DEQ
Montana Department
of Environmental Quality

June 30, 2016

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	Cut Bank Wastewater Treatment System Improvements
Location	Cut Bank, Montana
Project Number	WPCSRF Project # C301270
Total Cost	$16,070,000

The City of Cut Bank's wastewater discharge permit was renewed in 2012 and contains new effluent limits for total nitrogen, total phosphorous, ammonia, and *E. coli* (bacteria). Of particular concern is the ammonia limit of 1 mg/L that went into effect on March 1, 2016. Data collected in prior years indicated that the existing treatment system will have difficulty meeting the new ammonia limit. In addition, the lagoons are beyond their useful life, are believed to be leaking excessively, and have had embankment stabilization issues. Based on these new discharge permit effluent limits and the aging infrastructure, the city has determined the need to construct a new wastewater treatment facility in order to achieve compliance.

The city will construct a new mechanical treatment plant on city-owned property west and adjacent to existing lagoon cell 1. The new treatment facility will consist of a headworks screening facility, biological treatment basins, secondary clarifiers, a solids storage and dewatering facility, and an ultra-violet (UV) disinfection system. Once the new facility is operational, the wastewater treatment lagoons will be decommissioned and the site reclaimed. The proposed mechanical treatment facility will be a more efficient and flexible treatment process that will improve the quality of water discharged to Old Maids Coulee. The new facility should prevent permit violations by providing adequate secondary treatment, ammonia removal, and disinfection and will have additional capacity to accommodate growth. The city also proposes to repair approximately 1,060 feet of sewer main pipe at two locations to prevent freezing (and plugging) of the pipe and to fix some structurally deficient pipe. Depending on the depth of soil excavation associated with the sewer main rehabilitation, contaminated soils and/or groundwater may be encountered and will need to be handled in accordance with the Montana Department of Environmental Quality approved work plan.

Federal and State grant/loan programs will fund the project. Environmentally sensitive characteristics such as wetlands, floodplains, historical sites, and threatened or endangered species are not expected to be adversely impacted as a result of the proposed project. 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://deq.mt.gov/Public/ea) and at the following locations:

Mike Abrahamson, P.E.
Department of Environmental Quality
1520 East Sixth Avenue
P.O. Box 200901
Helena, MT 59620-09011
mabrahamson@mt.gov

Dan Raemaeker, Mayor
City of Cut Bank
221 W. Main Street
Cut Bank, MT 59427

Comments on the EA may be submitted to the Department of Environmental Quality at the above address. After evaluating substantive 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,

Todd Teegarden

Todd Teegarden, Bureau Chief
Technical and Financial Assistance Bureau

CITY OF CUT BANK

WASTEWATER SYSTEM IMPROVEMENTS

ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant:	City of Cut Bank
Address:	221 W Main Street Cut Bank, MT 59427
Project Number:	C301270

B. CONTACT PERSON

Name:	Dan Raemaeker, Mayor
Address:	221 W Main Street Cut Bank, MT 59427
Telephone:	(406) 873-5526

C. ABSTRACT

The City of Cut Bank currently utilizes a two-cell "accelerated" facultative lagoon to provide wastewater treatment. Treated effluent is discharged to the Old Maids Coulee which drains to Cut Bank Creek. The city's wastewater discharge permit was renewed in 2012 and contains new effluent limits for total nitrogen, total phosphorous, ammonia, and *E. coli* (bacteria). Of particular concern is the ammonia limit of 1 mg/L that went into effect on March 1, 2016. Data collected in prior permit cycles indicated that the existing treatment system will have difficulty meeting the new ammonia limit, and therefore the Montana Department of Environmental Quality (MDEQ) included a compliance schedule in the facility's discharge permit requiring the city to evaluate technologies and options that can be implemented to achieve the new ammonia limit. In addition, the new permit also contains year-round *E. coli* limits, rather than just the seasonal limits contained in the previous permit. The current treatment system does not have disinfection capabilities necessary to reliably meet the limits of 126 organisms/100mL from April 1st to October 31st; and 630 organisms/100mL from November 1st to March 31st. The existing lagoons are also beyond their useful life, are believed to be leaking excessively, and have had embankment stabilization issues. Based on these new permit effluent limits and the aging

infrastructure, the city has determined the need to construct a new wastewater treatment facility in order to achieve compliance.

To meet the requirements of the MPDES compliance schedule and provide the necessary flexibility to address future regulatory changes the city will construct a new mechanical treatment plant on city-owned property west and adjacent to existing lagoon cell 1. The new treatment facility will consist of a headworks screening facility, biological basins (with anaerobic, anoxic, and aerobic zones for the removal of carbon, nitrogen, and phosphorous), secondary clarifiers, a solids storage and dewatering facility, and an ultra-violet (UV) disinfection system. Once the new facility is complete the existing lagoons will be drained and the accumulated sludge will be allowed to dry out for a period to not exceed two years prior to its final disposal. The existing lagoons will be reclaimed by flattening the embankments, placing topsoil, and seeding the disturbed area. The proposed mechanical treatment facility will be a more efficient and flexible treatment process that will improve the quality of water discharged to Old Maids Coulee. The new facility should prevent permit violations by providing adequate secondary treatment, ammonia removal, and disinfection and will have additional capacity to accommodate growth. The city also proposes to repair approximately 1,060 feet of sewer main pipe at two locations to prevent freezing (and plugging) of the pipe and to fix some structurally deficient pipe. Depending on the depth of soil excavation associated with the sewer main rehabilitation, contaminated soils and/or groundwater may be encountered and will need to be handled in accordance with the MDEQ approved work plan.

Federal and State grant/loan programs will fund the project. The improvements, including administration, engineering, and construction are estimated to cost approximately $16,070,000. It is anticipated that the project will be funded with a a $3,400,000 loan (2.50%; 20-year term) obtained from the Water Pollution Control State Revolving Fund (WPCSRF) loan program; a $1,472,000 grant and $9,998,000 loan (2.25%; 40-year term) from the USDA/Rural Development (RD) program; a $625,000 grant from the Treasure State Endowment Program (TSEP); a $125,000 grant from the Department of Natural Resources; and $450,000 from the City of Cut Bank reserve fund.

Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species and historical sites are not expected to be adversely impacted as a result 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 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, Technical and Financial Assistance 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 City's existing wastewater treatment system was constructed in 1958 (with upgrades in the '80s and '90s) and consists of a two-cell "accelerated" facultative lagoon system with intermittent discharge to Old Maids Coulee, a tributary to Cut Bank Creek. The facility's discharge permit was renewed in 2012, with new limits for total nitrogen, total phosphorous, ammonia and *E. coli.* Of particular concern is the ammonia limit of 1 mg/L that went into effect on March 1, 2016. Data collected in prior permit cycles indicates that the existing treatment system discharges on average 10 mg/L ammonia and would not meet the new ammonia limit. The Montana Department of Environmental Quality (MDEQ) included a compliance schedule in the facility's discharge permit requiring the city to evaluate technologies and options that can be implemented to achieve the new ammonia limit. The new permit also contains year-round *E. coli* limits rather than just seasonal. The current treatment system does not have disinfection capabilities to meet the limits of 126 organisms/100mL from April 1st to October 31st; and 630 organisms/100mL from November 1st to March 31st. The existing lagoons are also aging beyond their useful life, are believed to be leaking excessively, and have had embankment stabilization issues. Lastly, the Cut Bank area is experiencing a significant level of oil exploration and the city has potential for growth which, should it occur, the existing system will have trouble accommodating.

To address these issues and to provide capacity for future anticipated flows and loads, the city will install a new secondary treatment process designed for nutrient removal and a disinfection system.

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION

The PER considered several discharge alternatives (including total retention, groundwater discharge, spray irrigation, and relocating the discharge point from Old Maids Coulee to Cut Bank Creek) and treatment alternatives (including facultative lagoons, aerated lagoons, enhanced lagoon technologies with ammonia removal, activated sludge, and biological nutrient removal). Most of these alternatives were eliminated from further consideration due to cost, constructability issues, and/or their inability to fully meet current and future permit regulations.

The city proposes to make repairs to the collection system at two locations. The first location will utilize open-cut construction to replace approximately 500 lineal feet in the alley located between 1st Avenue Southwest, Central Avenue, 3rd Street Southeast, and 4th Street Southeast. The sewer main at this location is shallow, making it susceptible to

freezing and backups during the winter months. The second location will utilize cured-in-place-pipe (CIPP), along with open cut spot repairs, to rehabilitate approximately 560 lineal feet in the alley located between 6th Avenue Southeast, 7th Avenue Southeast, 1st Street Southeast, and 2nd Street Southeast. This sewer main at this location has sluggish flows associated with a few structural deficiencies.

A. TREATMENT ALTERNATIVES

Three alternatives for addressing Cut Bank's treatment system needs were evaluated. These include:

T-0. No Action
T-1. Aerated Treatment Lagoons with Storage and Irrigation
T-2. 3 Stage Biological Nutrient Removal Wastewater Treatment Plant

T-0. NO ACTION - The no-action alternative considered making no improvements to the existing wastewater treatment system. The degradation of surface water resources will continue and the city will not be able to meet the ammonia limit listed in the new discharge permit. Poor treatment will result in pathogens being discharged to surface water, representing a public health risk. The MDEQ and EPA will take enforcement action against the city if they fail to meet the ammonia compliance schedule included in the city's discharge permit, and/or continually violate their discharge permit limits. Therefore, the no-action alternative was not considered to be a viable option, and was not given further consideration.

T-1. AERATED TREATMENT LAGOONS WITH STORAGE AND IRRIGATION - This alternative consists of constructing a mechanically aerated lagoon system to provide biological treatment and spray irrigation of crops for the disposal of treated wastewater (an MPDES permit would not be required). The treatment system would consist of two aerated lagoons (4 million gallons total capacity) that would occupy approximately 5 acres of city-owned property just north of Nyhagen Road and immediately adjacent to the existing lagoons. The new lagoons would be 10 to 15 deep and would require that an influent lift station be constructed to pump wastewater from the collection system into the new lagoons. Aeration would be provided in the lagoons through the use of blowers and air diffusion equipment. The lagoons would be lined with a synthetic liner to prevent leakage. A small building would be constructed to house the blowers and controls for the aeration system. An effluent lift station and force main (25,000 linear feet) would be needed to pump treated wastewater from the treatment lagoons to a storage pond, which would be located at the proposed irrigation site and would occupy 36-acres (85 million gallon capacity). The storage pond would hold treated water when irrigation is not possible (approximately 7 to 8 months/year). Treated wastewater would be land applied at agronomic rates (100% nitrogen uptake) through use of a floating pump, irrigation force main, and a center

pivot (2,200 feet long). The irrigation site would require approximately 175 acres of grass-hay. A 200-foot buffer zone would be provided around the perimeter of the irrigation site, bringing the total acreage of the irrigation site up to 260 acres. Inclusion of a buffer zone means that disinfection of the wastewater would not be required. The city would need to purchase the land for irrigation, or enter into a long-term lease (20 years minimum) with the landowner of the irrigation site. Sludge would accumulate in the bottom of each treatment lagoon and would need to be removed periodically (typically every 15 to 20 years). The existing facultative lagoons will be abandoned and the site restored.

T-2. 3-STAGE BIOLOGICAL NUTRIENT REMOVAL (BNR) WASTEWATER TREATMENT PLANT - This alternative consists of constructing a 3-stage bioreactor and secondary clarifiers to provide biological treatment of the wastewater. A new headworks facility to remove rags, paper, and debris would be constructed to protect downstream processes and equipment. The headworks building would house a rotary drum screen, a manual bar screen for backup, a grit removal system, and a Parshall flume to measure and record influent flows. Two bioreactors would be constructed each consisting of three 20-foot deep concrete tanks. The bioreactors would contain anaerobic, anoxic, and aerobic zones for the biological removal of carbon, nitrogen, and phosphorous. Oxygen, to promote biological activity would be provided to the bioreactors through the use of blowers and fine bubble diffusers. The bioreactors would be housed in a masonry building to help retain heat during the winter months. A blower/control building would also be constructed on site, which in addition to the blowers, would house a laboratory, an office, a lavatory, and a locker room.

Ammonia will be removed from the wastewater through nitrification, which is a biological process where ammonia is converted to nitrate in the presence of oxygen. An anoxic zone (i.e., the absence of free oxygen) will enhance denitrification, which is a biological process where the nitrate produced from nitrification is converted to nitrogen gas which is released to the atmosphere. While adding the anoxic zone for denitrification will increase capital costs for tankage, it will lower operational costs by decreasing the amount of oxygen needed to treat the wastewater. A further benefit is that it would remove total nitrogen (organic, ammonia, and nitrate) from the wastewater. The anaerobic zone will allow for biological phosphorous reduction. The secondary clarifiers will allow solids to settle out of the wastewater prior to disinfection. Two concrete clarifiers (each 40-ft diameter) would be constructed and would include solids collection and wasting equipment consisting of sludge scraper systems and pumps for the removal of sludge. A portion of the sludge would be returned to the front of the bioreactors and the remainder would be wasted to the solids handling processes. The clarifiers would be covered to prevent freezing. The solids handling process will consist of two aerated sludge holding tanks (70,000 gallon capacity total) to store

the sludge until it can be dewatered. The sludge would be dewatered through use of two centrifuges and then taken to a landfill for final disposal. The sludge dewatering equipment and dewatering polymers would be housed in a building. A UV disinfection system would be installed to meet the *E. coli* limits in the discharge permit and would be housed in a masonry building. Treated effluent will pass through a Parshall flume to measure and record effluent flows. A new gravity outfall pipe will be installed from the UV building to Old Maid Coulee. The plant will occupy less than 3 acres. The existing facultative lagoons will be abandoned and the site restored.

B. COST COMPARISON - 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(s). An alternative with low initial capital cost may not be the most cost efficient project if high operation and maintenance costs occur over the life of the alternative. An interest rate of 6.0% (salvage value) and 3.25% (O&M cost) over the 20-year planning period was used in the analysis. Table 1 provides a summary of the present worth analysis of the feasible alternatives considered.

TABLE 1
ECONOMIC EVALUATION OF FEASIBLE ALTERNATIVES

Alternative Number (From Above)	Alternative	Capital Cost	Annual O&M	Salvage Value	Total Present Worth
T-1	Aerated Treatment Lagoons w/ Storage and Irrigation	$11,316,000	$172,800	$3,134,000	$12,850,800
T-2	3-Stage BNR Wastewater Treatment Plant	$12,308,450	$220,000	$2,638,450	$14,683,750

C. BASIS OF SELECTION OF PREFERRED ALTERNATIVE

Selection of the preferred alternative was based upon several criteria, both monetary and non-monetary. The ranking criteria considered are shown in Table 2. Each alternative was assigned a ranking score of 0 to 10 for each category with 0 being a negative impact and 10 representing the maximum benefit to the community. Each category was also weighted in relation to one another to give greater importance to those categories that are most important to the city. The ranking factors were then multiplied by the relative weight of importance assigned to each evaluation criteria. The weighted rank scores were then summed, resulting in a weighted rank total score, the greatest score indicating the highest ranking. As shown in the ranking criteria matrix, Alternative T-2 (3-Stage BNR Wastewater Treatment Plant) ranked the highest, primarily due to fewer environmental impacts (less land utilized and produces a high quality effluent) and system expandability (no additional land required for expansion). Even though it does not have the lowest present worth cost, based on the overall

score, Alternative T-2 was selected to provide advanced wastewater treatment for the City of Cut Bank.

TABLE 2
RANKING CRITERIA FOR TREATMENT ALTERNATIVES

Criteria	Criterion Weight	Alt T-1: Aerated Lagoon w/ Storage and Irrigation		Alt T-2: 3-Stage BNR Wastewater Treatment Plant	
		Score	Points	Score	Points
Technical Feasibility	8	10	80	10	80
Regulatory Changes/ Compliance	8	9	72	9	72
Life Cycle Cost	10	5.5	55	4.5	45
Environmental Impacts	8	8	64	9	72
Operational/Technical Requirements	10	8	80	7	70
System Expandability	10	7	70	9	90
Public Opinion	10	8	80	8	80
Weighted Total			**501**		**509**

The estimated administration, engineering, and construction cost for the recommended alternative (Alternative T-2) is $16,070,000. The city will fund the project through a $3,400,000 loan (2.50%; 20-year term) obtained from the Water Pollution Control State Revolving Fund (WPCSRF) loan program; a $1,472,000 grant and $9,998,000 loan (2.25%; 40-year term) from the USDA/Rural Development (RD) program; a $625,000 grant from the Treasure State Endowment Program (TSEP); a $125,000 grant from the Department of Natural Resources; and $450,000 from the City of Cut Bank reserve fund

The financial impact of this project on the system users is shown in Table 3. After the rate increases are imposed, the average residential user rates will increase from $23.89/month to approximately $63.10/month. Based on the EPA guidance for project affordability, the proposed project will result in a monthly cost per household that is 1.85% of the monthly median household income, and therefore, may impose a moderate economic hardship on some household incomes.

Table 3 PROJECT AFFORDABILITY	
Monthly user cost[1]	$63.10
Monthly median household income (mMHI)[2]	$3,416.33
User rate as a percentage of mMHI	1.85%

[1] E-mail correspondence with project engineer, June 2016
[2] Based on 2010 census data

IV. AFFECTED ENVIRONMENT

A. PLANNING AREA / MAPS

The City of Cut Bank is located within Glacier County along U.S. Highway 2 approximately 30 miles from the Canadian border and 50 miles east of Glacier National Park (see Figure 1). The planning area encompasses the City of Cut Bank as well as 50 residential lots north of the city limits. The planning area is shown on Figure 2. The location of the collection system improvements are shown on Figure 3. The proposed treatment system improvements include: construction of a headworks facility, two BNR trains (bioreactors), two secondary clarifiers, two sludge holding tanks, a solids processing facility, and a UV disinfection system (see Figure 4).

Construction is scheduled to begin in late fall 2016 and will take approximately one year to complete.

B. FLOW PROJECTIONS

Based on historic census data, the City of Cut Bank has experienced a population decrease each decade since the '60s. However, recent developments in oil speculation and well field development in north central Montana indicates that the potential for growth exists for the Cut Bank area. Therefore, for planning purposes, a conservative growth rate of 1% for the 20 year planning period was assumed. Using this growth rate, the population served by the Cut Bank wastewater treatment plant is estimated to be 3,754 by the year 2035. The current average day flow to the wastewater treatment facility is approximately 235,000 gallons per day (gpd). The proposed improvements will result in an average day design flow rate of 350,000 gpd.

The projected design population and design flows are shown in Table 4.

Table 4 PROJECTED POPULATION AND WASTEWATER FLOWS				
Year	**Population**	**Average Daily Flow**	**Peak Day Flow**	**Peak Hour Flow**
		(GPD)	**(GPD)**	**(GPM)**
2010	2,968[1]	235,000	472,000	619
2035	3,754[2]	350,000[3]	700,000[3]	812[3]

[1] Montana Department of Commerce 2010 census data (plus North Cut Bank Water & Sewer District; 99 people)
[2] Assumed 1.0% growth annually
[3] Estimated values

C. NATURAL FEATURES

The topography in the area transitions from the deep escarpment of Cut Bank Creek into farmland and rugged coulees as you move from west to east. Within the city, land use is predominantly residential with several commercial businesses located primarily along US Highway 2; while land outside the city limits is primarily agricultural with scattered residential homes. The Blackfoot Indian Reservation is located immediately to the west. Cut Bank Creek is the principal water course in the area and flows along the western edge of the city forming a barrier to significant development in that direction. Cut Bank Creek serves as the primary source of domestic water for the city. Northeast of the city limits is an area of residential development served by the Cut Bank North Glacier County water and Sewer District and is served by the city's wastewater treatment system. The geology in the area consists of glacial lake deposits with underlying bedrock layers consisting of shale and sandstone. Soils in the Cut Bank area consist of deposits of sandy loam (usually in stream terraces), clay loam, loam, clay, and silt loam. All of these soil groups are moderately to highly corrosive indicating a risk to uncoated steel corrosion and therefore protective measures will be needed for all buried metal piping, fittings, and components.

The City of Cut Bank wastewater treatment plant discharges to Old Maids Coulee. From the discharge point, Old Maids Coulee flows approximately 2 miles to Cut Bank Creek. Old Maids Coulee is classified as a B-1 water body. Waters classified as B-1 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 depths to groundwater vary across the planning area, but are generally shallower closer to Cut Bank Creek. Based on well log data, the depth to groundwater in the area where the proposed wastewater treatment facility is to be located is approximately 20 feet.

The climate in Cut Bank is characterized as semi-arid. Cut Bank's average high

temperature is 76°F, but can occasionally top 100°F during the summer months. The average low temperature is approximately 10°F, with periods of sub-zero temperatures at times during the winter months. The average annual precipitation rate is 11.28 inches per year with over half of that falling during the months of May, June, and July. The average evaporation rate in the area is approximately 37 inches per year.

V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. DIRECT AND INDIRECT ENVIRONMENTAL IMPACTS

1. Land Use/Prime Farmland – The proposed project will not impact prime farmland or land use in general. The new treatment facility will be constructed west of lagoon cell 1 on three acres of undeveloped land within the existing treatment system boundaries.

2. Floodplains – Old Maids Coulee is located just north of the existing lagoon site. Based on the FEMA floodplain map for the area, this drainage does have a narrow floodplain in the vicinity of the lagoon system. However, the new treatment facility will be located outside of the designated floodplain. The proposed outfall pipe will use the existing point of discharge into Old Maids Coulee and may require some work within the floodplain. Prior to construction, the Glacier County Floodplain Administrator will determine if a floodplain permit is required for this project. The Department of Natural Resources (floodplains) has been 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 – There are small wetland areas located approximately 700 to 800 feet east of the existing lagoon site and along Old Maids Coulee (but not in the area of the discharge pipe). There are no wetlands located at the proposed site of the new mechanical treatment plant. The Army Corps of Engineers have has been 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.

4. Cultural Resources – No impacts to cultural resources are anticipated. All construction activity will occur on previously disturbed ground at the existing wastewater treatment site. No structures will be impacted. The State Historical Preservation Office was contacted regarding the proposed improvements and their comments are summarized in *Section X* of this report.

5. Fish and Wildlife – Typical mammalian species found in the area include mule deer, whitetail deer, coyote, antelope, rabbit, skunk, various rodents, et al. Common bird species include sparrows, magpies, robins, geese, ducks, raptors, et al. The Montana Natural Heritage Program indicated that there are no species of special concern near the proposed project

site. The project will not affect any critical wildlife habitats, nor will any known endangered species be affected. The new treatment system will be located adjacent to lagoon cell 1 within the boundary of the existing treatment system. The improved water quality that will be discharged from the new treatment facility will likely be beneficial to fish, wildlife, and habitat resources in Old Maids Coulee and Cut Bank Creek. The US Fish and Wildlife Services and Montana Fish Wildlife and Parks were contacted regarding the proposed improvements and their comments are summarized in *Section X* of this report.

6. Water Quality – The proposed mechanical treatment facility is a more efficient and flexible treatment process that will improve the quality of water discharged to Old Maids Coulee. The proposed project should prevent water quality standards violations by providing adequate secondary treatment, ammonia removal and disinfection, as required in the current discharge permit.

   The existing wastewater treatment facility is designed to serve a population of 4,430 with a design flow of 0.643 MGD. Those numbers were used to establish the facility's baseline allocated non-degradation load limits (BOD and TSS) in the MPDES discharge permit. Any increase above these baseline allotments is subject to the provisions of Montana's Non-Degradation Policy 75-5-303, MCA, and would require the facility to provide a higher level of treatment for compliance. Recent discharge data has shown that the existing facility is currently discharging approximately 18% of the allotted BOD load and 13% of the allotted TSS load and therefore well within their allotted load allocation for those parameters.

   Old Maids Coulee is listed on the State's 2016 303(d) list of impaired water bodies. The beneficial uses impacted are agricultural, aquatic life and primary contact recreation with the probable causes being: ammonia, chloride, nitrate/nitrite, phosphorus, specific conductance, and total dissolved solids. Probable sources for some of these pollutants include crop production and municipal point source discharges. The total maximum daily load (TMDL) for Old Maids Coulee near the treatment facility has not yet been completed by MDEQ, and therefore specific limits, or loads, for pollutants have not been established associated with the TMDL. However, the proposed improvements are a major step towards meeting load limits when issued in future permits.

   Since Old Maids Coulee is listed as impaired for ammonia, nitrate/nitrite, and it is MDEQ policy to restrict the discharge of those nutrients to impaired waters by capping them at their existing discharge on a load basis until the TMDL is developed. Using effluent discharge data from the Cut Bank wastewater treatment system and instream water quality data collected during the previous permit cycle, MDEQ established load limits of 5.4 lbs/day for ammonia; 101.9 lbs/day for total nitrogen; and 31.6 lbs/day for total phosphorus.

The primary purpose of the proposed upgrades to the wastewater treatment facility is to further improve the quality of the effluent discharged to Old Maids Coulee. The city's new discharge permit contains an average monthly ammonia limit of 1.0 mg/L and a maximum daily ammonia limit of 2.0 mg/L (which went into effect on March 1, 2016). System performance modeling indicates that the new facility will be capable of meeting these limits, producing an effluent ammonia concentration <0.5 mg/L. Currently the Cut Bank WWTP discharges, on average, an ammonia concentration of 10 mg/L. Therefore, once the new facility is fully operational, the concentration of ammonia in the discharge will be reduced by 95% and will result in the in-stream water quality standards being met.

The proposed project may also improve groundwater quality in the area as well. While actual leakage of untreated wastewater from the existing lagoon has not been documented, it is suspected. The new facility will be constructed with water tight basins, thereby ensuring that there will be no impacts to groundwater.

Impacts to the nearby surface stream associated with storm water runoff during construction will have to be mitigated with appropriate best management practices and carefully maintained during construction.

The CIPP sewer main rehabilitation area overlies contaminated groundwater from activities associated with the Tank Hill Facility. Depending on the depth of soil excavation associated with the sewer main rehabilitation, contaminated soils and/or groundwater may be encountered. The Tank Hill Facility is under an order from the MDEQ and therefore, any work in this area (which may include removing soils to access utility lines) will require the submittal of a work plan and permission from MDEQ's Water Protection Bureau and Contaminated Site Cleanup Bureau before construction can proceed to ensure any contaminated soils or groundwater encountered will be handled appropriately.

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 new facility will produce some odors associated with the wastewater treatment process, but these will be reduced as much as possible through the use of aeration equipment and enclosing all treatment processes within buildings. The prevailing wind direction in the area also helps to minimize the influence of odors upon residents in the area.

8. Public Health - Public health will not be negatively affected by the proposed project. The proposed treatment facility improvements will reduce nutrients to Old Maids Coulee, ultimately resulting in better water quality downstream of the wastewater treatment plant discharge point. The proposed UV disinfection system will disinfect the treated effluent to a level safe for contact recreation in the receiving stream. Water-tight concrete tanks and improved wastewater treatment will reduce the potential to pollute ground and surface waters.

9. Energy – An increase in energy consumption will occur after the new treatment plant is constructed. Energy consumption will be minimized as much as possible through the use of energy efficient equipment (pumps, aeration equipment, lighting, etc.).

   The consumption of energy resources directly associated with construction of the recommended improvements is unavoidable, but will be a short-term commitment.

10. Noise - Short-term impacts from excessive noise levels may occur during the construction activities. The construction period will be limited to normal daytime hours to avoid early morning or late evening construction disturbances. All mechanical equipment will be housed in buildings and the treatment facility will be located in a relatively remote area so there should be no significant long-term impacts from noise.

11. Sludge Disposal – Once the new treatment facility is operational, water in the existing lagoon will be removed so the sludge can dry. The disposal of sludge from the existing lagoons will be through land application in accordance with EPA's 503 Regulations via the use of a Notice of Intent filed with the MDEQ. Once the sludge has dried (for a period to not exceed two years), the preferred method of disposal will be to land apply as much sludge within the footprint of the existing lagoon as possible to minimize disposal costs. Final testing of the dried sludge for nutrients and metals will determine how much sludge can disposed of in this manner, and how much will need to be hauled off-site for final disposal. The volume of sludge that can be applied on-site will be based on the agronomic uptake rate of the vegetation that will be planted and the soils at the site. The existing lagoon site will be reclaimed by flattening the embankments, placing topsoil, and seeding the disturbed area. The final sludge disposal plan (i.e., Notice of Intent) must be submitted to the MDEQ for review and approval at least 30 days prior to disposal.

    The new wastewater treatment facility will utilize sludge holding tanks (equipped with aerators for odor control) and two centrifuges to store, stabilize, and dewater the sludge. The dried sludge will need to pass the paint filter test (dryness) and the Toxicity Characteristics Leaching Procedure (TCLP) prior to disposal in an approved Class II landfill in accordance with EPA's 258 Regulations *Criteria for Municipal Solid*

Waste Landfills. The final "long-term" sludge disposal plan must be submitted to MDEQ for review and approval at least 90 days prior to disposal.

12. Environmental Justice – Environmental Justice Executive Order 12898: The proposed project will not result in disproportionately high or adverse human health or environmental effects on minority or low income populations. No disproportionate effects among any portion of the community would be expected. All users will pay a higher rate to help fund the improvements, but the city is working to secure grant monies to keep user rates as low as possible.

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 20-year design population is based on a growth rate of approximately 1.0 percent per year. The proposed improvements should be capable of serving a population of 3,754. The anticipated increase in population and development in the service area will result in increased flows to the WWTP. Improvements to the WWTP will be a positive feature for the community providing additional treatment capacity that will allow the city to manage its growth in a proactive manner and promote urbanization within its service area.

15. Cumulative Effects - The increased treatment capacity at the wastewater treatment plant 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 city, 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 system.

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 new mechanical treatment plant cannot be avoided.

VI. PUBLIC PARTICIPATION

Several meetings and coordination efforts occurred with city staff, including public works personnel, clerks, and the mayor in preparation of the PER. The wastewater project was addressed at many City Council meetings which were open to the public. A designated public hearing was held on April 19, 2012 to discuss the PER and again on April 18, 2016 to discuss the proposed sewer rate increase. The consulting engineer discussed the purpose and need for the project, the treatment system alternatives considered, associated costs, funding sources, and the impact to user rates. In addition, the city newspaper, the "Cut Bank Pioneer Press" provided comprehensive coverage of the project discussions held during the city council meetings. Residents expressed their concerns about the overall cost of the project, the impact the user rate will have on some homeowners, and if other alternatives could/should be considered. The city council accepted and approved (through Resolution No. 12-04) the findings and recommendations of the PER on April 26, 2012. The city council accepted and approved (through Resolution No. 16-08) a sewer rate increase to pay for the wastewater system improvements and its operation.

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 from leaving the construction site. 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 (if determined to be necessary) will be required from the DEQ Water Protection Bureau prior to the beginning of construction. 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 will impact surface water 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 Cut Bank Wastewater Treatment System 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. City of Cut Bank Wastewater System Improvements Preliminary Engineering Report Update, April 2014, prepared by Great West Engineering.
2. City of Cut Bank Preliminary Design Report, August 2014, prepared by Great West Engineering.
3. Environmental Report Wastewater System Improvements City of Cut Bank, January 2014, prepared by Great West Engineering.
4. Uniform Application Form for Montana Public Facility Projects, April 2014, prepared by City of Cut Bank.
5. City of Cut Bank Project Funding Sources/Project Budget/Meeting Minutes (4/18/16) (and General Correspondence), June 2016, submitted by Great West Engineering.

X. AGENCIES CONSULTED

The following agencies have been contacted in regard to the proposed construction of this project:

1. The U.S. Fish and Wildlife Service reviewed the proposed project and determined that the proposed project is unlikely to adversely affect threatened, endangered, or candidate species or critical habitat. They further stated that any treatment option that improves the quality of effluent discharged to waters in the State of Montana are likely to be beneficial to fish, wildlife, and habitat resources. Lastly they stated that bald and golden eagle nest territories have not been documented within one mile of the proposed project area. However, should occupied eagle nests occur within 0.5 miles of the proposed site, they recommend that the city comply with the recommended temporary seasonal and distance construction buffers stipulated in the *2010 Montana Bald Eagle Management Guidelines: An Addendum to Montana Bald Eagle Management Plan (1994)*.

2. The Montana Department of Natural Resources and Conservation (DNRC) reviewed the proposed project. They stated that it appears none of the project improvements would be located within a FEMA mapped floodplain and as long as the project lies outside any mapped floodplain the project will be in compliance with the Floodplain Management Protection Act of 1973, the NFIP, and EO 11988.

   The local Floodplain Administrator for Glacier County was notified of the proposed project but had not responded with any comments.

3. The Montana Historical Society's State Historic Preservation Office (SHPO) reviewed the proposed project. According to their records, there have been a few previously recorded sites, and a few cultural resource inventories done within the

designated search locales. SHPO stated that if any structure over 50 years old is to be altered, it is recommended that they be recorded and a determination of their eligibility for listing on the National Register of Historic Places be made. They indicated that based on previous ground disturbances in the proposed project area that there is a low likelihood cultural resources would be impacted. They indicated that a cultural resource inventory is unwarranted at this time, but should structures need to be altered or if cultural materials are inadvertently discovered during this project, their office must be contacted and the site investigated.

4. The U.S. Department of the Army Corps of Engineers (USCOE) reviewed the proposed project. The USCOE is responsible for administering Section 404 of the Clean Water Act, which regulates the excavation or placement of dredged or fill material below the ordinary high water mark of our nation's rivers, streams, lakes or in wetlands. The USCOE stated that most of the wastewater improvements are planned in areas that are not waters of the United States; and therefore a Corps of Engineers permit is not required. However, any work at the lagoon outlet that involves placement of dredged or fill material in Old Maids Coulee will need a permit. They further stated that it is unclear if wetlands are located at the project site. If wetlands of the U.S. will be affected by the project an on-the-ground wetland delineation will be required.

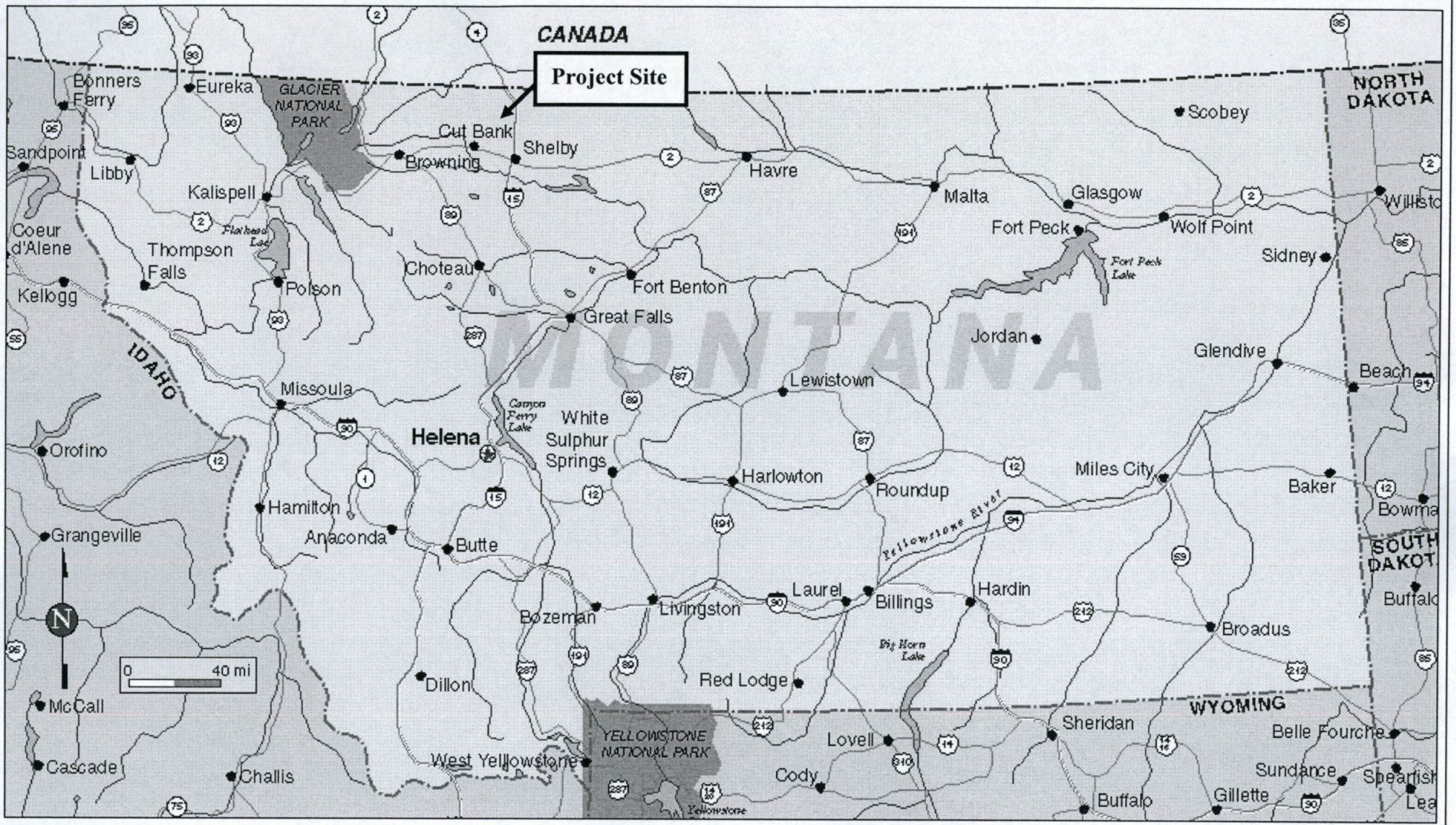
5. The Montana Department of Fish, Wildlife and Parks (FWP) reviewed the proposed project and stated that they had no concerns with the proposed project. They further stated that DEQ standards and monitoring of point source discharge criteria will assure aquatic resources are not harmed.

EA Prepared by:

Mike Abrahamson, P.E. — 6/27/16 Date

EA Reviewed by:

Jerry Paddock, P.E. — 6/27/16 Date



Montana Department of
ENVIRONMENTAL QUALITY

Figure 1. Site Location Map – Cut Bank, MT

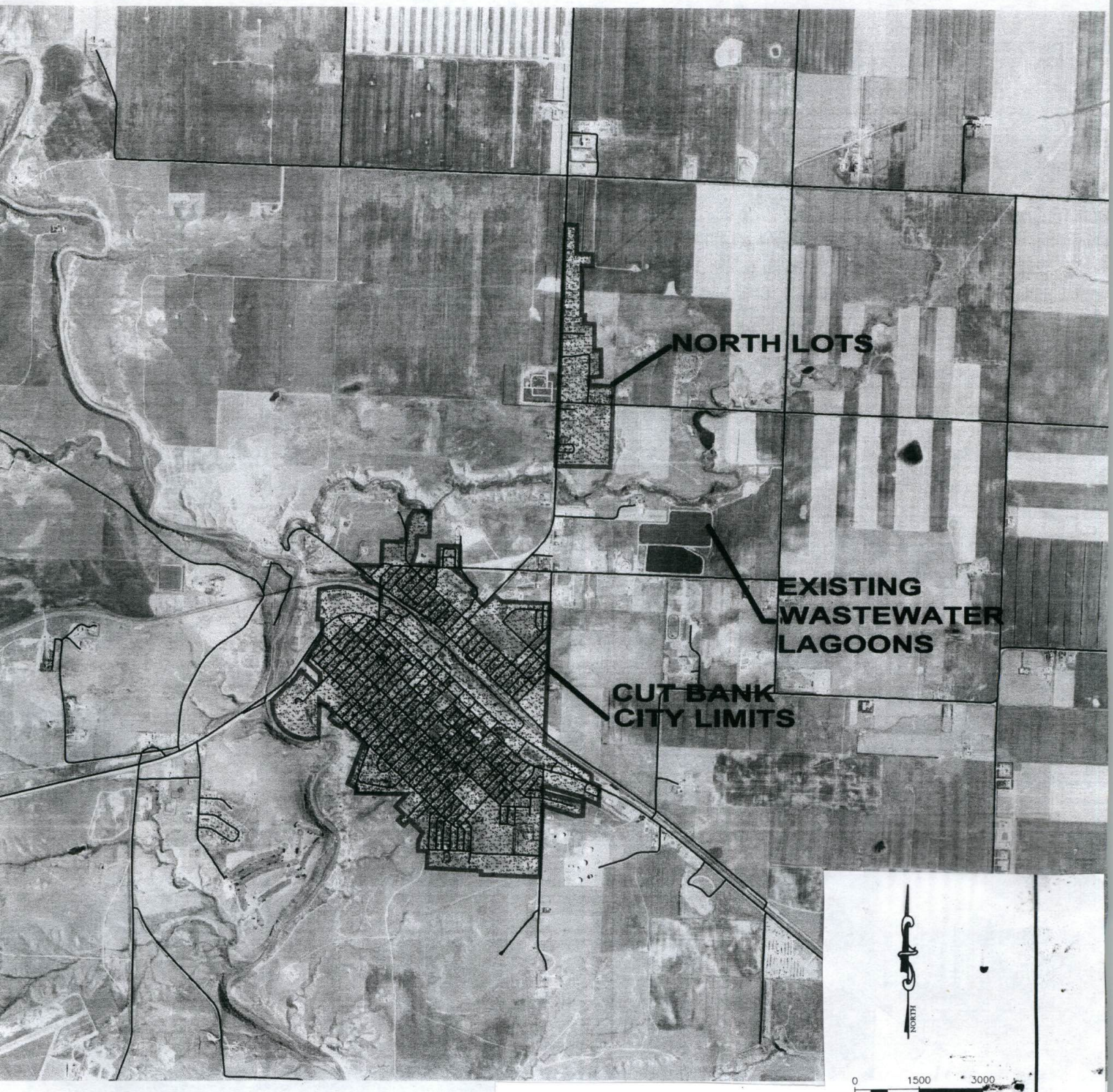
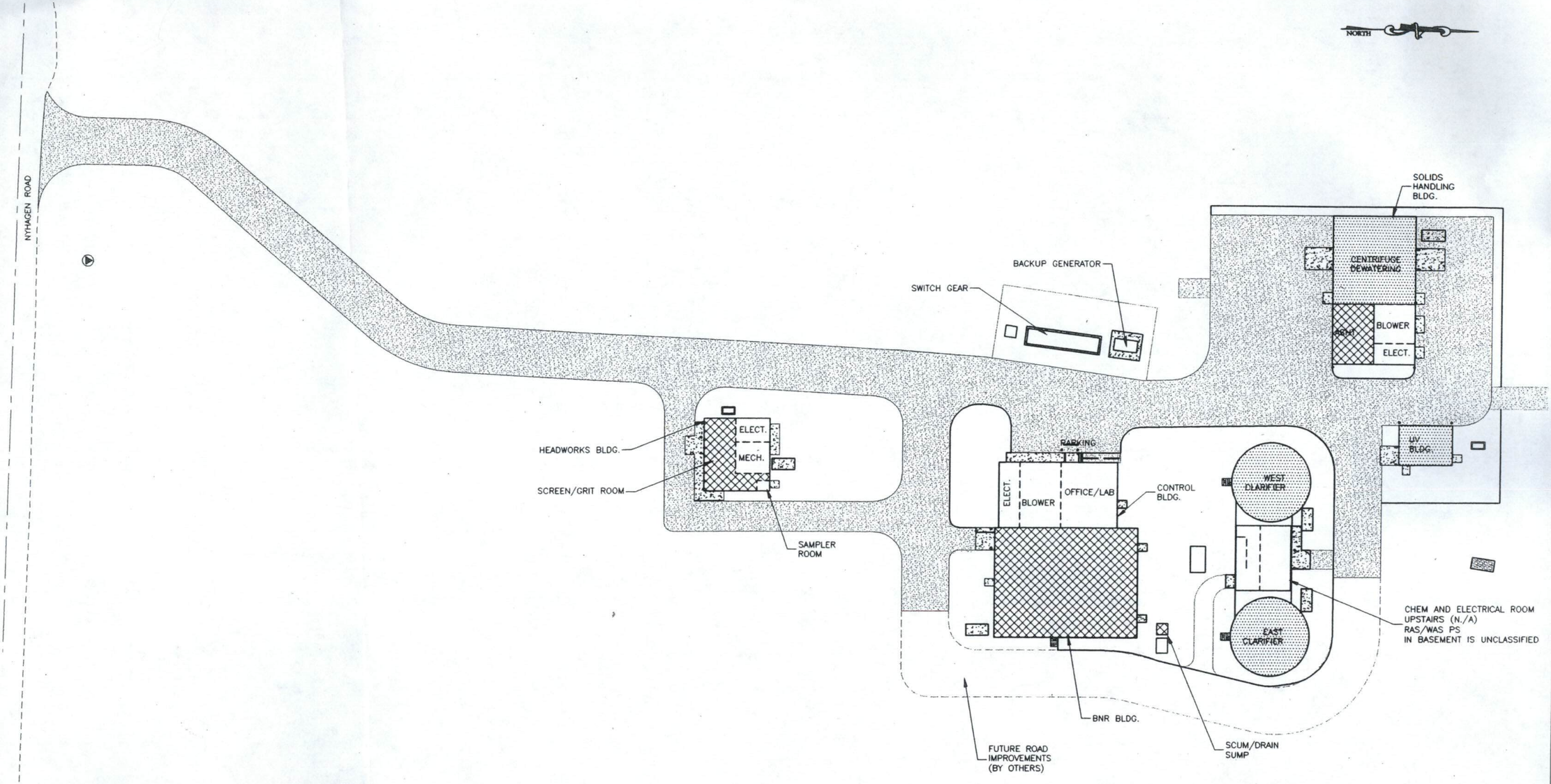


Figure 2
Project Planning Area

Figure 3
Collection System Improvements

CITY OF CUT BANK
WASTEWATER PRELIMINARY ENGINEERING REPORT

F:\1-13182 Cut Bank WW Treatment Plant (On-Call TO 12)\CADD 1-13182\Exhibits\2014 PER Figures\1-3182-Figure 7-1 Collection System Improvements.dwg



CITY OF CUT BANK

CUT BANK WASTEWATER TREATMENT PLANT

FIGURE 4