DEQ
Montana Department
of Environmental Quality

January 22, 2020

FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED GOVERNMENTAL AGENCIES AND PUBLIC GROUPS

As required by state and federal rules for determining whether an Environmental Impact Statement is necessary, an environmental review has been performed on the proposed action below:

Project	Absarokee Wastewater Treatment Improvements
Location	Absarokee, Montana
Project Number	C301308
Total Cost	$6,150,000

The Absarokee Sewer Rural Special Improvement District (RSID) owns and operates wastewater collection and treatment facilities that serve the community of Absarokee, MT. The District's facilities are not currently in compliance with their Montana Pollutant Discharge Elimination System (MPDES) permit, and are not designed to meet future stringent ammonia limits. The District is under an Administrative Order on Consent (AOC) issued in 2013 by the Montana Department of Environmental Quality (DEQ) to remedy the situation. To address the compliance issues and the District's own concerns with the existing wastewater system, they prepared a Preliminary Engineering Report (PER) in 2016 which included an analysis of the existing wastewater facilities and development of several treatment alternatives.

The recommended alternative in the 2016 PER included the continued use of the existing lagoon treatment system with a new synthetic liner and aeration system, a submerged aerated growth reactor (SAGR) system for ammonia removal, ultraviolet (UV) disinfection system upgrades, and year-round discharge. Since completion of the 2016 PER it has been determined that the upgrades must remain within the footprint of the existing lagoon site. To achieve desired treatment levels in a smaller footprint, a moving bed bioreactor (MBBR) has been added to the design. The project also includes a new intermediate lift station, new blower building, and sludge removal and disposal. While infiltration and inflow (I/I) in the collection system is considered excessive and should be addressed, meeting the milestones in the AOC with the DEQ and future effluent limits must take precedence. The District intends to pursue collection system improvements in the future as funding allows. Construction of the proposed improvements is scheduled to begin in the spring of 2020 and will be completed by the end of December 2020.

Federal and State grant/loan programs will fund the project. Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species, and historical sites are not expected to be adversely impacted because of the proposed project. Public participation during the planning process demonstrated support for the selected alternative. No significant long-term environmental impacts were identified.

An environmental assessment (EA), which describes the project and analyzes the impacts in more detail, is available for public scrutiny on the DEQ web site (http://www.deq.mt.gov/Public/ea) and at the following locations:

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Department of Environmental Quality
1520 East Sixth Avenue
P.O. Box 200901
Helena, MT 59620-0901
Jeremy.Perlinski@mt.gov

Mark Crago, Commission Chair
Stillwater County
PO Box 970
Columbus, MT 59019

Comments on the EA may be submitted to the Department of Environmental Quality at the above address. After evaluating comments received, the department will revise the environmental assessment or determine if an environmental impact statement is necessary. If no substantive comments are received during the comment period, or if substantive comments are received and evaluated and the environmental impacts are still determined to be non-significant, the agency will make a final decision. No administrative action will be taken on the project for at least 30 calendar days after release of the Finding of No Significant Impact.

Sincerely,

Kevin B. Smith, P.E.
Engineering Bureau
Water Quality Division
Montana Department of Environmental Quality

ABSAROKEE WASTEWATER TREATMENT IMPROVEMENTS

ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant:	Stillwater County/Absarokee Sewer RSID
Address:	PO Box 970 Columbus, MT 59019
Project Number:	C301308

B. CONTACT PERSON

Name:	Mark Crago, Commission Chair
Address:	PO Box 970 Columbus, MT 59019
Telephone:	(406) 322-8010

C. ABSTRACT

The Absarokee Sewer Rural Special Improvement District (RSID) owns and operates wastewater collection and treatment facilities that serve the community of Absarokee, MT. The District's current four-cell lagoon facility, last upgraded in 1989, is followed by an ultraviolet (UV) disinfection system prior to discharge into a ditch that flows into Rosebud Creek. The wastewater treatment facility (WWTF) operates under Montana Pollutant Discharge Elimination System (MPDES) permit MT0021750 which allows for two discharge points, one to a ditch draining to Rosebud Creek (Outfall 001) and one directly to Rosebud Creek (Outfall 01A). The District has decided to continue discharging to the ditch and forego a new outfall to Rosebud Creek. The current permit (effective February 1, 2017) has effluent limits for biochemical oxygen demand (BOD), total suspended solids (TSS), and *E. coli.* Discharge to the ditch does not currently have an ammonia limit; however, the permit requires compliance with ammonia limits by January 1, 2021.

The District's facilities are not currently in compliance with the permit, and are not designed to meet the future stringent ammonia limits, so they are under an Administrative Order on Consent (AOC) issued in 2013 by the Montana Department of Environmental Quality (DEQ) to remedy the situation. To address the compliance issues and the District's own concerns with the existing wastewater system, they hired Great West Engineering to prepare a Preliminary Engineering Report (PER) in 2016 which included an analysis of the existing wastewater facilities and development of several treatment alternatives.

The recommended alternative in the 2016 PER included the continued use of the existing lagoon treatment system with a new synthetic liner and aeration system, a submerged aerated growth reactor (SAGR) system for ammonia removal, UV system upgrades, and year-round discharge to the ditch. Since completion of the 2016 PER it has been determined that the upgrades must remain within the footprint of the existing lagoon site. To achieve desired treatment levels in a smaller footprint, a moving bed bioreactor (MBBR) has been added to the design. The project also includes a new intermediate lift station, new blower building, and sludge removal and disposal. While infiltration and inflow (I/I) in the collection system is considered excessive and should be addressed, meeting the milestones in the AOC and future effluent limits must take precedence. The District intends to pursue collection system improvements in the future as funding allows. Construction of the proposed improvements is scheduled to begin in the spring of 2020 and will be completed by the end of December 2020.

Federal and State grant/loan programs will fund the project. The upgrade, including administrative, engineering, and finance costs, is estimated to cost approximately $6,150,000. It is anticipated that the project will be funded through $269,000 of District reserves; a $1,656,000 grant and $3,350,000 loan combination from the USDA/Rural Development (RD) program; a $750,000 grant from the Department of Commerce Delivering Local Assistance (DLA) program; and a $125,000 grant from the Renewable Resource Grant & Loan (RRGL) program. It should be noted that the DLA grant process is still in process, so these funds have not been awarded at this time. The Water Pollution Control State Revolving Fund (WPCSRF) program will be utilized for interim financing until the long-term RD loan is put into place.

Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species, and historical sites are not expected to be adversely impacted because of the proposed project. Additional environmental impacts related to land use, water quality, air quality, public health, energy, noise, growth, and sludge disposal were also assessed. No significant long-term environmental impacts were identified.

Under Montana law, (75-6-112, MCA), no person may construct, extend, or use a public sewage system until the Department of Environmental Quality (DEQ) has reviewed and approved the plans and specifications for the project. Under the Montana Water Pollution Control State Revolving Fund Act, the DEQ may loan money to municipalities for construction of public sewage systems.

The DEQ Engineering Bureau has prepared this Environmental Assessment to satisfy the requirements of the Montana Environmental Policy Act (MEPA) and the National Environmental Policy Act (NEPA).

D. COMMENT PERIOD

Thirty (30) calendar days

II. PURPOSE OF AND NEED FOR ACTION

The original AOC was issued on January 4, 2013, due to a series of MPDES permit limit exceedances during the period of January 2007 through October 2012 for Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and *E. coli*. An Amendment to the AOC was issued in November 2016 that modified the implementation plan and milestone dates. In addition to repeated noncompliance with its MPDES permit, the existing lagoon system is also not capable of meeting its new ammonia limit (4.9 mg/L monthly average) or upcoming nutrient standards for Total Nitrogen (TN) and Total Phosphorus (TP).

The proposed project focuses on correction of WWTF deficiencies needed to achieve compliance with existing MPDES permit limits, as well as the future ammonia standard. Also, significant sludge depths have been measured in the existing lagoon cells which further hinder treatment performance. Sludge from the existing lagoon cells will be removed and land-applied on nearby farmland in accordance with Federal 40 CFR 503 sludge disposal regulations or hauled to a landfill, if land application is not a viable option.

The proposed WWTF improvements will address long-standing MPDES permit compliance challenges, as well as the new ammonia limits in the permit. The existing lagoons are unlined and likely leaking into the shallow groundwater table. The proposed project includes a new synthetic liner which will help protect water resources and public health in the area. Compliance with the nutrient standards will be addressed by requesting a variance from DEQ. The AOC requires the district to complete construction and commence operation of its new WWTF by December 31, 2020. Collection system improvements to reduce infiltration and inflow (I/I) will be addressed in the future as funds allow.

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. TREATMENT ALTERNATIVES

The 2016 PER considered 17 treatment alternatives, including no action, during the initial screening process. The 14 alternatives that were not given further consideration after the initial screening process are described as follows:

1. No Action
   The no action alternative includes no upgrades to the District's existing lagoon facility, which has been out-of-compliance with the effluent standards in its permit and is not capable of meeting future ammonia limits. The District must take some action to satisfy the requirements in the AOC. Therefore, the no-action alternative was not considered to be a viable option, and was given no further consideration.

2. Partial Mix Mechanically Aerated Lagoons (Existing Technology)
   This technology is currently being used at the District's WWTF. This technology uses mechanical means for diffusing air into the wastewater and is not adequate to remove ammonia or nutrients. Because of the treatment limitations of this alternative, it will not be considered further as a stand-alone technology.

3. Total Retention Ponds
   This alternative consists of constructing new large, shallow ponds that rely solely on evaporation to eliminate the wastewater effluent. The lined ponds would require a significant amount of land given the District's large flows during irrigation season. Because of this high land requirement and associated lining cost, a total retention system will not be considered further.

4. High Rate Land Application – Discharge to Groundwater
   This alternative would require a Montana Ground Water Pollution Control System (MGWPCS) permit for disposal of the wastewater into rapid infiltration ponds. Depending on proximity of the infiltration area to Rosebud Creek and other environmental factors, a high level of treatment prior to disposal is likely required. The expenses and complexities of this alternative preclude it from being a viable option deserving further consideration.

5. Activated Sludge Mechanical Plant
   While an activated sludge wastewater treatment plant can provide high quality effluent with respect to secondary standards and ammonia removal, it is a biologically/mechanically complex process that requires significant utility power and high operator skill. This alternative will not be considered further due to its elevated level of complexity and high capital and operational costs.

6. Custom 3-Stage Biological Nutrient Removal (BNR)
   This alternative incorporates biological nutrient removal using the Modified Ludzack-Ettinger (MLE) activated sludge treatment process. While it can be configured to remove both TN and TP, this technology is not considered practical for such a small treatment facility. The high capital and operational expenses and complexities of this alternative preclude it from being a viable option deserving of further consideration.

7. Package Membrane Bioreactor (MBR)
   This type of mechanical plant uses membrane filters to provide a very high level of wastewater treatment. While there is a space savings with the membrane treatment process itself, this is offset by additional space needed for a headworks building, solids handling facilities, etc. Due to the high capital cost and complex operational and maintenance requirements, this alternative will not be considered further.

8. Package Sequencing Batch Reactor (SBR)
   The SBR process uses a single reactor for all the treatment processes including aeration, biological treatment, and clarification. Like the MBR, there is a space savings that is somewhat offset by ancillary buildings and processes. The SBR has much higher capital and operation and maintenance costs than other feasible alternatives and will not be considered further.

9. Package Extended Aeration Activated Sludge (Oxidation Ditch)
   An oxidation ditch is an extended aeration process that is more operator-friendly than most and produces a stable sludge due to its high hydraulic retention time

and long sludge age. It can be controlled in a manner to achieve TN removal. The oxidation ditch has a higher capital cost than other mechanical alternatives considered in the PER, and so was not considered further.

10. Constructed Wetlands
    Artificially constructed wetlands can be used to remove nutrients and employ both aerobic and anaerobic biological processes. Wetlands often follow some form of primary treatment such as lagoons or septic tanks. Given the effluent limits in the District's MPDES permit, wetlands could not be used as a stand-alone process and were not evaluated further.

11. Packed Bed Treatment (Advantex)
    This treatment alternative utilizes a fixed film, packed bed treatment system to treat wastewater to secondary standards. It is also capable of removing ammonia. Due to its very high cost when compared to the other viable treatment alternatives, it will not be considered further.

12. Existing Partial Mix Lagoons with Effluent Polishing by Bio Domes
    The existing lagoon cells would continue to be utilized after the addition of an improved aeration system. The Bio Domes (aerated, fixed film devices) would be placed in the final lagoon cell to facilitate ammonia removal and enhance BOD and TSS removal. Because this technology is more expensive than the SAGR alternative that accomplishes the same purposes, it will not be considered further.

13. Existing Partial Mix Lagoons with Mixing Zone Study and In-Stream Diffuser
    This alternative consists of completion of a mixing zone study and construction of a diffuser in Rosebud Creek to provide the necessary mixing to meet the ammonia limit in the MPDES permit. The existing, aerated lagoon system would continue in operation. Preliminary calculations indicated that the final ammonia limit would still be around 10 mg/L, which is impractical for a partial mix lagoon to meet year-round. Since this doesn't satisfy the District's treatment needs, this alternative is not considered further.

14. New Complete/Partial Mix Aerated Lagoons (Lemna)
    This lagoon process includes pre-screening, a complete mix zone/partial mix lagoon, polishing reactor, and clarifier or effluent filters. This technology would greatly improve BOD and TSS performance and would remove ammonia. TN and TP would not be removed and would require an additional treatment strategy. The high utility power costs associated with this technology when compared to other viable alternatives preclude it from further consideration.

The three viable alternatives selected for further consideration are as follows:

Alt. T-1: Storage and Irrigation (Low Rate Land Application)
This alternative applies treated effluent to agricultural land at agronomic rates, so non-degradation of groundwater is not a concern and a MGWPCS permit is not necessary. In this type of system, wastewater is treated in primary lagoons and stored during the winter months prior to land application during the growing season. The need for disinfection is dependent on the available buffer around the

land application site. Soil conditions of the proposed site(s) need to be verified to confirm feasibility for this type of effluent disposal. Most soils near Absarokee are not suitable for "spray irrigation of wastewater effluent" according to the Natural Resources Conservation Service (NRCS) web soil survey information; however, there are four potential areas with suitable soils and adequate acreage. The proposed alternative includes reusing the existing lagoon system, constructing a new 26-million-gallon storage pond, and land application on nearly 232 acres of agricultural property near Absarokee.

Alt. T-2: Extended Aeration Activated Sludge (Biolac)
This is an extended aeration activated sludge process within a single aeration basin constructed in an earthen, lagoon type reactor. Ancillary facilities for headworks equipment, clarification, solids handling, etc., would be needed. TN removal can be achieved by adjusting mechanical aeration to create alternating aerobic and anoxic conditions. TP could also be removed to a sufficient level. This alternative is considered further due to its ability to meet treatment needs in a smaller footprint; simpler operations compared to other mechanical plant technologies; and cost effectiveness.

Alt. T-3: Partial Mix Lagoons with Submerged Attached Growth Reactor (SAGR)
This treatment alternative utilizes the existing lagoons with improved aeration, followed by a submerged, aerated gravel bed to remove ammonia and provide better TSS and BOD removal. The alternative includes constructing a moving bed bioreactor (MBBR) process to remove additional BOD and ammonia prior to the SAGR units. Upgrading the existing UV disinfection system is also included with this alternative. TN and TP would not be removed with this technology; however, nutrient limits can be addressed by requesting a general lagoon variance.

B. CAPITAL COST COMPARISON AND PRESENT WORTH ANALYSIS

The present worth analysis is a means of comparing alternatives in present day dollars and can be used to determine the most cost-effective alternative when operation and maintenance (O&M) costs are taken into consideration. An alternative with a low, initial capital cost may not be the most cost-efficient project if high O&M costs occur over the life of the alternative. An interest rate of 3% over the 20-year planning period was used in the analysis. Tables 1 provides a summary of the present worth analysis of the viable alternatives considered.

TABLE 1
ECONOMIC EVALUATION OF TREATMENT ALTERNATIVES

Alt. #	Alternative	Capital Cost	Annual O&M	O&M Present Worth	Total Present Worth
T-1	Storage and Irrigation	$8,558,000	$32,250	$479,799	$9,037,799
T-2	Extended Aeration Activate Sludge	$4,837,000	$75,980	$1,130,392	$5,967,392
T-3	Partial Mix Lagoon w/ SAGR	$4,874,850	$63,050	$938,026	$5,812,876

C. BASIS OF SELECTION OF PREFERRED ALTERNATIVE

Selection of the preferred alternative was based upon several criteria, both monetary and non-monetary. These criteria include life cycle costs, operation and maintenance complexity, permitting, social and environmental impacts, public health and safety, land acquisition, and public acceptance. The life cycle cost analysis consisted of a calculated comparison of the total present worth of each alternative to the other viable alternatives. The non-monetary factors were given a score ranging from 0 to 10 for each criterion, with 0 having a negative impact and 10 representing the maximum benefit to the community. The criteria were also weighted in relation to each other, with the criteria most important to the District receiving higher weights. The highest total score indicates the highest ranked alternative.

TABLE 2
RANKING OF TREATMENT ALTERNATIVES

		Alternative T-1		**Alternative T-2**		**Alternative T-3**	
	Weight	Score	Wt. Score	Score	Wt. Score	Score	Wt. Score
Life Cycle Costs	10	3.2	32	6.6	66	6.8	68
Operation & Maintenance	7	7	49	4	28	6	42
Permitting	5	8	40	5	25	5	25
Social Impacts	5	6	30	8	40	8	40
Environmental Impacts	5	7	35	9	45	9	45
Public Health & Safety	10	8	80	8	80	8	80
Land Acquisition	7	2	14	10	70	10	70
Public Opinion	10	2	20	5	50	5	50
Total Weighted Score			**300**		**404**		**420**

As shown in the ranking matrix above, Alternative T-3 ranked the highest due to a lower present worth cost; simpler operation and maintenance requirements; ability to meet stringent effluent limits; and public acceptance given the lower initial construction cost in comparison to the other treatment alternatives. Under this alternative, the District would apply for a lagoon variance from DEQ to postpone implementation of the nutrient limits during the planning period.

The estimated administration, engineering, finance, and construction cost for the recommended project (Alternative T-3) is $6,150,000. The District intends to fund the treatment upgrade through a $750,000 Department of Commerce Delivering Local Assistance program grant; $125,000 Renewable Resource Grant & Loan program grant; $1,656,000 USDA/Rural Development grant; $3,350,000 RD loan (40 years @ 3.125%); and $269,000 of District funds. It should be noted that the

DLA grant process is still in process, so these funds have not been awarded at this time. The Water Pollution Control State Revolving Fund program will be utilized for interim financing until the long-term RD loan is put into place.

In the Absarokee Sewer RSID, the annual residential sewer rate in 2015 was $204.60 per user assessed on County taxes. The County adopted a resolution in August 2015 increasing rates by $5.24 per month per user for each of the following three years. This rate increase resulted in a monthly user rate in 2018 of roughly $32.77. It is anticipated that the residential user rate will have to be raised (an additional $18.18 per month) to $50.95 per month to cover the cost of the proposed improvements. While $50.95 is the best estimate at this time, the end user rate will depend upon the final funding package and contractor's construction bid.

Table 3 provides data on the monthly residential sewer rate and median household income for Absarokee community. Based on EPA guidance for project affordability, the proposed project will result in a monthly cost per household that is a little under 1.4% of the monthly median household income, and therefore, is not expected to impose a substantial economic hardship on most households.

Table 3
PROJECT AFFORDABILITY

Monthly residential sewer rate[1]	$50.95
Monthly median household income (mMHI)[1]	$3,698
Sewer rate as a percentage of mMHI	1.38%

[1] 2016 Uniform Application

IV. AFFECTED ENVIRONMENT

A. PLANNING AREA/MAPS

Absarokee is an unincorporated community in Stillwater County, in southcentral Montana. Absarokee is located on Highway 78 roughly 14 miles south of Columbus. A vicinity map is presented in Figure 1. The community covers roughly 2 square miles. The planning area includes the Absarokee Sewer RSID boundary, Absarokee Water District (only owns and operates the water system) boundary, and areas that may be developed in the future. The Absarokee Census Designated Place (CDP) boundary and planning area are shown in Figure 2. This figure also shows the location of the District's existing WWTF. Figure 3 shows the preliminary layout of the treatment facility improvements. Figure 4 shows three potential sites for land application of biosolids removed from the lagoon cells, and the haul routes to these sites.

B. POPULATION AND FLOW PROJECTIONS

Population trends for both the Absarokee CDP and Stillwater County were reviewed to gain a better understanding of past growth in the area. Stillwater

County has experienced consistent growth since 1990, although data shows it has slowed in recent years. Annual growth within Absarokee has been variable since 1990, including a period of decline from 2000 to 2010. However, since 2010 a steady growth rate of roughly 5% has been recognized in Absarokee. Based on the existing population within the CDP and anticipated future connections to the sewer system, it is likely that the District will experience continued growth over the planning period. The 2016 PER states that a growth rate of 18% during the 20-year planning period will provide a conservative basis of design. With this growth rate, the current population of 1,064 persons is estimated to increase to 1,253 people in 2036.

Absarokee is comprised of residential and commercial properties. The current wastewater flows were estimated from historic influent flows to the District's WWTF, 2015 summer flow monitoring results, and recent winter water use data. Given irrigation ditch operation and shallow groundwater in the spring and summer months, I/I is considered a significant source to the wastewater system. Flows increase by more than 600,000 gallons per day during irrigation season compared to non-irrigation times of year. It is assumed that deteriorated sewer lines and basement sumps are the main contributors of I/I to the system. Wastewater generated in the service area is considered low strength due to the amount of I/I in the system. Concentrations of BOD and TSS range from 110-150 mg/L during non-irrigation months to 30-60 mg/L during irrigation season based on discharge monitoring reports included in the 2016 PER. Projected flows are based on the existing flow values with the assumption that growth will contribute 100 gallons per capita day for the increased population since new infrastructure will minimize the amount of I/I to the system. The wastewater flows for the current and future populations reported in the 2016 PER are summarized below in Table 4.

Table 4
PROJECTED POPULATION AND WASTEWATER FLOWS

Year	Population	Annual Average (gal/day)	Irrigation Season (gal/day)	Non-Irrigation Season (gal/day)
2016	1,064	443,200	753,500	133,000
2036	1,253	462,100	772,400	151,900

C. NATURAL FEATURES

The topography around the WWTF property is relatively flat, gently sloping to Rosebud Creek along the north and west boundaries. The Beartooth Mountain Range is located south of Absarokee. The project site sits at an elevation of roughly 4,040 ft above sea level. The nearby mountains can rise to an elevation over 12,000 ft. Based on the Natural Resources Conservation Service mapping, most of the planning area consists of soils classified as gravelly and very gravelly loam.

Absarokee is located south of the Stillwater River and Rosebud Creek flows along the west boundary of the community. There are numerous irrigation ditches that flow seasonally throughout the planning area. The District's existing WWTF discharges effluent to a ditch that ultimately returns to Rosebud Creek. During irrigation season, groundwater is within five feet of the ground surface. According to the Groundwater Information Center (GWIC), well logs from 144 shallow wells in the area reported an average static water level of 12 ft below the top of casing.

The average high temperature in the Absarokee area is 84°F, but can occasionally top 100°F during the summer months. The average low temperature is approximately 12°F, with periods of sub-zero temperatures at times during the winter months. The average annual precipitation is nearly 15.0 inches per year, with nearly 40% of that falling during the spring months. The total annual snowfall for Absarokee is approximately 56 inches per year.

V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. DIRECT AND INDIRECT ENVIRONMENTAL IMPACTS

1. Land Use/Prime Farmland – Within Absarokee, land use is predominantly residential or commercial, while land near the existing WWTF is primarily undeveloped and either idle or used for ranching activities. The treatment system improvements will be located within the existing treatment facility footprint or on adjacent property currently owned by Stillwater County. The NRCS web soil survey denotes the land near the existing WWTF as farmland of local importance which requires that a NRCS AD-1006 form be completed for the project. According to the submitted Form AD-1006, the the project will impact approximately one acre of farmland of importance which does not require mitigation, as noted in the response letter from NRCS. Construction will temporarily disturb the affected areas, but will be completed with surface restoration such as revegetation or gravel roads.

2. Floodplains – As noted previously, Absarokee is located near the Stillwater River and Rosebud Creek. Based on floodplain maps for the area, the existing WWTF lies within the mapped floodplain of Rosebud Creek. However, the proposed Blower Building will be constructed outside the 100-year floodplain. The Department of Natural Resources and the Stillwater County Floodplain Administrator were notified of this project and asked to reply with any concerns. See *Section X, Agencies Consulted* of this report for a summary of their comments.

3. Wetlands – The Montana Natural Heritage Program Wetland and Riparian mapping system does not show the presence of wetlands or riparian areas near the existing WWTF. However, the mapping may not be complete, and wetlands may be present. The impacted area will be evaluated for the presence of wetlands during the final design phase of the project. The Army Corps of Engineers was contacted regarding the proposed improvements and their comments are summarized in *Section X, Agencies Consulted* of this report.

4. Cultural Resources – Based on a records search performed by the State Historical Preservation Office (SHPO), no impacts to cultural resources are anticipated. Most of the construction activity will occur on previously disturbed ground and no structures will be impacted. If cultural resource materials are discovered during construction, work will be halted and SHPO will be contacted to perform further investigation. SHPO was contacted regarding the proposed improvements and their comments are summarized in *Section X, Agencies Consulted* of this report.

5. Fish and Wildlife – The project will not permanently affect any wildlife habitats, nor will any known endangered species be affected. A search of the Montana Natural Heritage Program revealed the presence of six species of concern: Great Blue Heron, Black-billed Cuckoo, Pinyon Jay, Cassin's Finch, Greater Short-Horned Lizard, and Yellowstone Cutthroat Trout. One plant species of concern, the Musk-Root, is listed in the database. There will likely be temporary impacts to existing wildlife and vegetation during construction, but those impacts will be minimized with implementation of best management practices by the contractor. The project is not located within any designated sage grouse habitat area. The U.S. Fish and Wildlife Services and Montana Fish, Wildlife, and Parks were contacted regarding the proposed improvements and their comments are summarized in *Section X, Agencies Consulted* of this report.

6. Water Quality – Groundwater at Absarokee's WWTP is within five feet of the surface during the irrigation season. The new concrete structures at the WWTP will be constructed and tested to verify watertightness and the repurposed lagoon cells and SAGR units will be synthetically lined and tested to ensure there will be no impacts to groundwater from the upgrades.

   The proposed project will also protect surface water quality by providing a higher level of nutrient and pathogen removal which is important for continued recreation in the area. Treated effluent from the upgraded WWTF will continue to discharge to the ditch and Rosebud Creek via the District's existing MPDES permit MT0021750. The permit was issued in February 2017 and will expire on January 31, 2022. The receiving water has a B-1 Montana Water Use Classification. B-1 waters are to be maintained suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply. The 2016 303(d) list identified that Rosebud Creek between the East and West Branches to the mouth at the Stillwater River is impaired for aquatic life use. The probable causes are benthic macroinvertebrate bioassessments, but the probable source is unknown.

   The current MPDES permit has interim effluent limits that are in effect until December 31, 2020. These include monthly average limits for BOD and TSS of 30 mg/L and 45 mg/L, respectively. The permit has percent removal

values of 85% for BOD and 65% for TSS. The average monthly limit for *E. coli* is 126 cfu/100mL during the summer/fall months and 630 cfu/100mL during the winter/spring months. The permit also includes an average monthly ammonia limit that becomes effective January 1, 2021 for the outfall to the ditch. Control of ammonia is necessary to prevent eutrophication of the river, prevent anoxic conditions, and protect aquatic organisms from toxicity. The proposed project will provide ammonia removal through the addition of the MBBR and SAGR processes. It will also result in enhanced BOD and TSS removal. The upgraded UV disinfection system will be continuously operated and will be designed to meet standards for *E. coli* bacteria stipulated in the District's MPDES permit. The proposed improvements to the existing WWTF will result in a much better effluent quality discharging to the ditch, and ultimately Rosebud Creek.

The DEQ has the statutory authority to develop effluent limits and issue discharge permits consistent with the Montana Water Quality Act and rules adopted under the Act. The DEQ has set effluent limits in the District's discharge permit that are protective of water quality and beneficial uses by ensuring there will be no increase of a parameter to a level that renders the waters harmful, detrimental or injurious to users. As part of the permitting process, DEQ is required to perform a significance determination to assess whether an activity (i.e., discharge) will cause degradation of the receiving water or not. The DEQ determined that the constructed discharges will not result in the degradation of the receiving water provided the limits established in the permit are maintained.

7. Air Quality – Short-term negative impacts on air quality are expected to occur during construction from heavy equipment in the form of dust and exhaust fumes. Proper construction practices will minimize this problem with the project specifications requiring dust control. The upgraded WWTF will produce some odors associated with the wastewater treatment process, but will be greatly reduced from previous levels given the improved aerated processes proposed for the project.

8. Public Health – Public health will not be negatively affected by the proposed project. The upgraded WWTF will reduce the potential to pollute surface and groundwater. Wastewater will be treated to the limits required by the District's MPDES permit prior to disposal. The WWTF improvements will produce a higher quality effluent in comparison to that produced by the existing lagoon facility. As a result, there should be improved surface water quality downstream of the WWTF's outfall location.

9. Energy – An increase in energy consumption will occur after the new treatment plant is constructed, due largely to the addition of aeration blowers and lift station pumps. Energy consumption will be minimized as much as possible using energy efficient process equipment and variable frequency drives on pumps and blowers. The consumption of energy resources directly associated with construction of the recommended improvements is unavoidable, but will be a short-term impact.

10. Noise – Short-term impacts from excessive noise levels may occur during construction activities. The construction period will be limited to normal daytime hours to avoid early morning or late evening construction disturbances. No significant long-term impacts from noise should occur. All process equipment will be housed in buildings or provided with enclosures to minimize noise associated with the operation of the facility.

11. Sludge Disposal – It is intended that all sludge (biosolids) will be pumped from the existing cells, dewatered to roughly 15% solids content, and either land-applied in accordance with Federal 40 CFR 503 sludge disposal regulations or hauled to a landfill for disposal. The Part 503 regulations contain specific numerical limits and other requirements for heavy metals, pathogens, and vector attraction. A potential contractor must perform verification of sludge quantity, in-place sludge nutrient content, identification of a disposal site, and nutrient testing of soils at the application site. The final sludge disposal plan utilizing this information must be submitted to DEQ for review and approval prior to sludge disposal.

    The sludge would be removed using a slurry pump and dewatered in geofabric dewatering bags or via another method determined by the contractor; transported to appropriate, nearby farmland and land-applied by surface incorporation; or hauled to a landfill. With an estimated 4,700 cubic yards of sludge at 7% solids content in the existing lagoons, approximately 25 to 100 acres of land is required, depending on the type of crop intended for the field. The District's engineer has identified two potential sludge disposal sites within 5 miles of the existing WWTF. A third land app site just north of Columbus (roughly 16 miles away) is another option for bidding contractors. The three potential land application sites are shown on Figure 4.

    Soils in the Absarokee area are somewhat or very limited for sludge application according to NRCS web soil survey data. If a suitable land application site cannot be found, the sludge will be hauled to a landfill, presuming it meets the paint-filter liquids test and other requirements of the Part 258 Landfill Rule. The closest landfill to Absarokee that can accept wastewater sludge is in Billings, approximately 60 miles away.

12. Environmental Justice – The proposed WWTF project will not result in disproportionately high or adverse human health or environmental effects on minority or low-income populations. All base sewer rates will be increased equally. No disproportionate effects among any portion of the community would be expected. The project will be funded with grants and low interest loans to minimize the impact on lower income sewer customers.

13. Wild and Scenic River Act – The proposed project will not impact any rivers designated as wild and scenic by Congress or the Secretary of the Interior.

14. Growth – The proposed wastewater improvements will be designed to serve the projected 2036 population of 1,253, which is an increase of 18% during the 20-year planning period over the current population. This growth is estimated from historical population levels in Stillwater County and within the Absarokee CDP and projected development.

15. Cumulative Effects – The increased capacity at the WWTF may result in secondary and/or cumulative impacts due to growth of the community and expansion of the service area. Secondary impacts associated with housing, commercial development, solid waste, transportation, utilities, air quality, water utilization, and possible loss of agricultural and rural lands may occur. These secondary impacts are uncertain at this time, and therefore, cannot be directly addressed in the EA. However, these impacts will need to be managed and minimized as much as possible through proper community planning. There are several existing district, county and state regulations already in place (i.e., zoning regulations, comprehensive planning, subdivision laws, etc.) that control the density and development of property with regards to water supply, sewage disposal, solid waste disposal, transportation, and storm drainage.

B. UNAVOIDABLE ADVERSE IMPACTS

Short-term construction related impacts (i.e., noise, dust, etc.) will occur, but should be minimized through proper construction management. Energy consumption during construction and energy for operation of the upgraded WWTF cannot be avoided.

VI. PUBLIC PARTICIPATION

Stillwater County held a public hearing on August 13, 2015, to propose a rate increase to pay for the needed wastewater system improvements. The public meeting also included a summary of the PER process and potential upgrades from Great West Engineering. No objections to the rate increase were received from the public; however, it was suggested that an advisory committee be created to solicit and provide input during the decision-making process.

A second public hearing was held on March 9, 2016, to discuss the ongoing planning work for the project. Great West Engineering presented the proposed upgrades in detail, including the scope of the project, budget, and potential funding scenarios. The engineer also presented the environmental assessment that was prepared and allowed input from the public on the potential environmental impacts. Attendees at this public hearing were generally in favor of the project and excited that the improvements would allow for and potentially encourage growth in the community. The Stillwater County Commissioners accepted and approved (through Resolution No. 2016-16) the findings and recommendations of the 2016 PER on April 19, 2016.

A project update was presented to the public during the September 9, 2019 Stillwater County Commission meeting. Great West Engineering reviewed the purpose, project history, and provided a summary of the changes to the project since the 2016 PER was adopted by the Commission. Revised project costs, funding strategy, and schedule were presented to the public.

VII. AGENCY ACTION, APPLICABLE REGULATIONS AND PERMITTING AUTHORITIES

All proposed improvements will be designed to meet state standards in accordance with Design Standards for Public Sewage Systems (Circular DEQ-2), and will be constructed using standard construction methods. Best management practices will be implemented to minimize or eliminate pollutants during construction activities. An asbestos inspection will be completed prior to starting construction to identify possible asbestos-containing materials. No additional permits will be required from the State Revolving Fund (SRF) section of the DEQ for this project after the review and approval of the submitted plans and specifications. However, coverage under the storm water general discharge permit and groundwater dewatering discharge permit, are required from the DEQ Water Protection Bureau prior to the beginning of construction. A Section 404 permit from the U.S. Army Corp of Engineers, a 124 Permit from the Department of Fish, Wildlife and Parks, and a 318 Authorization from the Department of Environment Quality will be required for any work that occurs in a streambed or wetland, and will be obtained if necessary.

VIII. RECOMMENDATION FOR FURTHER ENVIRONMENTAL ANALYSIS

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

Rationale for Recommendation: Through this EA, the DEQ has verified that none of the adverse impacts of the proposed Absarokee Wastewater Treatment Improvements project are significant. Therefore, an environmental impact statement is not required. The environmental review was conducted in accordance with the Administrative Rules of Montana (ARM) 17.4.607, 17.4.608, 17.4.609, and 17.4.610. The EA is the appropriate level of analysis because none of the adverse effects of the impacts are significant.

IX. REFERENCE DOCUMENTS

The following documents have been utilized in the environmental review of this project and are considered to be part of the project file:

1. Stillwater County Absarokee Sewer RSID 2016 Preliminary Engineering Report, May 2016, prepared by Great West Engineering.

2. Stillwater County Absarokee Sewer RSID 5 & 7 Environmental Report, December 2017, prepared by Great West Engineering.

3. Uniform Application Form for Montana Public Facility Projects, April 2016, prepared by Stillwater County.

4. Absarokee Sewer District RSID 5 & 7 Stillwater County Authorization to Discharge Under the Montana Pollutant Discharge Elimination System, Permit No. MT0021750; issued February 1, 2017; prepared by Montana Department of Environmental Quality.

5. Miscellaneous Correspondence – Absarokee Wastewater System Improvements, May 2019 – January 2020, prepared by Great West Engineering.

X. AGENCIES CONSULTED

The following agencies have been contacted regarding the proposed construction of this project:

1. The Montana Department of Natural Resources and Conservation (DNRC) was contacted on February 17, 2016 regarding impacts to floodplains from the proposed project. An email was received from the DNRC on March 3, 2016 indicating that a floodplain development permit may be required by Stillwater County and to coordinate further with the local floodplain administrator. An email response was received from the Stillwater County Environmental Health Department on March 4, 2016 stating that a portion of the proposed treatment system is within the 100-year floodplain of Rosebud Creek, and a floodplain development permit will be required during the design phase of the project.

2. The Montana Department of Fish, Wildlife and Parks (FWP) was contacted on February 17, 2016 regarding any impacts to fish and wildlife due to the proposed project. Montana FWP stated in a February 29, 2016 response letter that wildlife and fisheries staff had no specific comments regarding the proposed project.

3. The Montana State Historic Preservation Office (SHPO) was contacted on February 17, 2016 and reviewed the project for historical significance. According to their records, there have been several previously recorded sites and a few cultural resource inventories done within the designated search locales. In a February 22, 2016 email, SHPO stated that as long as there will be no disturbance or alteration to structures over fifty years of age they feel that there is a low likelihood that cultural properties would be impacted and, as such, felt a cultural resource inventory is unwarranted at this time. However, should structures need to be altered or cultural materials be inadvertently discovered during the project, SHPO must be contacted and the site investigated.

4. The U.S. Department of the Army Corps of Engineers (USCOE) was contacted on February 17, 2016 regarding impacts to wetlands due to the proposed project. The USCOE stated in a March 4, 2016 response letter that placement of fill material in any area below the ordinary high-water mark of any stream channel, lake or pond, or wetland would require a permit. Based on the project's scope a permit from the USCOE is not anticipated. As noted previously, the impacted area will be evaluated for the presence of wetlands during the final design phase of the project and any necessary permits will be obtained at that time.

5. The U.S. Fish and Wildlife Service (FWS) was contacted on February 17, 2016. The FWS stated in a March 28, 2016 response letter that there could be potential effects to migratory birds during project construction. Construction activities should be scheduled, to the extent possible, to not disrupt nesting birds and take all practicable measures to avoid and minimize take of migratory birds, their eggs, or active nests. FWS is not aware of any know bald or golden eagle nests within the project vicinity, although general bald eagle activity may occur in the Rosebud Creek area. The threatened grizzly bear may occasionally be present in the proposed project vicinity, although the project is not within the Yellowstone grizzly bear recovery zone or conservation area. FWS also recommends keeping any temporary disturbances to stream channels to the minimum extent and duration possible to reduce short-term impacts to aquatic species.

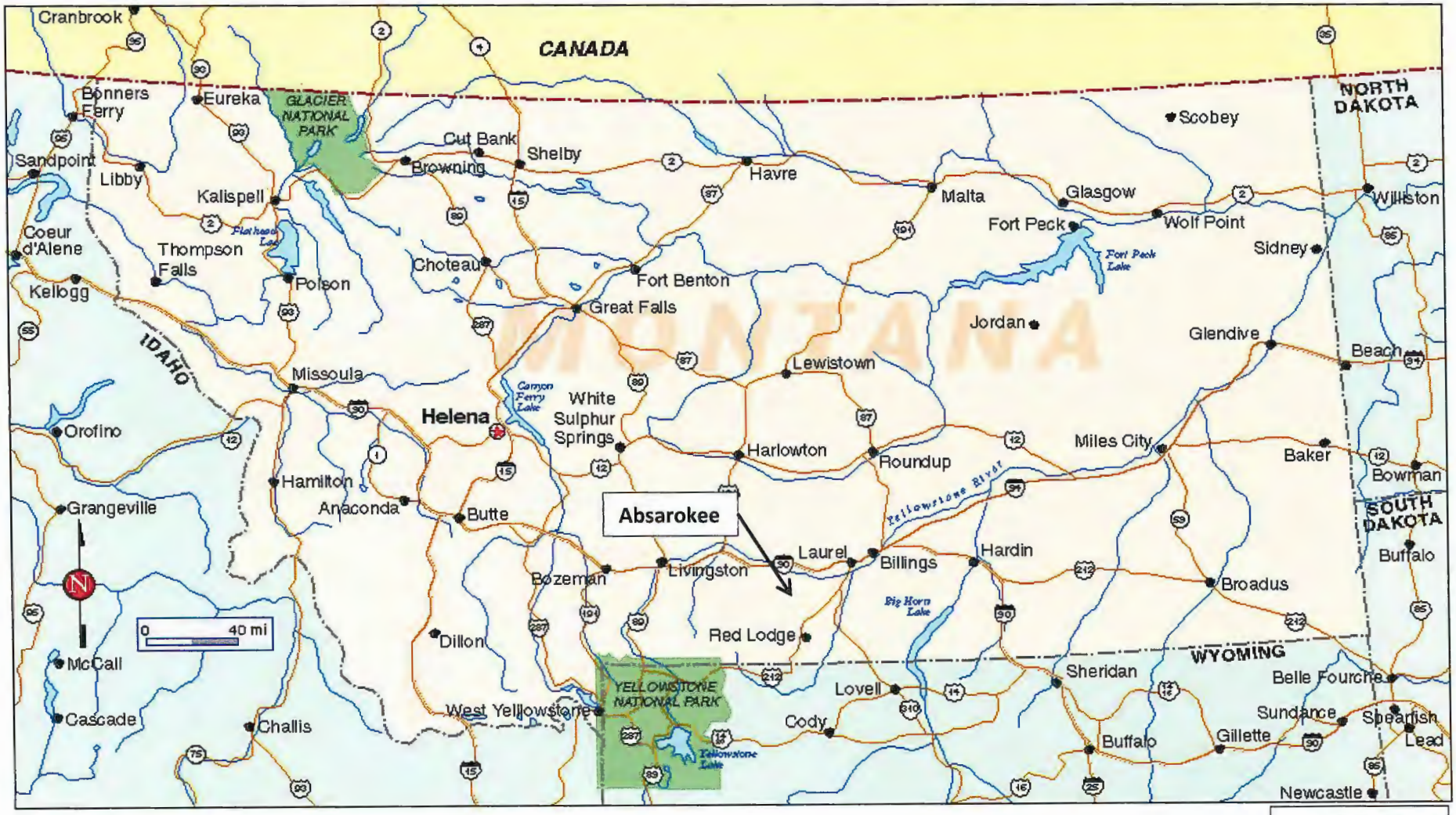
6. The Department of Environmental Quality's Source Water Protection staff and Waste Management and Remediation Division staff have assessed the proposed project site for potential contaminant sources (PCSs). There are no PCSs identified within the project area.

EA Prepared by:

Jeremy Perlinski, P.E. — Date: 1/22/2020

EA Reviewed by:

Michele Marsh, P.E. — Date: 1/22/2020


CANADA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
IDAHO
MONTANA
Cranbrook
Bonners Ferry
Eureka
GLACIER NATIONAL PARK
Cut Bank
Shelby
Browning
Havre
Scobey
Sandpoint
Libby
Kalispell
Malta
Glasgow
Williston
Coeur d'Alene
Thompson Falls
Flathead Lake
Fort Peck
Wolf Point
Fort Peck Lake
Sidney
Kellogg
Polson
Choteau
Fort Benton
Great Falls
Jordan
Glendive
Beach
Lewistown
Missoula
Canyon Ferry Lake
White Sulphur Springs
Helena
Orofino
Harlowton
Roundup
Miles City
Baker
Bowman
Hamilton
Anaconda
Butte
Absarokee
Yellowstone River
Grangeville
Laurel
Billings
Hardin
Buffalo
Bozeman
Livingston
Big Horn Lake
Broadus
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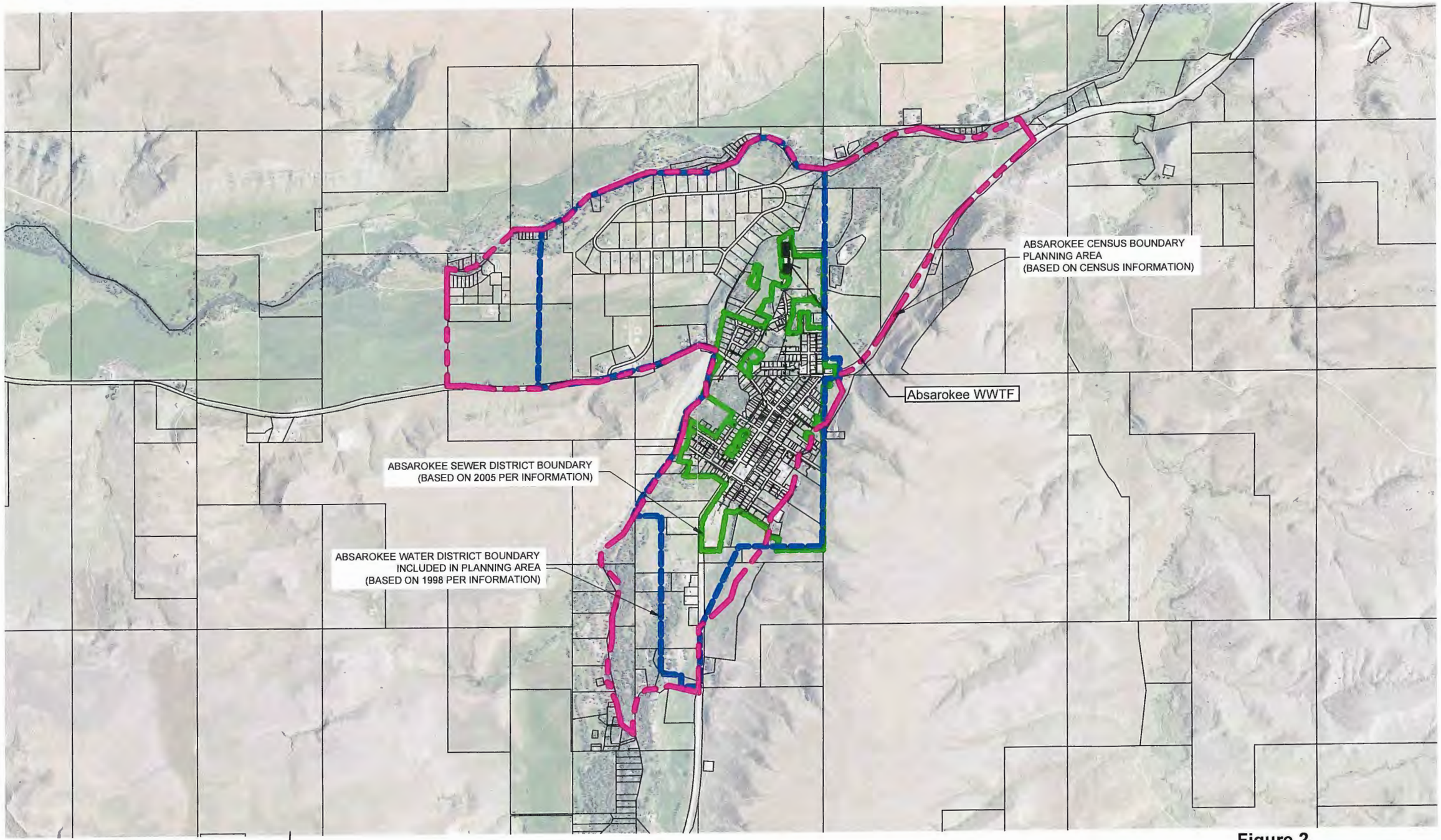
0
40 mi
Red Lodge
Dillon
McCall
YELLOWSTONE NATIONAL PARK
Sheridan
Belle Fourche
Lovell
Sundance
Spearfish
West Yellowstone
Cody
Cascade
Challis
Buffalo
Gillette
Lead
Yellowstone Lake
Newcastle

FIGURE 1



NORTH

0 1000 2000
SCALE IN FEET

NOTE:
BOUNDARY LINES ARE SCHEMATIC AND
ARE NOT BASED ON ACTUAL SURVEY DATA

Figure 2
Planning Area - Absarokee Census, Water District, and Sewer District Boundaries
STILLWATER COUNTY - ABSAROKEE, MONTANA
2016 PRELIMINARY ENGINEERING REPORT

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F:\1-14195-Stillwater Co WW\CADD 1-14195\Exhibits\1-14195-Absarokee Census, Water, Sewer Boundary Exhibit.dwg

NORTH

INFLUENT

EXISTING HEADWORKS SCREEN TO REMAIN

FINE BUBBLE AIR DIFFUSER SUSPENDED FROM FLOATING LARERAL NEAR CELL BOTTOM

HDPE FLOATING AIR DISTRIBUTION LATERAL

MBBR

CELL #1 PARTIAL MIX

CELL #2A SETTLING

CELL #2B SETTLING

NITRIFICATION REACTOR

SUBMERSIBLE LIFT STATION

IMPERMEABLE GEOMEMBRANE FLOW DIVERSION CURTAIN (TYPICAL OF 2).

INDIVIDUAL LATERAL CONTROL VALVE

BURIED HDPE AIR MAIN HEADER TYP.

PROPOSED BLOWER BUILDING

UV BUILDING

DISCHARGE

0 30 60
SCALE IN FEET

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FIGURE 3
TREATMENT LAYOUT

STILLWATER COUNTY - ABSAROKEE, MONTANA
WASTEWATER SYSTEM IMPROVEMENTS

F:\1-14195-Stillwater Co WW\CADD 1-14195\Exhibits\1-14195-AbsarokeeProposed Site Layout.dwg

GATES PROPERTY

COLUMBUS

INTERSTATE 90

STILLWATER RIVER

YELLOWSTONE RIVER

GUTHRIE PROPERTY

POTENTIAL HAUL ROUTE TO GATES PROPERTY APPROX. 16.4 MILES

HIGHWAY 78

WASTEWATER TREATMENT SITE

POTENTIAL HAUL ROUTE TO GUTHRIE PROPERTY APPROX. 3.5 MILES

POTENTIAL HAUL ROUTE TO MILLER PROPERTY APPROX. 2 MILES

ABSAROKEE

MILLER PROPERTY

NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING FINAL SITE AND COORDINATING SLUDGE DISPOSAL PLAN WITH LANDOWNER.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING FINAL HAUL ROUTES.

LEGEND

—POTENTIAL LAND APPLICATION SITES

0 3750 7500
SCALE IN FEET

NORTH

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FIGURE 4
POTENTIAL LAND APPLICATION SITES

STILLWATER COUNTY - ABSAROKEE, MONTANA
WASTEWATER SYSTEM IMPROVEMENTS

F:\1-14195-Stillwater Co WW\CADD 1-14195\Exhibits\1-14195-Figure 3-2-Potential Land Application Sites.dwg