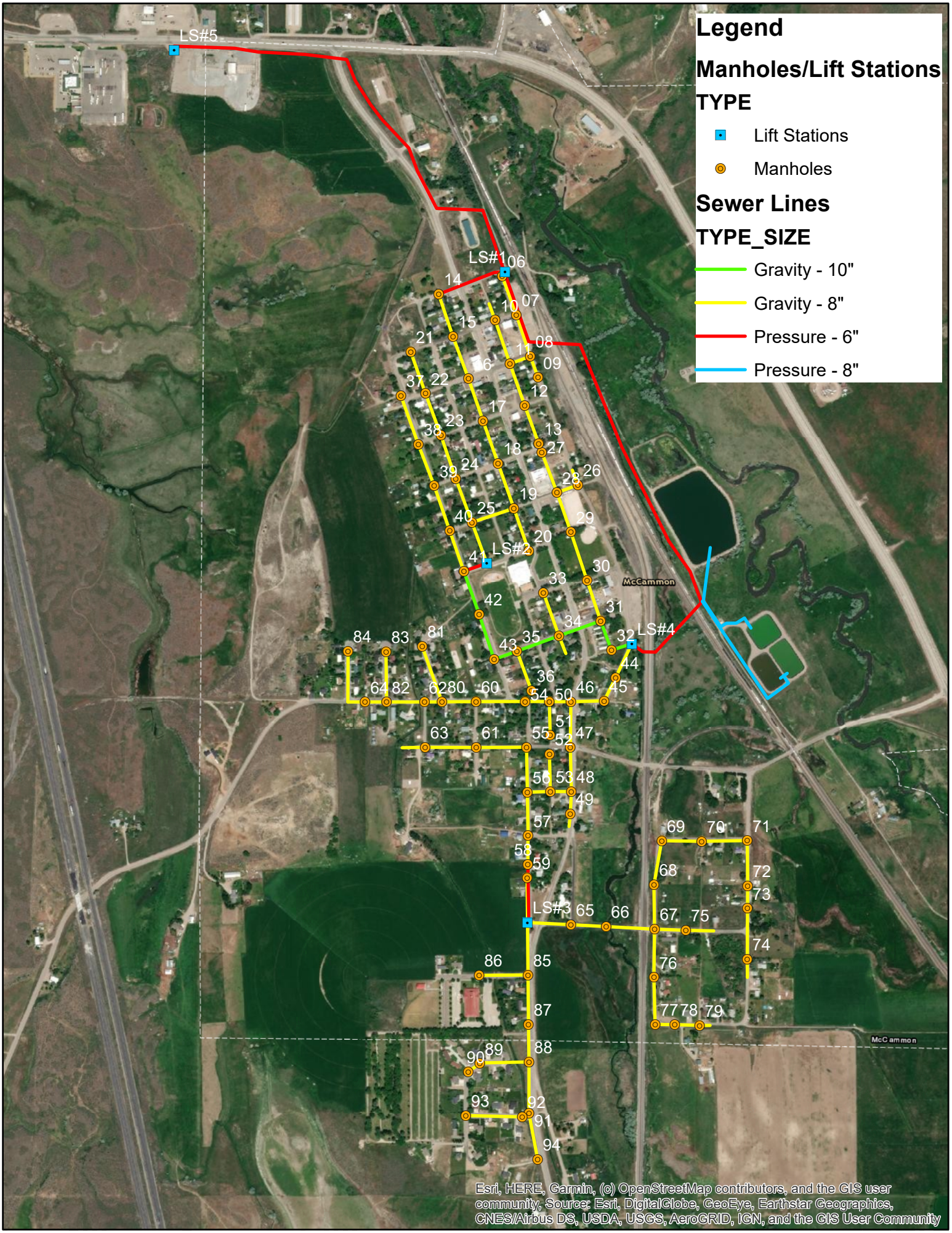
Because the winter storage lagoon is in violation of IDAPA rules for seepage rates, corrective actions will need to be taken in order to repair the lagoon and reduce the seepage rate to acceptable levels. Please provide additional correspondence to either myself or Tom Hepworth at the DEQ regarding the course of action that will be taken to remedy the lagoons seepage rate at your earliest convenience.

Please contact me at (208) 236-6160 or via e-mail at jesse.bennett@deq.idaho.gov should you have questions or require additional information.

Sincerely,

Jesse Bennett, E.I.T.
Regional Water Quality Engineer

cc: Matthew Hill, P.E. – Keller Associates (1 copy)
Tom Hepworth – DEQ – PRO (e-mail)
DEQ File #03-17-26, 03-17-27, 03-17-28, 03-17-29
TRIM: 2017AFM1807, 2017AFM1808, 2017AFM1809, 2017AFM1810


Legend
Manholes/Lift Stations
TYPE
Lift Stations
Manholes
Sewer Lines
TYPE_SIZE
Gravity - 10"
Gravity - 8"
Pressure - 6"
Pressure - 8"
LS#5
LS#1
LS#2
LS#3
LS#4
McCammon
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

xylem
Let's Solve Water

Submittal

City of McCammon Lift Station 1 & 2 Retrofit

Contractor: Falken Construction, LLC

Engineer:

Marvin Fielding
Keller Associates
3153 Mcneil Drive
Idaho Falls, ID 83402

Flygt Products

2707 Saturn Way
Boise, ID 83709
Phone: 208-813-7616

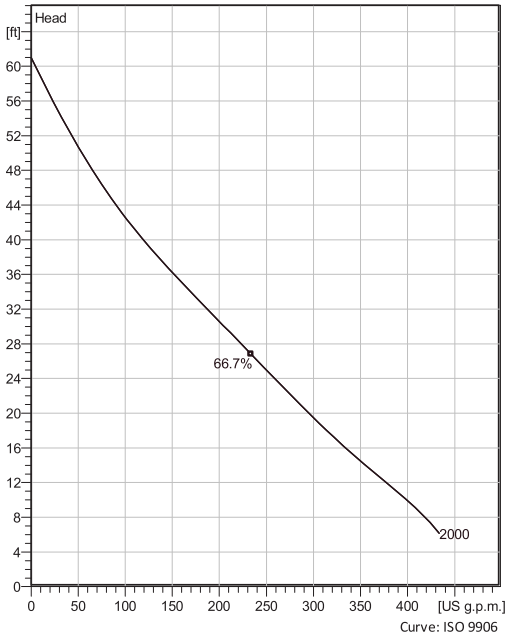
FLYGT

Concertor N80-2000

The most intelligent wastewater pump on the market. Suitable for customers operating traditional on/off pump stations who want to benefit from re-settable pump performance, clog detection and pump cleaning, soft start, constant power and motor protection.

Technical specification

Curves according to: Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Curve: ISO 9906

Configuration

Motor number
0N6020.091 18-08-1AZ-W 10hp

Installation type
P - Semi permanent, Wet

Impeller diameter
170 mm

Discharge diameter
3 1/8 inch

Pump information

Impeller diameter
170 mm

Discharge diameter
3 1/8 inch

Inlet diameter
100 mm

Maximum operating speed
800-3249.4 rpm

Number of blades
2

Max. fluid temperature
40 °C

Materials

Impeller
Hard-Iron ™

Project	**Created by**	**Last update**
Block	**Created on** 6/24/2020	

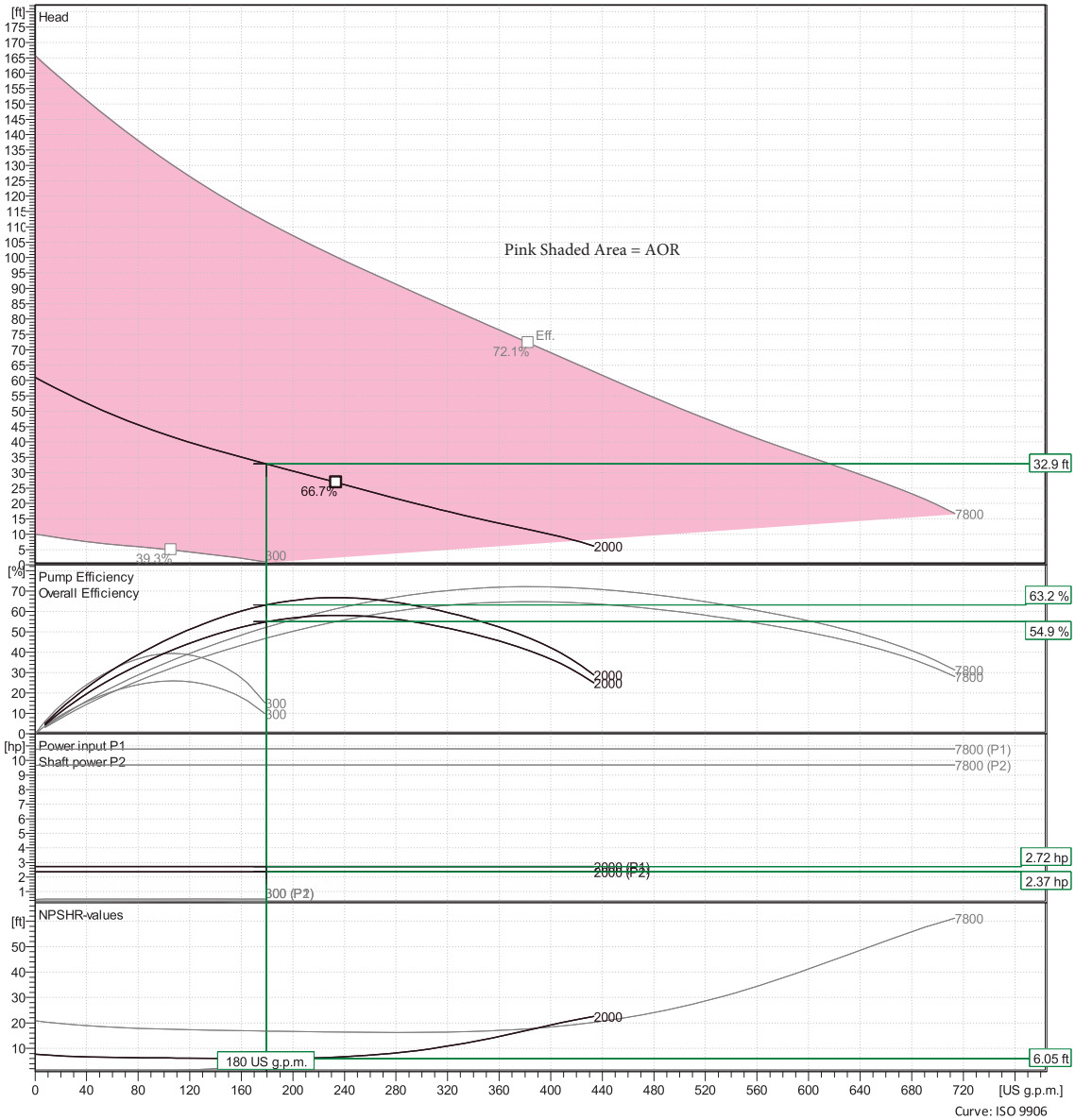
Concertor N80-2000

Performance curve

Duty point

Flow	Head
180 US g.p.m.	32.9 ft

Curves according to: Water, pure [100%],39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



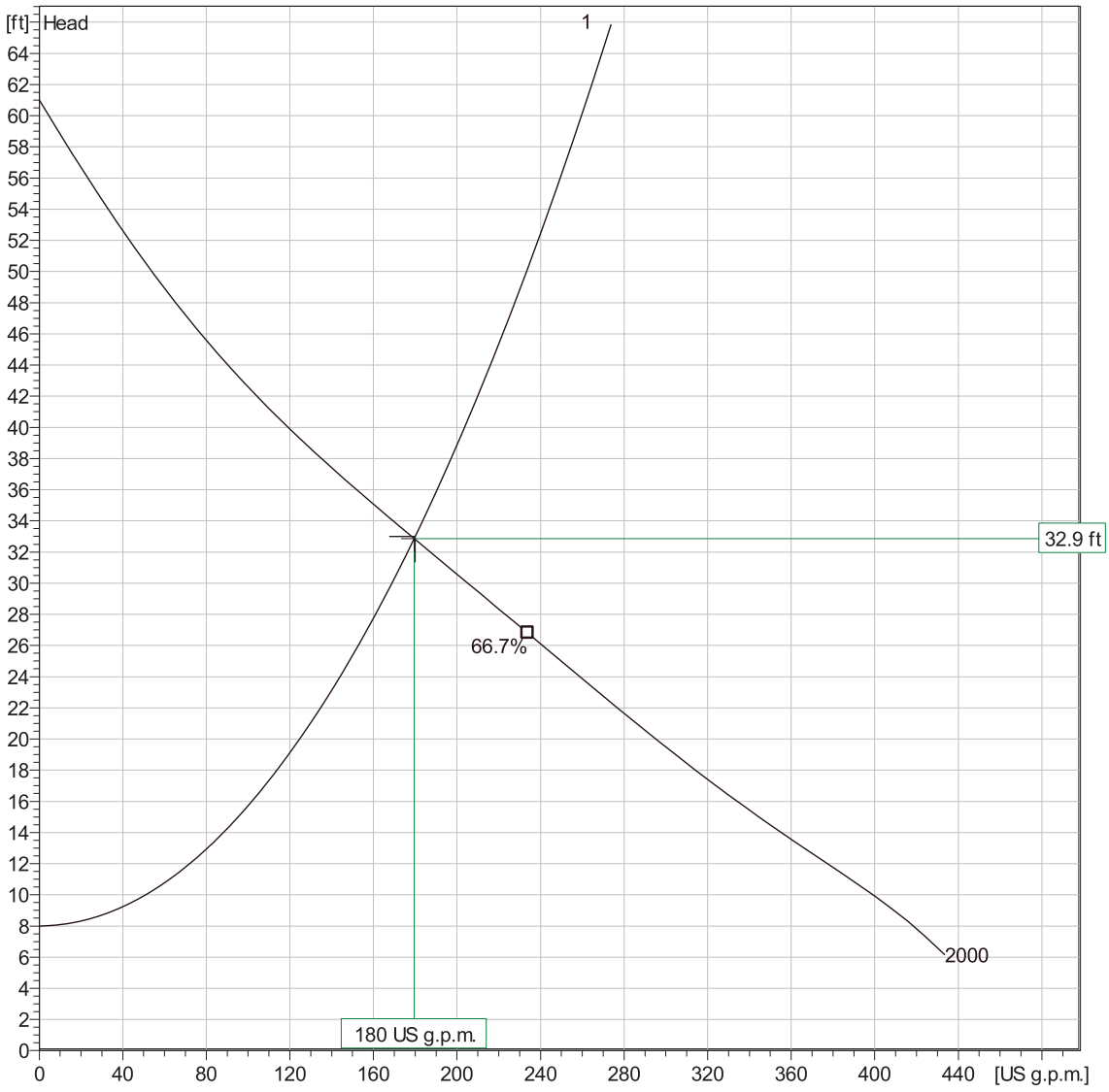
Curve: ISO 9906

Project		**Created by**	**Last update**
Block		**Created on**	6/24/2020

Concertor N80-2000

Duty Analysis

Curves according to: Water, pure [100%] ; 39.2°F; 62.42lb/ft³; 1.6891E-5ft²/s



Operating characteristics

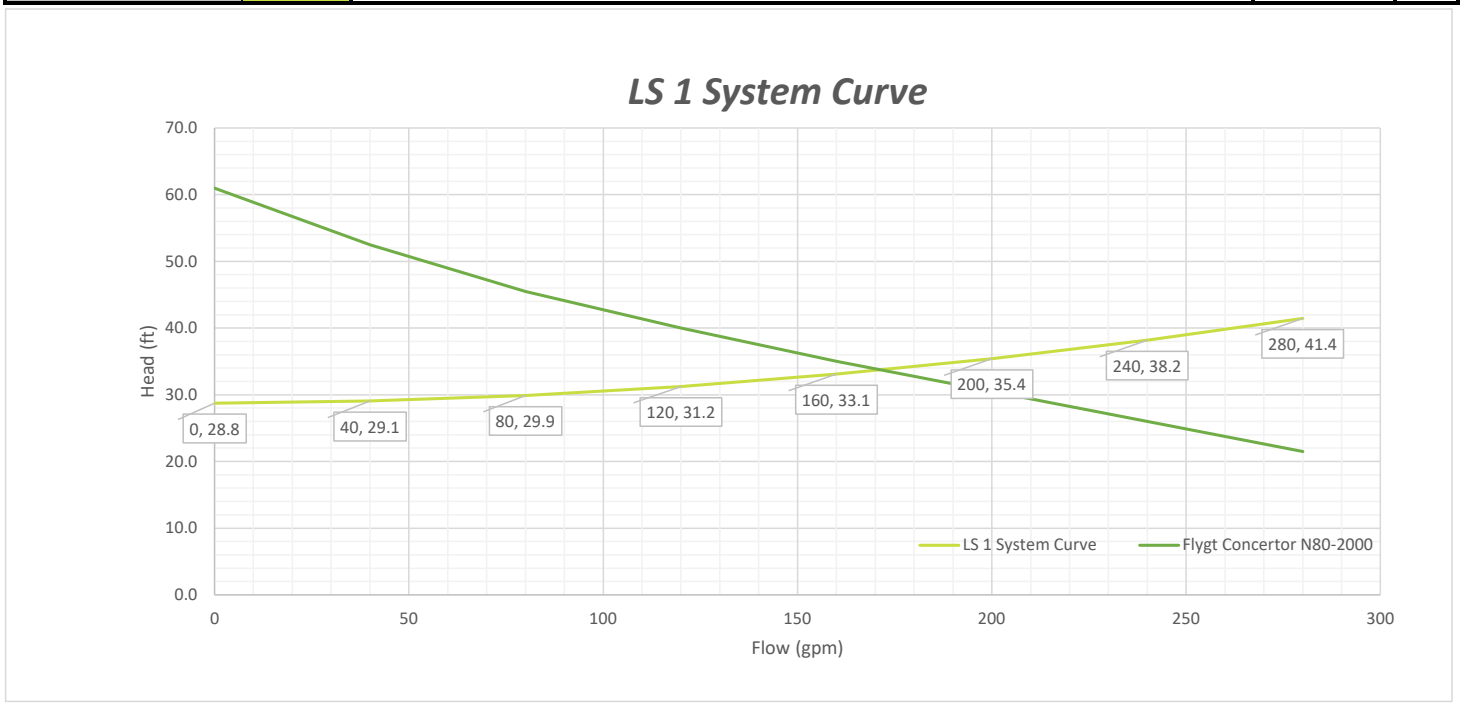
Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific Energy	NPSHre
1	180 US g.p.m.	32.9 ft	2.37 hp	180 US g.p.m.	32.9 ft	2.37 hp	63.2 %	189 kWh/US M(	6.05 ft

Project	**Created by**		**Last update**
Block	**Created on**	6/24/2020	

LS 1 System Curve

Calculation Check 4/29/2020

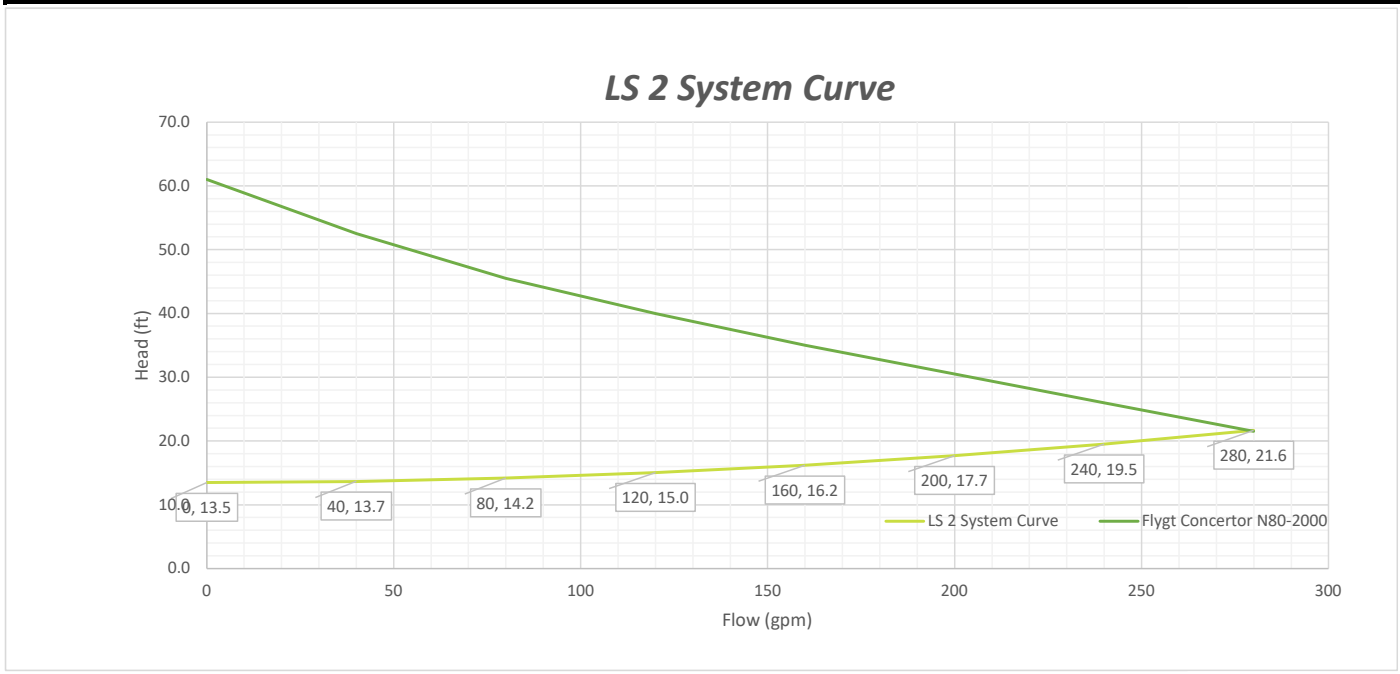
System Parameters		Flow (gpm)	Flow (cfs)	Velocity (fps)	Velocity (Fittings) (fps)	Friction Loss (ft)	Minor Losses (ft)	Max System Head (ft)	Min System Head (ft)	HP Req'd	Flygt Concertor N80 2000	PSI
Force Main Length (ft)	562	0	0.00	0.00	0.00	0.00	0.00	28.8	19.9	0.0	61.0	12.5
Diameter (In)	6	40	0.09	0.45	1.02	0.17	0.13	29.1	20.2	0.5	52.5	12.6
Pipe Area (ft^2)	0.196	80	0.18	0.91	2.04	0.63	0.51	29.9	21.0	1.0	45.5	12.9
Pipe Type	Ductile	120	0.27	1.36	3.06	1.33	1.16	31.2	22.4	1.6	40.0	13.5
Hazen-Williams C	100	160	0.36	1.82	4.09	2.27	2.05	33.1	24.2	2.2	35.0	14.3
Min wet well el.	4737.61	200	0.45	2.27	5.11	3.43	3.21	35.4	26.5	3.0	30.5	15.3
Max wet well el.	4746.5	240	0.53	2.72	6.13	4.81	4.62	38.2	29.3	3.9	26.0	16.5
Outfall el.	4766.37	280	0.62	3.18	7.15	6.40	6.29	41.4	32.6	4.9	21.5	17.9
Pump Eff.	0.6											



LS 2 System Curve

Calculation Check 4/29/2020

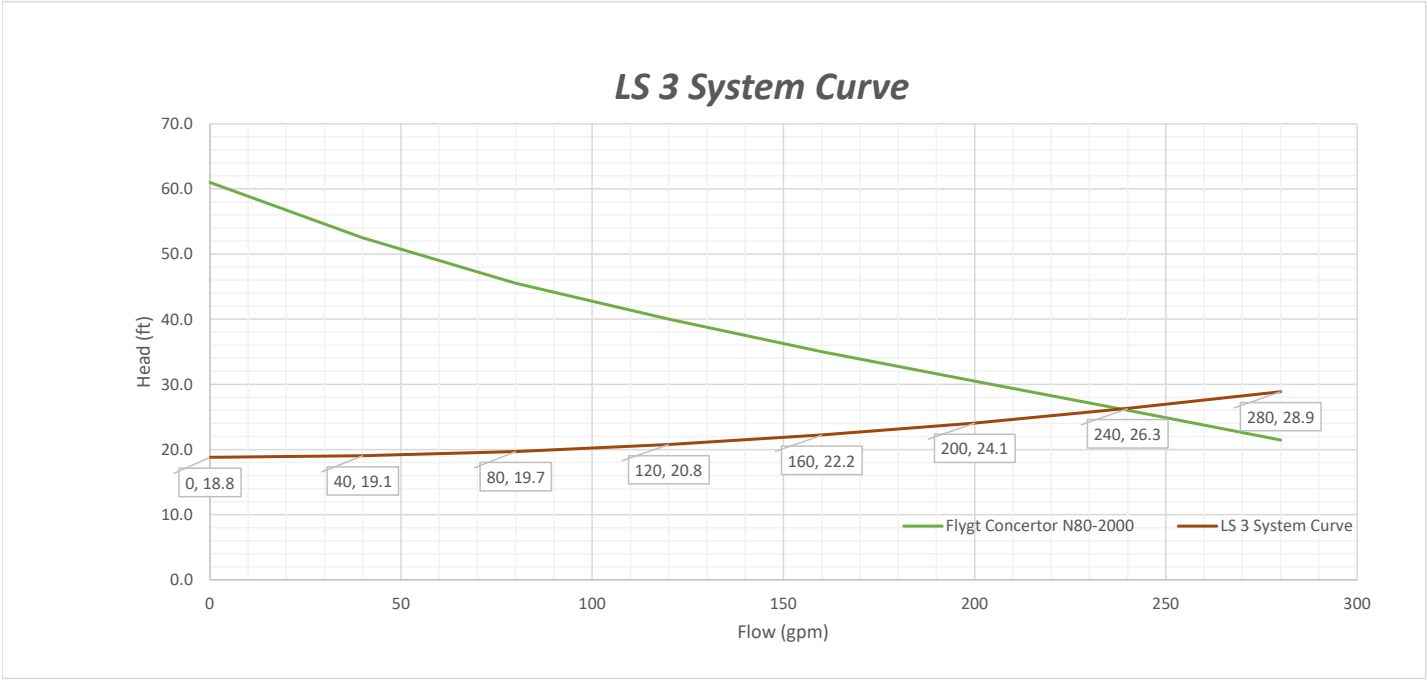
System Parameters		Flow (gpm)	Flow (cfs)	Velocity (fps)	Velocity (Fittings) (fps)	Friction Loss (ft)	Minor Losses (ft)	Max System Head (ft)	Min System Head (ft)	HP Req'd	Flygt Concertor N80-2000	PSI
Force Main Length (ft)	165	0	0.00	0.00	0.00	0.00	0.00	13.5	10.5	0.0	61.0	5.8
Diameter (In)	6	40	0.09	0.45	1.02	0.05	0.13	13.7	10.6	0.2	52.5	5.9
Pipe Area (ft^2)	0.196	80	0.18	0.91	2.04	0.19	0.51	14.2	11.2	0.5	45.5	6.1
Pipe Type	Ductile	120	0.27	1.36	3.06	0.39	1.16	15.0	12.0	0.8	40.0	6.5
Hazen-Williams C	100	160	0.36	1.82	4.09	0.67	2.05	16.2	13.2	1.1	35.0	7.0
Min wet well el.	4751.28	200	0.45	2.27	5.11	1.01	3.21	17.7	14.7	1.5	30.5	7.7
Max wet well el.	4754.3	240	0.53	2.72	6.13	1.41	4.62	19.5	16.5	2.0	26.0	8.4
Outfall el.	4764.76	280	0.62	3.18	7.15	1.88	6.29	21.6	18.6	2.6	21.5	9.4
Pump Eff.	0.6											



LS 3 System Curve

Calculation Check 6/6/2022

System Parameters		Flow (gpm)	Flow (cfs)	Velocity (fps)	Velocity (Fittings) (fps)	Friction Loss (ft)	Minor Losses (ft)	Max System Head (ft)	Min System Head (ft)	HP Req'd	Flygt Concertor N80-2000	PSI
Force Main Length (ft)	568	0	0.00	0.00	0.00	0.00	0.00	18.8	15.8	0.0	61.0	8.2
Diameter (In)	6	40	0.09	0.45	1.02	0.09	0.13	19.1	16.1	0.3	52.5	8.3
Pipe Area (ft^2)	0.196	80	0.18	0.91	2.04	0.34	0.54	19.7	16.7	0.7	45.5	8.5
Pipe Type	PVC	120	0.27	1.36	3.06	0.72	1.21	20.8	17.8	1.0	40.0	9.0
Hazen-Williams C	140	160	0.36	1.82	4.09	1.23	2.16	22.2	19.2	1.5	35.0	9.6
Min wet well el.	4754.5	200	0.45	2.27	5.11	1.86	3.37	24.1	21.1	2.0	30.5	10.4
Max wet well el.	4757.5	240	0.53	2.72	6.13	2.61	4.85	26.3	23.3	2.7	26.0	11.4
Outfall el.	4773.33	280	0.62	3.18	7.15	3.47	6.61	28.9	25.9	3.4	21.5	12.5
Pump Eff.	0.6											



ID#	22
Depth (in.)	111.5
Structural Condition	Good

ID#	23
Depth (in.)	113
Structural Condition	Good

ID#	24
Depth (in.)	105
Structural Condition	Good

ID#	25
Depth (in.)	110
Structural Condition	Good

ID#	12
Depth (in.)	67
Structural Condition	Good

ID#	31
Depth (in.)	93.5
Structural Condition	Good

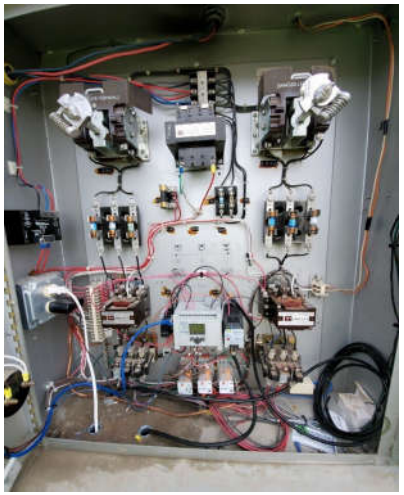
ID#	45
Depth (in.)	64
Structural Condition	Good

ID#	46
Depth (in.)	125.5
Structural Condition	Good

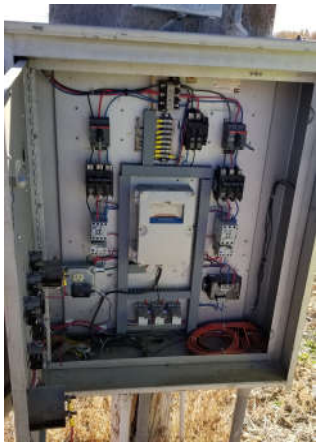
ID#	47
Depth (in.)	107
Structural Condition	Good

ID#	48
Depth (in.)	66.5
Structural Condition	Good

Inside Diameter (in.)	60
Depth (ft)	15.58
Pipe Inlet Elevation (ft)	4746.99
Design Pump Rate (gpm)	180



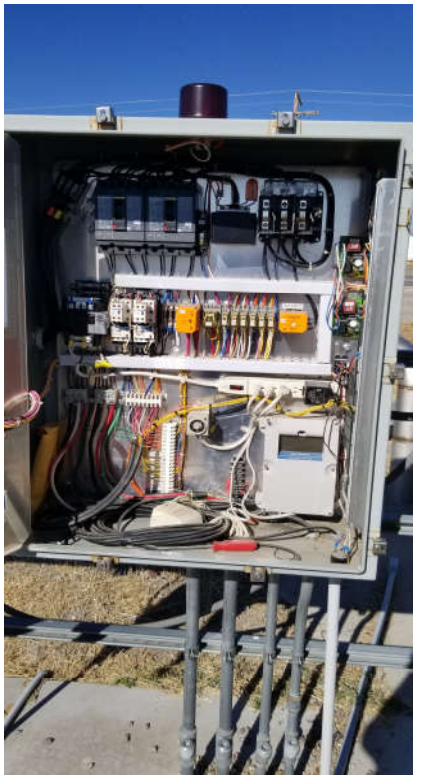
Inside Diameter (in.)	60
Depth (ft)	14.5
Pipe Inlet Elevation (ft)	4754.48
Design Pump Rate (gpm)	180



Inside Diameter (in.)	60
Estimated Pump Rate (gpm)	85.4

Inside Diameter (in.)	60
Estimated Pump Rate (gpm)	228.8

Inside Diameter (in.)	96
Depth (ft)	17
Estimated Pump Rate (gpm)	317.3



McCammon, Idaho

Wastewater Cell 1

9/15/20 I walked through the approximate path and sampled the sludge as shown below. The consistency of the sludge was that of thick pudding and consistent top to bottom, except that the top three inches was crusty and the outlined area had water visible. I noted "rafts" of rags and other trash accumulated around the edges, but not so much through the middle. MFielding

#1-14"

#2-15"

#3-16"

#4-18"

#5-20"

This area had water showing, about 15 inches deep and about 8 inches of loose sludge.

Google Earth

N

100 ft

MATERIALS TESTING & INSPECTION

❑ Environmental Services ❑ Geotechnical Engineering ❑ Construction Materials Testing ❑ Special Inspections

Mr. Fielding,

MTI, at your request, performed testing on material from the McCammon WW Bio Solids Facility. As no ASTM standard existed for the testing requested, MTI used our professional judgement in testing this material delivered to us on 9-17-20. Results are as follow:

Unit Weight: 53.54 lbf

Percent Solids: 95.85%

If you have any questions, please feel free to contact us at your earliest convenience.

T. Brandon Howard
Idaho Falls Laboratory Manager

Reviewed By: Chris A. Park P.E.
Senior Geotechnical Engineer

[illegible] M [illegible]

OFFICE USE DO NOT WRITE HERE

[illegible]

Name of System: City of McCammon Wastewater Treatment

Legal Owner of Treatment System City of McCammon

System Address: P.O. Box 9

City: McCammon **State:** ID **Zip Code:** 83250

Contact Person: Rich Pierson **Title:** Public Works Director

Business Phone Number: (208)251-2683 **Email** mccammonpwd@gmail.com

Treatment System - Design Flow/Actual Flow [illegible] (MGD) (MGD)

Treatment Plant Classification Worksheet is (Check one):

☐ **Initial System Rating** ☐ **System Upgrade** ■ **Standard 5 Year Rating**

Date of last system classification rating (if applicable) unknown

☐ **Attach a flow schematic or hydraulic flow diagram of the treatment facility to this treatment plant classification worksheet when submitting to DEQ.**

Instructions:

Use this rating form for all types of public wastewater treatment plants, facilities, or systems[D-16] that treat domestic and/or industrial wastewater including, but not limited to traditional biological and mechanical treatment processes, large soil absorption systems, community drainfields, and wastewater lagoon systems. Fill out ONE form for the wastewater treatment facility including all sequential, parallel or multiple treatment processes for both effluent and solids that provide treatment of all wastewater introduced into the system.

How to Assign Points:

Evaluate each item listed in the table below and place the specified point value next to each item selected. *Each unit process should have points assigned only once* .Add the total number of points selected to determine the class of the treatment system. Definitions describing all configurations, names, and/or reasons why rating points are or are not assigned to a particular item are provided for those items with a small D-number behind the item, i.e. D-1. Check the definition if unsure whether a particular treatment plant process qualifies for the point value shown.

Treatment facilities will be classified as VSWW, Class I, Class II, Class III or Class IV with IV being the largest and most complex. *Mail the completed, signed form to the Department of Environmental Quality 1410 N. Hilton, Boise, ID 83706 Attention: Jerimiah Fenton or Jerimiah.Fenton@deq.idaho.gov. Keep a photocopy of the original form for your files.*

Item	Points	Your System
System Size (2 to 20 points)		
[illegible]	[illegible]	292
[illegible] 800 [illegible]	[illegible]	1
[illegible] 0.16	[illegible]	1

[illegible]

Item	Points	Your System
Variation in Raw Wastewater (0 to 6 points) [1]		
[illegible]	[illegible]	0
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	0
Preliminary Treatment Process		
[illegible]	[illegible]	3
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
Primary Treatment Process		
[illegible]	5 [illegible]	
[illegible]	5 [illegible]	
Secondary Treatment Process		
[illegible]	[illegible]	
[illegible]	5 [illegible]	
[illegible]	5 [illegible]	
[illegible]	[illegible]	8
[illegible]	5 [illegible]	
Tertiary Treatment Process		
[illegible]	[illegible]	
[illegible]	5 [illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	5 [illegible]	
[illegible]	[illegible]	
[illegible]	5 [illegible]	
Additional Treatment Processes		
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	5 [illegible]	
[illegible]	5 [illegible]	

[illegible]

Solids Handling		
[illegible]	5 [illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	2
[illegible]	[illegible]	
Disinfection (0 to 10 points maximum)		
[illegible]	[illegible]	
[illegible]	5 [illegible]	5
[illegible]	[illegible]	
Effluent Discharge (0 to 10 points maximum)		
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	4
[illegible]	[illegible]	
Instrumentation (0 to 6 point maximum)		
[illegible]	[illegible]	0
[illegible]	[illegible]	
[illegible]	[illegible]	
[illegible]	[illegible]	
Laboratory Control (0 to 15 point maximum) [2]		
Bacteriological/Biological Laboratory Control (0 to 5 point maximum)		
[illegible]	[illegible]	0
[illegible]	[illegible]	
[illegible]	5 [illegible]	
Chemical/Physical Laboratory Control (0 to 10 point maximum)		
[illegible]	[illegible]	0
[illegible]	[illegible]	
[illegible]		

[illegible]

[illegible]	5 [illegible]	
M [illegible]	[illegible]	
[illegible]	[illegible]	
TOTAL POINTS FOR YOUR SYSTEM		24

System Classification Key	Classification
[illegible]	[illegible]
[illegible] 55 [illegible] 5 5 [illegible] [illegible]	■ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible]

[illegible] [illegible]

[illegible] [illegible]

[illegible]

Wastewater Treatment Definitions

[illegible] **Activated Sludge** [illegible]

[illegible] **Biological or chemical/biological advanced wastewater treatment** [illegible]

[illegible] **Chemical addition** [illegible]

[illegible] **Chemical/physical advanced treatment following secondary** [illegible]

[illegible] **Chemical/physical advanced treatment without secondary** [illegible]

[illegible]

Discharge to Receiving Water [illegible]

Fixed-film reactor [illegible]

Imhoff tanks (or similar) [illegible]

Land application of biosolids by contractor [illegible]

Land treatment and disposal (surface or subsurface) [illegible]

Mechanical dewatering [illegible]

Mechanical post aeration [illegible]

Media Filtration [illegible]

Solids composting [illegible]

Solids stabilization [illegible]

Wastewater Treatment Facility. [illegible]

Membrane Biological Reactor (MBR) Point Factoring - [illegible]

[illegible]

OFFICE USE ONLY
DON'T WRITE HERE

[illegible]

Name of System: City of McCammon Wastewater Treatment

Legal Owner of Collection System: City of McCammon

System Address: P.O. Box 9

City: McCammon **State:** ID **Zip Code:** 83250

Contact Person: Rich Pierson **Title:** Public Works Director

Business Phone Number: 208 251-2683 **Email:** mccammonpwd@gmail.com

Collection System Classification Worksheet is (check one):

☐ **Initial System Rating** ☐ **System Upgrade** ☒ **Standard 5 yr Rating**

Date of last system classification rating (if applicable) unknown

Collection System - Design Flow/Actual Flow _____ / 251-2683

Item		Points	Your System
System Size (Minimum 3 points)			
M[illegible]	5.6 mlles	[illegible]	6
[illegible]	292	[illegible]	2
[illegible]	89	[illegible]	1
[illegible]	5	[illegible]	5
M[illegible]	2.1	[illegible]	3
Odor Abatement			
[illegible]		[illegible]	
[illegible]		[illegible]	
[illegible]		[illegible]	
Maintenance Management System			
M[illegible]		[illegible]	3
M[illegible]		[illegible]	
[illegible]		5 [illegible]	
[illegible]		5 [illegible]	
[illegible]		5 [illegible]	
		TOTAL POINTS FOR YOUR SYSTEM	24

System Classification Key	Your Classification
System size subtotal of [illegible] or less [illegible]	☐ [illegible]
[illegible]	☐ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible]

[illegible]

Mail form to: Department of Environmental Quality, 1410 N. Hilton, Boise, Idaho 83706, Attn: Jerimiah Fenton or Jerimiah.Fenton@deq.idaho.gov

Appendix C

Financial Information

City of McCammon Financial Information 2016 to 2020

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CITY OF McCAMMON, IDAHO

BASIC FINANCIAL STATEMENTS

SEPTEMBER 30, 2016

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUE, EXPENDITURES, AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED SEPTEMBER 30, 2016

	General Fund	Street Fund	Park Fund	Totals Governmental Funds
REVENUE:				
Property taxes	$163,080	$44,245	$14,039	$221,364
Sales tax	21,196			21,196
Business Franchise tax	18,419			18,419
Liquor tax	29,295			29,295
Highway users' tax		37,062		37,062
Interest on taxes	2,416			2,416
Revenue sharing	11,356	10,000	10,000	31,356
Road and bridge		15,155		15,155
Licenses and permits	2,008			2,008
Fire District	10,000			10,000
Garbage fees	55,536			55,536
Interest on investments	2,303			2,303
Miscellaneous	8,190		2,547	10,737
Total revenue	323,799	106,462	26,586	456,847
EXPENDITURES:				
Current operating:				
General government	210,869			210,869
Public safety	35,554			35,554
Parks and recreation			19,410	19,410
Highways and streets		98,608		98,608
Total expenditures	246,423	98,608	19,410	364,441
EXCESS REVENUE (EXPENDITURES)	77,376	7,854	7,176	92,406
OTHER FINANCING SOURCES (USES):				
Transfers (to) from other funds	0	0	0	0
NET CHANGE IN FUND BALANCE	77,376	7,854	7,176	92,406
FUND BALANCE - OCTOBER 1, 2015	397,258	7,076	288	404,622
FUND BALANCE - SEPTEMBER 30, 2016	$474,634	$14,930	$7,464	$497,028

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED SEPTEMBER 30, 2016

	Water Fund	Sewer Fund	Totals
REVENUES:			
Hook-ups	$0	$0	$0
Miscellaneous	14	2,255	2,269
Service fees	175,022	176,013	351,035
	175,036	178,268	353,304
EXPENSES:			
Benefits	7,506	3,413	10,919
Contracts	1,500	1,243	2,743
Depreciation	37,673	68,502	106,175
Dues			0
Fuel	777	720	1,497
Insurance	2,908	3,172	6,080
Miscellaneous	2,505	195	2,700
Repairs	23,977	31,654	55,631
Salaries	36,841	16,746	53,587
Samples	4,665	18,504	23,169
Supply	3,481		3,481
Utilities & telephone	6,742	9,947	16,689
Total expenses	128,575	154,096	282,671
OPERATING INCOME:	46,461	24,172	70,633
NON-OPERATING REVENUE (EXPENSES):			
Debt service interest	(18,935)	(33,175)	(52,110)
INCOME (LOSS)	27,526	(9,003)	18,523
Transfer (to) from other funds	0	0	0
NET CHANGE IN POSITION	27,526	(9,003)	18,523
NET POSITION - BEGINNING	969,819	1,719,556	2,689,375
NET POSITION - ENDING	$997,345	$1,710,553	$2,707,898

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

BASIC FINANCIAL STATEMENTS

SEPTEMBER 30, 2017

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUE, EXPENDITURES, AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED SEPTEMBER 30, 2017

	General Fund	Street Fund	Park Fund	Totals Governmental Funds
REVENUE:				
Property taxes	$158,020	$43,514	$13,843	$215,377
Sales tax	18,789			18,789
Business Franchise tax	19,049			19,049
Liquor tax	31,259			31,259
Highway users' tax		37,168		37,168
Interest on taxes	2,862			2,862
Revenue sharing	32,250			32,250
Road and bridge		13,438		13,438
Licenses and permits	1,241			1,241
Fire District	5,000			5,000
Garbage fees	57,189			57,189
Interest on investments	5,525			5,525
Miscellaneous	3,459		300	3,759
Total Revenue:	334,643	94,120	14,143	442,906
EXPENDITURES:				
Current operating:				
General government	214,833			214,833
Public safety	41,675			41,675
Parks and recreation			26,673	26,673
Highways and streets		212,931		212,931
Total Expenditures;	256,508	212,931	26,673	496,112
EXCESS REVENUE (EXPENDITURES)	78,135	(118,811)	(12,530)	(53,206)
OTHER FINANCING SOURCES (USES):				
Transfers (to) from other funds	0	0	0	0
NET CHANGE IN FUND BALANCE	78,135	(118,811)	(12,530)	(53,206)
FUND BALANCE - OCTOBER 1, 2016	474,634	14,930	7,464	497,028
FUND BALANCE - SEPTEMBER 30, 2017	$552,769	($103,881)	($5,066)	$443,822

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED SEPTEMBER 30, 2017

	Water Fund	Sewer Fund	Totals
REVENUES:			
Hook-ups	$100		$100
Miscellaneous	50	$1,200	1,250
Service fees	183,850	188,250	372,100
Total Revenues:	184,000	189,450	373,450
EXPENSES:			
Benefits	4,637	2,106	6,743
Contracts	1,720	15,337	17,057
Depreciation	38,787	64,063	102,850
Dues			0
Fuel	863	4,342	5,205
Insurance	3,033	3,308	6,341
Miscellaneous	2,252	68	2,252
Repairs	30,779	12,898	43,677
Salaries	39,027	17,740	56,767
Samples	251		251
Supply	12,728	33,190	45,918
Utilities & telephone	3,886	10,477	14,363
Total Expenses:	137,963	163,529	301,424
OPERATING INCOME:	46,037	25,921	72,026
NON-OPERATING REVENUE (EXPENSES):			
Insurance proceeds	10,000		10,000
Debt service interest	(9,419)	(31,964)	(41,383)
INCOME (LOSS)	46,618	(6,043)	40,575
Transfer (to) from other funds	0	0	0
NET CHANGE IN POSITION	46,618	(6,043)	40,575
NET POSITION - BEGINNING	997,345	1,710,553	2,707,898
NET POSITION - ENDING	$1,043,963	$1,704,510	$2,748,473

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

BASIC FINANCIAL STATEMENTS

SEPTEMBER 30, 2018

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUE, EXPENDITURES, AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED SEPTEMBER 30, 2018

	General Fund	Street Fund	Park Fund	Totals Governmental Funds
REVENUE:				
Business franchise tax	$18,786			$18,786
Fire District				0
Garbage fees	56,960			56,960
Highway users' tax		$37,648		37,648
Interest on investments	12,192			12,192
Interest on taxes	3,095			3,095
Licenses and permits	8,363			8,363
Liquor tax	32,589			32,589
Miscellaneous	7,932		$600	8,532
Property taxes	167,531	46,078	14,620	228,229
Revenue sharing	34,030			34,030
Road and bridge		9,957		9,957
Sales tax	20,235			20,235
Total Revenue:	361,713	93,683	15,220	470,616
EXPENDITURES:				
Current operating:				
General government	245,570			245,570
Highways and streets		173,129		173,129
Parks and recreation			21,418	21,418
Public safety	35,388			35,388
Total Expenditures:	280,958	173,129	21,418	475,505
EXCESS REVENUE (EXPENDITURES)	80,755	(79,446)	(6,198)	(4,889)
OTHER FINANCING SOURCES (USES):				
Transfers (to) from other funds	(113,930)	108,996	4,934	0
NET CHANGE IN FUND BALANCE	(33,175)	29,550	(1,264)	(4,889)
FUND BALANCE - OCTOBER 1, 2017	552,769	(103,881)	(5,066)	443,822
FUND BALANCE - SEPTEMBER 30, 2018	$519,594	($74,331)	($6,330)	$438,933

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED SEPTEMBER 30, 2018

	Water Fund	Sewer Fund	Totals
REVENUES:			
Hook-ups	$3,557		$3,557
Miscellaneous		$100	100
Service fees	169,449	172,602	342,051
Total Revenues:	173,006	172,702	345,708
EXPENSES:			
Benefits	7,349	3,341	10,690
Contracts	100	1,970	2,070
Depreciation	38,943	72,579	111,522
Dues			0
Fuel	812	3,517	4,329
Insurance	3,370	3,676	7,046
Miscellaneous	5,372	210	2,252
Repairs	25,866	13,144	39,010
Salaries	37,659	17,117	54,776
Samples	1,418		1,418
Supply	3,917	27,932	31,849
Travel and training	202	120	322
Utilities & telephone	9,670	9,141	18,811
Total Expenses:	134,678	152,747	284,095
OPERATING INCOME:	38,328	19,955	61,613
NON-OPERATING REVENUE (EXPENSES):			
Debt service interest	(9,600)	(31,569)	(41,169)
INCOME (LOSS)	28,728	(11,614)	17,114
Transfer (to) from other funds	0	0	0
NET CHANGE IN POSITION	28,728	(11,614)	17,114
NET POSITION - BEGINNING	1,043,963	1,704,510	2,748,473
NET POSITION - ENDING	$1,072,691	$1,692,896	$2,765,587

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

BASIC FINANCIAL STATEMENTS

SEPTEMBER 30, 2019

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUE, EXPENDITURES, AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED SEPTEMBER 30, 2019

	General Fund	Street Fund	Park Fund	Totals Governmental Funds
REVENUE:				
Business franchise tax	$17,630			$17,630
Fire District	12,215			12,215
Garbage fees	57,580			57,580
Highway users' tax		$39,492		39,492
Interest on investments	21,883			21,883
Interest on taxes	2,578			2,578
Licenses and permits	2,529			2,529
Liquor tax	32,708			32,708
Miscellaneous	24,272		$650	24,922
Property taxes	171,539	48,105	15,184	234,828
Revenue sharing	15,476	10,000	10,000	35,476
Road and bridge		8,955		8,955
Sales tax	24,818			24,818
Total Revenue:	383,228	106,552	25,834	515,614
EXPENDITURES:				
Current operating:				
General government	278,379			278,379
Highways and streets		186,182		186,182
Parks and recreation			18,684	18,684
Public safety	49,276			49,276
Total Expenditures:	327,655	186,182	18,684	532,521
EXCESS REVENUE (EXPENDITURES)	55,573	(79,630)	7,150	(16,907)
OTHER FINANCING SOURCES (USES):				
Transfers (to) from other funds	(89,401)	83,266	6,135	0
NET CHANGE IN FUND BALANCE	(33,828)	3,636	13,285	(16,907)
FUND BALANCE - OCTOBER 1, 2018	519,594	(74,331)	(6,330)	438,933
FUND BALANCE - SEPTEMBER 30, 2019	$485,766	($70,695)	$6,955	$422,026

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED SEPTEMBER 30, 2019

	Water Fund	Sewer Fund	Totals
REVENUES:			
Hook-ups			$0
Miscellaneous	$280	$1,680	1,960
Service fees	175,986	176,939	352,925
Total Revenues:	176,266	178,619	354,885
EXPENSES:			
Benefits	6,540	2,989	9,529
Contracts	100	9,608	9,708
Depreciation	49,896	70,605	120,501
Dues	5,118		5,118
Fuel	835	2,942	3,777
Insurance	1,733	1,891	3,624
Miscellaneous		330	330
Repairs	31,186	17,867	49,053
Salaries	37,960	17,477	55,437
Samples	2,504		2,504
Supply	3,220	32,800	36,020
Travel and training	133		133
Utilities & telephone	3,303	7,342	10,645
Total Expenses:	142,528	163,851	306,379
OPERATING INCOME:	33,738	14,768	48,506
NON-OPERATING REVENUE (EXPENSES):			
Debt service interest	(11,231)	(30,322)	(41,553)
INCOME (LOSS)	22,507	(15,554)	6,953
Transfer (to) from other funds	0	0	0
NET CHANGE IN POSITION	22,507	(15,554)	6,953
NET POSITION - BEGINNING	1,072,691	1,692,896	2,765,587
NET POSITION - ENDING	$1,095,198	$1,677,342	$2,772,540

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

BASIC FINANCIAL STATEMENTS

SEPTEMBER 30, 2020

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUE, EXPENDITURES, AND CHANGES IN FUND BALANCES
GOVERNMENTAL FUNDS
YEAR ENDED SEPTEMBER 30, 2020

	General Fund	Street Fund	Park Fund	Totals Governmental Funds
REVENUE:				
Business franchise tax	$17,546			$17,546
Fire District	22,556			22,556
Garbage fees	59,194			59,194
Highway users' tax		$38,953		38,953
Interest on investments	16,362			16,362
Interest on taxes	2,519			2,519
Licenses and permits	9,592			9,592
Liquor tax	35,183			35,183
Miscellaneous	4,226		$150	4,376
Property taxes	177,127	48,440	15,286	240,853
Revenue sharing	32,450	10,000	10,000	52,450
Road and bridge		569		569
Sales tax	11,841			11,841
Total Revenue:	388,596	97,962	25,436	511,994
EXPENDITURES:				
Current operating:				
General government	224,011			224,011
Highways and streets		193,738		193,738
Parks and recreation			38,476	38,476
Public safety	54,950			54,950
Total Expenditures:	278,961	193,738	38,476	511,175
EXCESS REVENUE (EXPENDITURES)	109,635	(95,776)	(13,040)	819
OTHER FINANCING SOURCES (USES):				
Transfers (to) from other funds	(79,000)	79,000		0
NET CHANGE IN FUND BALANCE	30,635	(16,776)	(13,040)	819
FUND BALANCE - OCTOBER 1, 2019	485,766	(70,695)	6,955	422,026
FUND BALANCE - SEPTEMBER 30, 2020	$516,401	($87,471)	($6,085)	$422,845

The accompanying notes are an integral part of these statements.

CITY OF McCAMMON, IDAHO

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION
PROPRIETARY FUNDS
YEAR ENDED SEPTEMBER 30, 2020

	Water Fund	Sewer Fund	Totals
REVENUES:			
Hook-ups	$140		$140
Miscellaneous			0
Service fees	171,556	$175,779	347,335
Total Revenues:	171,696	175,779	347,475
EXPENSES:			
Contracts	1,500		1,500
Depreciation	59,289	75,764	135,053
Fuel	1,705	1,212	2,917
Insurance	2,492	2,718	5,210
Miscellaneous	4,298	326	4,624
Personnel benefits	11,819	5,391	17,210
Repairs	45,380	13,938	59,318
Salaries	40,067	18,463	58,530
Samples	3,750		3,750
Supply	3,562	27,346	30,908
Travel and training	374	497	871
Utilities and telephone	3,642	7,784	11,426
Total Expenses:	177,878	153,439	331,317
OPERATING INCOME:	(6,182)	22,340	16,158
NON-OPERATING REVENUE (EXPENSES):			
Debt service interest	(7,133)	(29,039)	(36,172)
INCOME (LOSS)	(13,315)	(6,699)	(20,014)
Transfer (to) from other funds	0	0	0
NET CHANGE IN POSITION	(13,315)	(6,699)	(20,014)
NET POSITION - OCTOBER 1, 2019	1,095,198	1,677,342	2,772,540
NET POSITION - SEPTEMBER 30, 2020	$1,081,883	$1,670,643	$2,752,526

The accompanying notes are an integral part of these statements.

Appendix D

Capital Improvement Plan Alternatives

Winter Storage Lagoon Depth Calculation

Project Summary Sheets

- Capital Improvement Plan
- CIP- Schedule
- CS 1.1 Lift Station 3
- CS 1.2 Portable Generator
- CS 1.3 Sewer Repairs
- CS 1.4 Lift Station 4
- TP 1.1 Influent Screen and Flow Measurement
- TP 1.2 Biosolids and Aeration
- TP 1.3 Generator and SCADA
- TP 1.4 Winter Storage Lagoon and Fence
- TP 1.5 Land Application

McCammon Winter Storage Lagoon Depth
Calculation Check
Project No. 219128-000
10/14/2022

System Parameters		Flow (gpm)	Flow (cfs)	Velocity (fps)	Friction Loss (ft)	Minor Losses (ft)	Max System Head (ft)
Force Main Length (ft)	400	120	0.267	0.766	0.13	0.01	-0.9
Diameter (In)	8	150	0.334	0.957	0.19	0.02	-0.8
Pipe Area (ft^2)	0.349	180	0.401	1.149	0.27	0.03	-0.7
Pipe Type	PVC	210	0.468	1.340	0.35	0.04	-0.6
Hazen-Williams C	140	260	0.579	1.660	0.52	0.06	-0.4
Cell 3 WS El.	4766.5	320	0.713	2.043	0.77	0.09	-0.1
Max wet well el.		400	0.891	2.553	1.16	0.14	0.3
Int. HGL	4765.5	500	1.114	3.192	1.76	0.21	1.0

Minor Losses			
Fitting Dia (in)		8	
Fitting Area (ft^2)		0.349	
Fitting	K value	Quant.	Total
90° Bend	0.24	1	0.24
Plug Valve	0.3	1	0.3
Entrance	0.8	1	0.8
Exit	1	0	0
Total			1.34

System Parameters		Flow (gpm)	Flow (cfs)	Velocity (fps)	Friction Loss (ft)	Minor Losses (ft)	Max System Head (ft)
Force Main Length (ft)	450	120	0.267	0.766	0.13	0.01	-0.9
Diameter (In)	12	150	0.334	0.957	0.19	0.02	-0.8
Pipe Area (ft^2)	0.785	180	0.401	1.149	0.27	0.03	-0.7
Pipe Type	PVC	210	0.468	1.340	0.35	0.04	-0.6
Hazen-Williams C	140	260	0.579	1.660	0.52	0.06	-0.4
Int. HGL	4765.5	**320**	**0.713**	**2.043**	**0.77**	**0.09**	**-0.1**
Max wet well el.		400	0.891	2.553	1.16	0.14	0.3
Winter Storage WS El.	4764.5	500	1.114	3.192	1.76	0.21	1.0
Winter Storage Bottom El.	4750.8						
Winter Storage Depth (ft)	**13.7**						

Minor Losses			
Fitting Dia (in)		12	
Fitting Area (ft^2)		0.785	
Fitting	K value	Quant.	Total
90° Bend	0.24	0	0
Plug Valve	0.3	1	0.3
Entrance	0.8	0	0
Exit	1	1	1
Total			1.3

This calculation shows that approximately 2 feet of head is needed to drive 2060 Peak Day Flows of 0.465 MGD, or 323 gpm by gravity from Cell 3 to the Winter Storage Lagoon.

City of McCammon Wastewater Facilities Planning Study
Capital Improvement Plan

ID#	Improvement Item	Purpose(s)	Total Estimated Cost (2022)
Priority 1 Improvements			
CS 1.1	Lift Station No. 3	Upgrade Old Lift Station	$ 313,000
CS 1.2	Portable Generator	Provide Backup Power for Lift Stations	$ 65,000
CS 1.3	Sewer Repairs	Repair/Replace Problem Areas	$ 1,000,000
CS 1.4	Lift Station No. 4	Provide Capacity/Update to Current Codes	$ 509,000
TP 1.1	Influent Screen and Flow Measurement	Protect Equipment and Measure Flow	$ 1,000,000
TP 1.2	Biosolids and Aeration	Provide Capacity	$ 500,000
TP 1.3	Generator and SCADA	Provide Backup Power for WWTP and Alarms	$ 410,000
TP 1.4	Winter Storage Lagoon and Fence	Add Capacity and Protect Public	$ 2,050,000
TP 1.5	Land Application	Provide Additional Capacity	$ 205,000
	Total Priority 1 Improvements		**$ 6,052,000**
TOTAL WASTEWATER IMPROVEMENTS COSTS			**$ 6,052,000**

The cost estimate herein is concept level information only based on our perception of current conditions at the project location and its accuracy is subject to significant variation depending upon project definition and other factors. This estimate reflects our opinion of probable costs at this time and is subject to change as the project design matures. This cost opinion is in 2022 dollars and does not include escalation to time of actual construction. Keller Associates has no control over variances in the cost of labor, materials, equipment, services provided by others, contractor's methods of determining prices, competitive bidding or market conditions, practices or bidding strategies. Keller Associates cannot and does not warrant or guarantee that proposals, bids, or actual construction costs will not vary from the cost presented herein.

City of McCammon
Wastewater Facilities Planning Study
CIP Schedule

ID#	Item	Cost	Opinion of Probable Costs (2022 Dollars)		
			2022	2023	2024
Priority 1 Improvements (2020-2025)					
CS 1.1	Lift Station No. 3	$ 313,000	$ 313,000		
CS 1.2	Portable Generator	$ 65,000		$ 65,000	
CS 1.3	Sewer Repairs	$ 1,000,000		$ 100,000	$ 900,000
CS 1.4	Lift Station No. 4	$ 509,000		$ 50,000	$ 459,000
TP 1.1	Influent Screen and Flow Measurement	$ 1,000,000		$ 500,000	$ 500,000
TP 1.2	Biosolids and Aeration	$ 500,000		$ 50,000	$ 450,000
TP 1.3	Generator and SCADA	$ 410,000		$ 41,000	$ 369,000
TP 1.4	Winter Storage Lagoon and Fence	$ 2,050,000		$ 1,025,000	$ 1,025,000
TP 1.5	Land Application	$ 205,000		$ 20,000	$ 185,000
Total (rounded)		**$ 6,052,000**	**$ 313,000**	**$ 1,851,000**	**$ 3,888,000**

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Wastewater Facilities Project: **Lift Station No. 3**
Project Identifier: **CS 1.1**

Objective: Replace existing old lift station with a new precast concrete vault and wet well, sewer grinder pumps, piping, valves, and electrical. Sewer flows will be bypassed during construction.

Location: State Street and 15th Street

Item		Estimated Cost (2022)
Bypass Sewer	$	10,000
Demolition	$	8,000
Site Work	$	10,000
Lift Station and Valve Vault Precast	$	30,000
Pumps	$	50,000
Piping and Valves	$	14,000
Electrical/Controls	$	30,000
Improvement Subtotal	***$***	***152,000***
General Conditions	$	15,000
Subtotal	***$***	***167,000***
Contingency	$	50,000
Subtotal	***$***	***217,000***
Contractor Overhead & Profit	$	33,000
Total Construction Cost	**$**	**250,000**
General Design, Inspection, and Administrative Costs	$	63,000
Total Project Cost	**$**	**313,000**

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Wastewater Facilities Project: **Portable Generator**
Project Identifier: **CS 1.2**

Objective: Replace the existing portable generator with a generator that can be used at each of the lift stations.

Project Location: Lift Stations

Item	Estimated Cost (2022)
Portable Generator	$ 50,000
Subtotal	***$ 50,000***
Contingency	$ 15,000
Total Project Cost	**$ 65,000**

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Wastewater Facilities Project: **Sewer Repairs**
Project Identifier: **CS 1.3**

Objective: Identify and repair or replace up to 3,000 lf of sewer.

Location: Collection System

Item	Estimated Cost (2022)
Clean and CCTV	$ 42,000
Sewer Repairs and/or Replacement	$ 444,000
Improvement Subtotal	***$ 486,000***
General Conditions	$ 49,000
Subtotal	***$ 535,000***
Contingency	$ 161,000
Subtotal	***$ 696,000***
Contractor Overhead & Profit	$ 104,000
Total Construction Cost	**$ 800,000**
General Design, Inspection, and Administrative Costs	$ 200,000
Total Project Cost	**$ 1,000,000**

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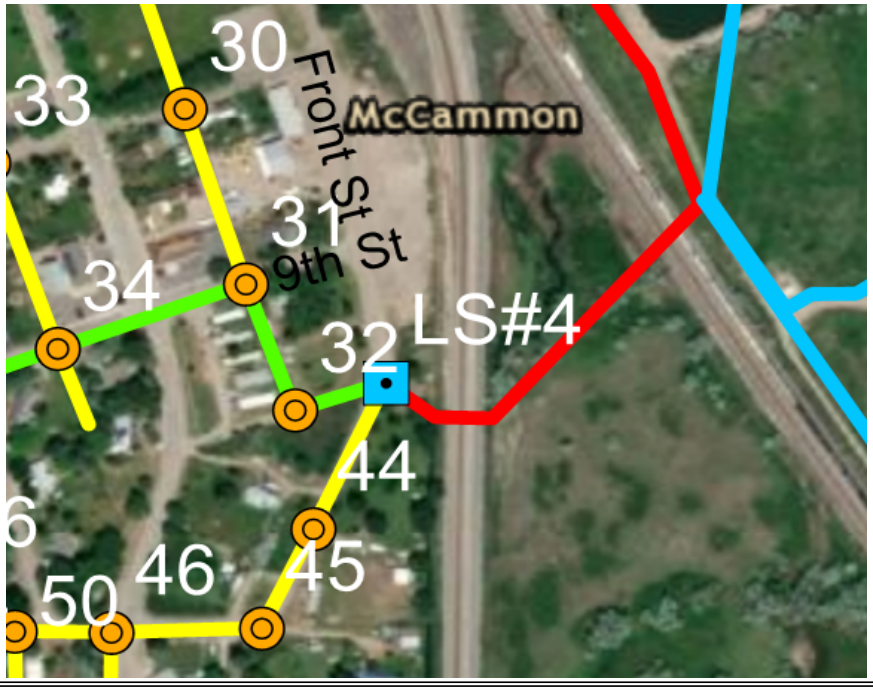
Wastewater Facilities Project: **Lift Station No. 4**
Project Identifier: **CS 1.4**

Objective: Replace existing lift station which is undersized with a new precast concrete vault and wet well, non-clog sewage pumps, piping, valves, and electrical. Sewer flows will be bypassed during construction.

Location: Front Street



Item		Estimated Cost (2022)
Bypass Sewer	$	14,000
Demolition	$	10,000
Site Work	$	12,000
Lift Station and Valve Vault Precast	$	40,000
Pumps	$	80,000
Piping and Valves	$	16,000
Electrical/Controls	$	60,000
SCADA	$	15,000
Improvement Subtotal	***$***	***247,000***
General Conditions	$	25,000
Subtotal	***$***	***272,000***
Contingency	$	82,000
Subtotal	***$***	***354,000***
Contractor Overhead & Profit	$	53,000
Total Construction Cost	**$**	**407,000**
General Design, Inspection, and Administrative Costs	$	102,000
Total Project Cost	**$**	**509,000**

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Wastewater Facilities Project: **Influent Screen and Flow Measurement**
Project Identifier: **TP 1.1**

Objective: Construct a headworks at the WWTP that includes influent flow measurement for planning and operational information. The headworks would also include an automatic influent screen along with a manual bypass screen.

Location: WWTP

Item	Estimated Cost (2022)	
Site Work	$	18,000
Flow Meter	$	20,000
Automatic Screen	$	180,000
Bypass Screen	$	8,000
Building	$	180,000
Electrical/Controls	$	80,000
Improvement Subtotal	***$***	***486,000***
General Conditions	$	49,000
Subtotal	***$***	***535,000***
Contingency	$	161,000
Subtotal	***$***	***696,000***
Contractor Overhead & Profit	$	104,000
Total Construction Cost	**$**	**800,000**
General Design, Inspection, and Administrative Costs	$	200,000
Total Project Cost	**$**	**1,000,000**

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Wastewater Facilities Project: **Biosolids and Aeration**
Project Identifier: **TP 1.2**

Objective: Remove biosolids from the treatment lagoons to increase the capacity and remove rags in the system. Upgrade the existing aerators to provide sufficient aeration for the planning period.

Location: WWTP

Item	Estimated Cost (2022)
Remove Biosolids	$ 180,000
New Surface Aerators	$ 70,000
Electrical/Controls	$ 20,000
Improvement Subtotal	***$ 270,000***
General Conditions	$ 30,000
Subtotal	***$ 300,000***
Contingency	$ 90,000
Subtotal	***$ 390,000***
Contractor Overhead & Profit	$ 60,000
Total Construction Cost	**$ 450,000**
General Design, Inspection, and Administrative Costs	$ 50,000
Total Project Cost	**$ 500,000**

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Wastewater Facilities Project: **Generator and SCADA**
Project Identifier: **TP 1.3**

Objective: Provide a permanent backup generator at the WWTP to ensure aeration, screening, flow measurement, irrigation pumping, and disinfection occur even during a power outage. Add a SCADA system to be used to send alarms in the event of equipment failure.

Location: WWTP

Item	Estimated Cost (2022)
WWTP Generator	$ 100,000
SCADA	$ 100,000
Improvement Subtotal	***$ 200,000***
General Conditions	$ 20,000
Subtotal	***$ 220,000***
Contingency	$ 70,000
Subtotal	***$ 290,000***
Contractor Overhead & Profit	$ 40,000
Total Construction Cost	**$ 330,000**
General Design, Inspection, and Administrative Costs	$ 80,000
Total Project Cost	**$ 410,000**

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Wastewater Facilities Project: **Winter Storage Lagoon and Fence**
Project Identifier: **TP 1.4**

Objective: Increase capacity of winter storage lagoon and install new liner. Replace the fence on the west side of the lagoon.

Location: Winter Storage Lagoon

Item	Estimated Cost (2022)
Clean out existing winter storage and old lagoons	$ 200,000
Raise Dikes and pond bottom	$ 800,000
Line Ponds	$ 630,000
Fence	$ 120,000
Improvement Subtotal	***$ 1,000,000***
General Conditions	$ 100,000
Subtotal	***$ 1,100,000***
Contingency	$ 330,000
Subtotal	***$ 1,430,000***
Contractor Overhead & Profit	$ 210,000
Total Construction Cost	**$ 1,640,000**
General Design, Inspection, and Administrative Costs	$ 410,000
Total Project Cost	**$ 2,050,000**

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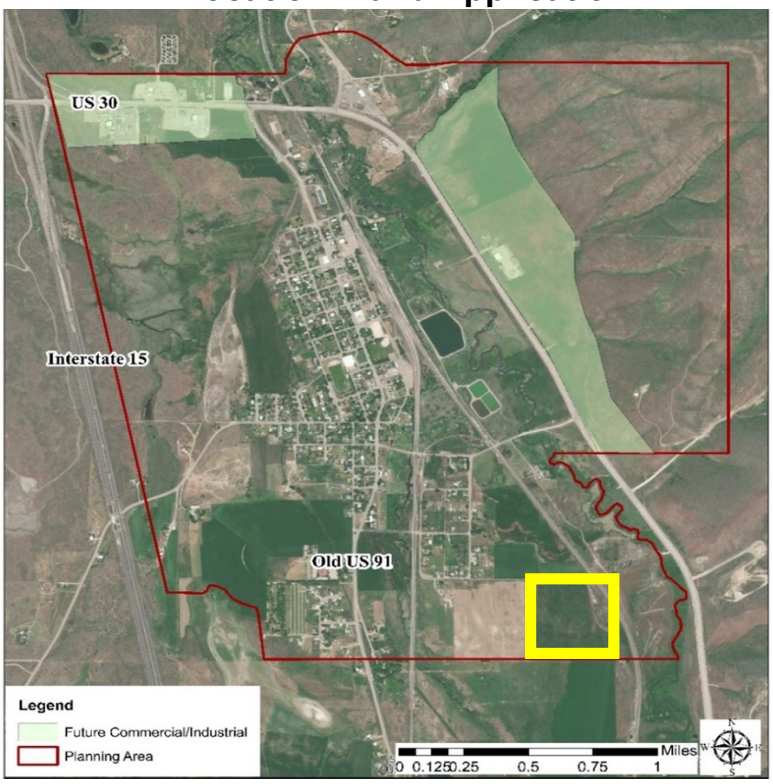
Wastewater Facilities Project: **Land Application**
Project Identifier: **TP 1.5**

Objective: Clear, level, and improve the land application site so that an additional four acres of land can be used and the existing land can be better utilized.

Location: Land Application



Item	Estimated Cost (2022)
Demolition	$ 20,000
Site Grading	$ 80,000
Improvement Subtotal	***$ 100,000***
General Conditions	$ 10,000
Subtotal	***$ 110,000***
Contingency	$ 33,000
Subtotal	***$ 143,000***
Contractor Overhead & Profit	$ 21,000
Total Construction Cost	**$ 164,000**
General Design, Inspection, and Administrative Costs	$ 41,000
Total Project Cost	**$ 205,000**

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