



Brian Schweitzer, Governor  
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • [www.deq.mt.gov](http://www.deq.mt.gov)

December 6, 2012

Randy Straus, P.E.  
City of Billings  
Department of Public Works  
2224 Montana Avenue  
Billings, Montana 59101

RE: Billings Five Mile Lift Station Project  
SRF Wastewater Project #C302236  
Billings, Montana

Randy:

Enclosed are copies of the Finding of No Significant Impact (FONSI) and of the Environmental Assessment (EA) for the City of Billings Five Mile Lift Station Replacement project. Please print the Finding of No Significant Impact in at least one publication of your local newspaper under legal advertising and return a copy of the proof of advertisement to this office. You do not have to print this letter or the EA.

We recommend that you advertise this as soon as possible and allow for a 30-day comment period. Please have the FONSI, EA and Preliminary Environmental Report (PER) available to the public at your office during the comment period. We have distributed the Notice to the enclosed list of agencies.

If you have any questions, please do not hesitate to contact me at (406) 444-5323.

Sincerely,

Jerry Paddock, P.E.  
Environmental Engineer  
Technical and Financial Assistance Bureau  
Phone: (406) 444-5323 Fax: (406) 444-6836

Encl: Agency List

cc: Casey Hanson, P.E., Morrison-Maierle, Inc., Billings w/enclosure

DAMON MURDO  
MT HISTORICAL SOCIETY  
HISTORIC PRESERVATION  
PO BOX 201201  
HELENA MT 59620-1201

DARLENE EDGE  
DIRECTOR  
RESOURCE ASSESSMENT  
FW & P  
PO BOX 200701  
HELENA MT 59620-0701

MARY SEXTON  
DIRECTOR  
DNRC  
PO BOX 201601  
HELENA MT 59620-1601

ENVIRONMENTAL QUALITY COUNCIL  
STATE CAPITOL RM #106  
PO BOX 201701  
HELENA MT 59620-1701

BRENT ESMOIL  
US FISH & WILDLIFE SERVICE  
100 NO PARK STE 320  
HELENA MT 59601

TODD TILLINGER  
US ARMY CORPS OF ENGINEERS  
10 W 15  
HELENA MT 59626

JEAN RILEY  
MT DEPT OF TRANSPORTATION  
PLANNING  
1960 PROSPECT  
HELENA MT 59620

CHARYL FRANCOIS  
US ARMY CORPS OF ENGINEERS  
PO BOX 3755  
SEATTLE WA 98124-3755

MASON SEYLER  
MT DEQ  
REMEDATION DIVISION  
100 N LAST CHANCE GULCH  
HELENA MT 59620-0901

LAURA A BENTLEY PE  
PROJECT MANAGER  
ARMY CORPS OF ENGINEERS  
106 SOUTH 15TH STREET  
OMAHA, NEBRASKA 68102-1618

▲ CORE LIST

▼ OPTIONAL LIST

ADMINISTRATOR  
R & P DIVISION  
FW & P  
PO BOX 200701  
HELENA MT 59620-0701

STATE CONSERVATIONIST  
US SOIL CONSERVATION  
FEDERAL BLDG RM #443  
10 E BABCOCK  
BOZEMAN MT 59715

STATE DIRECTOR  
RURAL DEVELOPMENT  
PO BOX 850  
BOZEMAN MT 59715

DIRECTOR  
MT FIELD OFFICE - HUD  
1 W 6<sup>th</sup> AVE  
HELENA MT 59601

ENVIR PROJECT REV  
US DEPT OF INTERIOR  
OFFICE OF THE SECT  
WASHINGTON DC 20240

MUNICIPAL SYSTEMS UNIT  
8P-W-MS  
US EPA REGION VIII  
1595 WYNKOOP ST  
DENVER CO 80202-1129

ENVIR REVIEW OFFICER  
US DEPT OF INTERIOR  
DENVER FEDERAL CENTER  
PO BOX 25007  
DENVER CO 80225-0007

MDT  
NANCY EDWARDS  
UTILITY AGENT  
PO BOX 7039  
MISSOULA MT 59807

DAVID S STELLING  
FAA  
FAA BUILDING STE #2  
2725 SKYWAY DR  
HELENA MT 59601

ECOLOGICAL SERVICES  
185 SHEPHARD WAY  
HELENA MT 59601-9785

REGIONAL DIRECTOR  
US BUREAU RECLAMATION  
FEDERAL BLDG  
PO BOX 36900  
BILLINGS MT 59103-6900

OFFICE OF THE GOVERNOR  
STATE CAPITAL RM 204  
PO BOX 201701  
HELENA MT 59620-1701

BUREAU OF LAND MGMT  
BILLINGS FIELD OFFICE  
1001 SOUTHGATE DRIVE  
BILLINGS MT 59101

ECOLOGICAL SERVICES  
US FISH & WILDLIFE SERV  
BILLINGS SUBOFFICE  
2900 4TH AVE N RM #301  
BILLINGS MT 59107

DIRECTOR  
MRAN  
304 N 18<sup>th</sup> AVE  
BOZEMAN MT 59715-3114

COMM DEVELOPMENT BUREAU LOCAL  
GOVT ASST DIV  
DEPT OF COMMERCE  
PO BOX 200523  
HELENA MT 59620-0523

GALLATIN AIRPORT AUTHORITY  
GALLATIN FIELD AIRPORT  
BELGRADE MT 59714

FONSI&EA\_DistributionList.doc



December 6, 2012

## 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	Five Mile Lift Station Project
Location	Billings, Montana
Project Number	C302236
Total Cost	\$3,515,000

The City of Billings Fiscal Year 2012 - 2016 Capital Improvement Program (FY12 CIP) and the October 2012 Preliminary Engineering Report (PER) for the Five Mile Lift Station Project, prepared by Morrison Maierle, Inc., have identified the need to replace the Five Mile lift station located in the Billings Heights area. The existing lift station is so badly deteriorated from hydrogen sulfide gases that rehabilitation of the existing wet well is not possible. Due to substantial corrosion of the wet well concrete, the structural integrity of the concrete may be compromised, which poses a safety threat to city staff working inside the wet well. Also, the corrosion is so significant that cracks in the concrete are allowing a significant amount of groundwater to infiltrate the walls of the wet well, which is reducing the pumping capacity of wastewater and increasing the operations costs. Moreover, the lift station does not have adequate emergency storage when the lift station goes offline to allow adequate time for public works staff to respond which could allow the wet well to overflow to Five Mile Creek. The valve vault and electrical equipment at the lift station are also in very poor condition and no longer serviceable. The lift station pumps to two 12" diameter forcemains which convey wastewater to the city's gravity wastewater system. Each forcemain is approximately 8,790 feet long and crosses under Five Mile Creek approximately 1,400 feet from the existing lift station. The forcemain pipe is PVC pipe except directly under Five Mile Creek, where it is ductile iron pipe. Direct inspections, such as video cameras, are not possible in forcemains, but corrosion of the ductile iron pipe is a concern because one of the forcemain pipes under Five Mile Creek had to be repaired due to a corrosion issue in 2001. The other ductile iron forcemain pipe is most likely corroded and should be replaced.

Based on the above reasons, the lift station should be replaced and the city also decided to relocate the lift station. Several locations were evaluated, including constructing a new lift station at the existing site, but a site about 1,000 feet west of the existing lift station was determined to be the best location. This site is on City of Billings (Parks and Recreation Department) property, which would not require the purchase of land, but the primary advantage of relocating the lift station was to distance the lift station from home owners to prevent odor complaints. The new lift station will have additional pumping and storage capacity to meet future demands and it will reduce the overall maintenance requirements, improve the maintenance

staff's safety while working in the wet well, and increase system reliability. However, relocating the new lift station will require installing new piping and an access road to service the lift station. The proposed lift station will include a control building, dry well, valve vault, and emergency (backup) generator and require construction of approximately 1,180 feet of new 24" diameter gravity sewer main to convey sewage from the existing lift station location to the proposed lift station and the construction of two approximately 400-foot long, 12" diameter forcemains to convey sewage from the proposed lift station to the existing forcemains. Construction of the new forcemain will require a new crossing of Five Mile Creek to place two active pipes and a forcemain pipe for future use. The two existing forcemains under Five Mile Creek will be replaced and an additional pipe will also be installed for future use. A total of about 1,100 feet of forcemain will be installed as part of this project. At both creek crossings the pipe will be installed using open cut trenching. Any water flowing in the creek will be pumped around the construction area. The existing lift station will be demolished and all unused underground piping would be abandoned.

A total of \$4.45 million has been included in the FY12 CIP budget for the lift station project. The estimated cost for the proposed improvements, including administration, engineering and construction, is \$3,515,000 and is anticipated to be funded through a low interest loan from the Montana Water Pollution Control State Revolving Fund.

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.

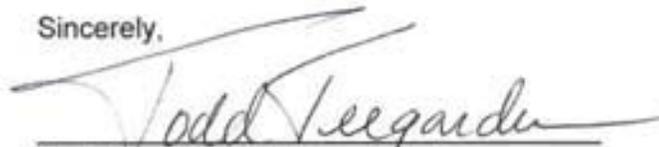
An environmental assessment (EA), which describes the project and analyzes the impacts in more detail, is available for public scrutiny on the DEQ web site (<http://www.deq.mt.gov/ea.mcp>) and at the following locations:

Department of Environmental Quality  
1520 East Sixth Avenue  
P.O. Box 200901  
Helena, MT 59620-09011  
[jpaddock@mt.gov](mailto:jpaddock@mt.gov)

City of Billings  
Public Works Department/Engineering Division  
2224 Montana Avenue  
Billings, MT 59101

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, Bureau Chief  
Technical and Financial Assistance Bureau

BILLINGS FIVE MILE LIFT STATION PROJECT  
ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant: City of Billings  
Address: Public Works Department/Engineering Division  
2224 Montana Avenue  
Billings, MT 59101  
Project Number: WPCSRF C302236

B. CONTACT PERSON

Name: Randy Straus P.E.  
Address: Public Works Department/Engineering Division  
2224 Montana Avenue  
Billings, MT 59101  
Telephone: (406) 657-8801

C. ABSTRACT

The City of Billings Fiscal Year 2012 - 2016 Capital Improvement Program (FY12 CIP) and the October 2012 Preliminary Engineering Report (PER) for the Five Mile Lift Station Project, prepared by Morrison Maierle, Inc., have identified the need to replace the Five Mile lift station located in the Billings Heights area. The existing lift station is so badly deteriorated from hydrogen sulfide gases that rehabilitation of the existing wet well is not possible. Due to substantial corrosion of the wet well concrete, the structural integrity of the concrete may be compromised, which poses a safety threat to city staff working inside the wet well. Also, the corrosion is so significant that cracks in the concrete are allowing a significant amount of groundwater to infiltrate the walls of the wet well, which is reducing the pumping capacity of wastewater and increasing the operations costs. Moreover, the lift station does not have adequate emergency storage when the lift station goes offline to allow adequate time for public works staff to respond which could allow the wet well to overflow to Five Mile Creek. The valve vault and electrical equipment at the lift station are also in very poor condition and no longer serviceable. The lift station pumps to two 12" diameter forcemains which convey wastewater to the city's gravity wastewater system. Each forcemain is approximately 8,790 feet long and crosses under Five Mile Creek approximately 1,400 feet from the existing lift station. The forcemain pipe is PVC pipe except directly under Five Mile Creek, where it is ductile iron pipe. Direct inspections, such as video cameras, are not possible in forcemains, but corrosion of the ductile iron pipe is a concern because one of the forcemain pipes under Five Mile Creek had to be repaired due to a corrosion issue in 2001. The other ductile iron forcemain pipe is most likely corroded and should

be replaced.

Based on the above reasons, the lift station should be replaced and the city also decided to relocate the lift station. Several locations were evaluated, including constructing a new lift station at the existing site, but a site about 1,000 feet west of the existing lift station was determined to be the best location. This site is on City of Billings (Parks and Recreation Department) property, which would not require the purchase of land, but the primary advantage of relocating the lift station was to distance the lift station from home owners to prevent odor complaints. The new lift station will have additional pumping and storage capacity to meet future demands and it will reduce the overall maintenance requirements, improve the maintenance staff's safety while working in the wet well, and increase system reliability. However, relocating the new lift station will require installing new piping and an access road to service the lift station. The proposed lift station will include a control building, dry well, valve vault, and emergency (backup) generator and require construction of approximately 1,180 feet of new 24" diameter gravity sewer main to convey sewage from the existing lift station location to the proposed lift station and the construction of two approximately 400-foot long, 12" diameter forcemains to convey sewage from the proposed lift station to the existing forcemains. Construction of the new forcemain will require a new crossing of Five Mile Creek to place two active pipes and a forcemain pipe for future use. The two existing forcemains under Five Mile Creek will be replaced and an additional pipe will also be installed for future use. A total of about 1,100 feet of forcemain will be installed as part of this project. At both creek crossings the pipe will be installed using open cut trenching. Any water flowing in the creek will be pumped around the construction area. The existing lift station will be demolished and all unused underground piping would be abandoned.

The estimated cost for the proposed improvements, including administration, engineering and construction, is \$3,515,000 and is anticipated to be funded through a low interest loan (3%) from the Montana Water Pollution Control State Revolving 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 projects. Additional environmental impacts related to land use, water quality, air quality, public health, energy, noise, and growth 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 & Financial Assistance Bureau, has prepared this Environmental Assessment (EA) to satisfy the requirements of the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA).

D. COMMENT PERIOD

Thirty (30) calendar days

## II. PURPOSE OF AND NEED FOR ACTION

The Billing's Fiscal Year 2012 - 2016 Capital Improvement Program (FY12 CIP) and the October 2012 Preliminary Engineering Report (PER) for the Five Mile Lift Station Project, prepared by Morrison Maierle, Inc. City have identified the need to replace the Five Mile Lift Station located in the Billings Heights area. The existing lift station is so badly deteriorated from hydrogen sulfide gases that rehabilitation of the existing wet well is not possible. Due to substantial corrosion of the wet well concrete, the structural integrity of the concrete may be compromised, which poses a safety threat to city staff working inside the wet well. Also, the corrosion is so significant that cracks in the concrete are allowing a significant amount of groundwater to infiltrate the walls of the wet well, which is reducing the pumping capacity of wastewater and increasing the operations costs. Moreover, the lift station does not have adequate emergency storage when the lift station goes offline to allow adequate response time for public works staff to respond. The valve vault and electrical equipment at the lift station are also in very poor condition and no longer serviceable. The lift station pumps to two 12" diameter forcemains which convey wastewater to the city's gravity wastewater system. Each forcemain is approximately 8,790 feet long and crosses under Five Mile Creek approximately 1,400 feet from the existing lift station. The forcemain is PVC pipe, except directly under Five Mile Creek, where it is ductile iron pipe. Direct inspections, such as video cameras, are not possible in forcemains, but corrosion of ductile iron pipe is a concern because one of the forcemain pipes had to be repaired due to a corrosion issue in 2001. The other ductile iron forcemain is most likely corroded and the PER recommends that both forcemains be replaced with new PVC pipe where they pass under Five Mile Creek as part of the proposed lift station replacement project.

## III. ALTERNATIVES INCLUDING THE PROPOSED ACTION AND COSTS

- A. Three alternatives for replacement or rehabilitation of the existing Five Mile Lift Station were evaluated in the PER. Alternative 1 included the no-action alternative, Alternative 2 evaluated the rehabilitation of the existing lift station, and Alternative 3 evaluated constructing a new lift station at a new location. Five different sites, all within about 1,500 feet of the existing lift station were evaluated. Four of the five sites evaluated in Alternative 3 would require the continued use of the existing forcemains that cross under Five Mile Creek and therefore these evaluations included the impacts and costs to replace these forcemains.

The three alternatives evaluated included:

Alternative 1 No Action – If no action is taken to upgrade or replace the existing lift station, the hydrogen sulfide (H<sub>2</sub>S) gases would continue to deteriorate the lift station, making it completely inoperable. Nearly all the electrical equipment is no longer serviceable and functional. Due to the corrosion of the concrete, safety for city staff while in the wet well is a great concern. Moreover, the existing lift station is undersized for future flows and does not provide adequate emergency storage when the lift station goes offline. Corrosion of the concrete walls from H<sub>2</sub>S gas is allowing significant infiltration of groundwater into the wet well. The groundwater infiltration increases the overall volume of water that the lift station must pump to the wastewater treatment facility and not only increases operations costs, but which also decreases the capacity of the treatment facility to treat actual wastewater. Based on these concerns, the no-

action alternative was not considered to be a viable option.

Alternative 2 Rehabilitate Existing Lift Station – Nearly all the electrical equipment (pump controls and lighting) is no longer serviceable and functional, and the operation of the control valves is difficult. Rehabilitation of the existing lift station would require replacement of all lift station equipment, including pumps, control system (electrical), valves, piping, and emergency generator. The concrete of the wet well is highly corroded from H<sub>2</sub>S gases and is in poor structural shape. Due to possible cracks in the walls and joints of the wet well from H<sub>2</sub>S gas, the concrete structure is allowing significant infiltration of groundwater. Because of these issues, it was determined that the wet well structure cannot be rehabilitated. Moreover, depending on current incoming flow rates, the storage volume of the wet well does not provide adequate response time for public works staff to reach the lift station from the city shop when the lift station has maintenance problems. The storage volume in the wet well is undersized for future inflow rates and therefore a larger wet well would be needed to handle future additional flow or to provide emergency storage capacity. Based on the need to essentially replace every component of the existing lift station, along with constructability issues and the undersized wet well, this alternative was not considered to be a viable option.

Alternative 3 Build New Lift Station at New Location – Five locations within approximately 1,500 feet of the existing lift station were evaluated in the PER to site the new Five Mile lift station. With the exception of the deeper wet well that would be required for Site 3, the basic proposed lift station equipment such as the storage and pump capacity, pump/valve control system, control building, valve assemblies, and backup generator were all about the same at all five locations. The five locations considered included a site adjacent to the existing lift station and four locations west of the existing lift station (see Figure 3). The installation of dual forcemains is included where new forcemain piping is proposed (including a future forcemain pipe for future capacity at both creek crossings). The most significant advantages and disadvantages of each location are summarized in Table 1.

TABLE 1 – ALTERNATIVE LOCATIONS SUMMARY

Site Number	Advantages	Disadvantages
1	Short access road with no creek crossing, site is outside 100-year floodplain, minimizes new gravity sewer main construction	Land purchase required, odor control required now, requires approx. 1,300 feet of future forcemain, requires rehabilitation of existing forcemains under Five Mile Creek.
2	Site is outside 100-year floodplain, less potential for odor issues in adjacent subdivision, approx. 1,300 feet of future forcemain not required	Land purchase required, requires long access road including new Five Mile Creek crossing, requires approx. 1,250 feet of new 24" gravity sewer main construction, requires rehabilitation of existing forcemains under Five Mile Creek.
2A	Site is located on City ROW (old railroad bed), site is outside 100-year floodplain, less potential for odor issues in adjacent subdivision, approximately 1,300	Requires long access road including new Five Mile Creek crossing, requires approx. 1,300 feet of new 24" gravity sewer main, requires significant earthwork because of high railroad grade (will impact wetlands and

	feet of future forcemain not required	require wetland mitigation and significant environmental work), requires rehabilitation of existing forcemains under Five Mile Creek.
3	Site is outside 100-year floodplain, existing forcemains under Five Mile Creek would not require rehabilitation, less potential for odor issues in adjacent subdivision, approx. 1,300 feet of future forcemain not required	Land purchase required, requires longest access road including new Five Mile Creek crossing, requires approx. 2,050 feet of new 24" gravity sewer main, potential for odor control required soon, site will require the deepest wet well (approx. 40' deep).
4	Site is outside 100-year floodplain, site is located on City Parks and Recreation property, less potential for odor issues in adjacent subdivision, Five Mile Creek crossing not required for new access road, approx. 975 feet of future forcemain not required	Requires long access road (but shorter than Sites 2, 2A and 3), requires approx. 1,200 feet of new 24" gravity new sewer main, requires approx. 1,100 feet of new 12" forcemain including new Five Mile Creek crossing, requires rehabilitation of existing forcemains under Five Mile Creek.

Significant site work that would be included to construct the lift station / control building at the Site 4 location include:

- Replace the two active forcemains and install a new forcemain for future use at the existing forcemain crossing of Five Mile Creek (100 feet of pipe).
- Install new forcemain pipes between the proposed lift station and the existing forcemains, includes crossing Five Mile Creek where a spare forcemain would be installed under Five Mile Creek (approximately 1,000 feet of pipe).
- Construct a new access road between Bitterroot Drive and Site 4.
- Construct approximately 1,200 feet of new 24" gravity new sewer main from the existing lift station to Site 4.

Bore crossing and horizontal direction drilling were considered, however, these types of construction were determined to be infeasible due to site conditions such as the depth of the creek and the small construction area (within easements). Therefore, open cut construction (trenching) to replace the existing forcemains and to install forcemains at the new location is proposed as the best method to cross Five Mile creek. The site layout can be seen in Figure 4. All piping will be placed a minimum of six feet below the existing stream bed and the work at each crossing would be completed in one open trench. The water in the creek would be bypassed around the construction areas. Following the trench backfill operation, the disturbed area would be graded as close as possible to preconstruction contour, and elevations, and bank stabilization and restoration would be completed to all disturbed areas.

#### 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. Salvage values were determined to be inconsequential and therefore not presented. An interest rate of 4.0% over the 40-year planning period (design years 2012 to 2052) was used in the analysis. Table 2 provides a summary of the present worth analysis of the feasible alternatives considered.

TABLE 2 – ECONOMIC EVALUATION OF TREATMENT SYSTEM ALTERNATIVES

Site Location Number (From Above)	Location	Capital Costs (million)	Annual O&M Cost	O&M Present Worth (million)	Total Present Worth (million)
1	Adjacent to Existing Lift Station	\$3.936	\$12,681	\$0.565	\$4.500
2	West of Existing Site – West of City ROW	\$4.438*	\$13,096	\$0.555	\$4.993
2A	West of Existing Site – On City ROW	\$4.613*	\$13,096	\$0.555	\$5.167
3	Southwest of Existing Site – East of City ROW	\$4.534*	\$14,724	\$0.607	\$5.141
4	Southwest of Existing Lift Station – On City Property	\$4.434*	\$13,145	\$0.558	\$4.991

\*Includes future capital cost for additional forcemain, pump and odor control

Although the capital cost and present value cost for Site 4 are higher than the Site 1 cost, the City preferred the Site 4 location for the following reasons:

- Site 4 is on property already owned by the City of Billings where Site 1 would require the purchase of property.
- Site 4 would distance the lift station from subdivision homes and therefore would delay or potentially eliminate the need for an odor mitigation system whereas an odor mitigation system would be required at time of construction of the new lift station.
- Site 4 would minimize the future forcemain construction.
- Site 4 would not require a bridge or culvert over the Five Mile Creek channel for access to the site from Bitterroot Drive.

#### C. BASIS OF SELECTION OF PREFERRED ALTERNATIVE

Site 4 was recommended in the PER and preferred by the City staff over the other four sites, predominately because of the following reasons:

- Site 4 is on property already owned by the City of Billings.
- Site 4 would distance the lift station from subdivision homes and therefore would delay or potentially eliminate the need for an odor mitigation system.
- Site 4 would minimize the forcemain construction.
- Site 4 would not require a bridge or culvert over the Five Mile Creek channel for access to the site from Bitterroot Drive.

The use of open cut excavation across Five Mile Creek will help provide a cost effective project, will meet environmental and regulatory compliance as long as the requirements of the stream crossing permits are complied with, and will be the most constructible. Replacement of new forcemain piping under Five Mile Creek will provide less maintenance than the existing piping and should provide for less chance of

leakage in the future. It was determined that the open cut excavation approach meets the requirements to protect environmental quality, reduce maintenance, energy costs, and achieve regulatory compliance.

The estimated administration, design and construction cost for Site 4 is approximately \$3,515,000. The City of Billings will fund the project using a \$3,450,000 loan from the Water Pollution Control State Revolving Fund (WPCSRF) program that will have an interest rate of 3.00% for 20 years and the City will provide \$65,000 from wastewater revenues.

There is no direct financial impact of this project on the system users. However, in March 2011 the City received a Water and Wastewater Cost of Services Study (WWCSS) which planned for FY 2012 through 2013 costs for operation and maintenance (O&M) and continued development of the water and wastewater systems. The O&M costs appear to be fairly even from year to year, but long-term debt, capital expenditures, and repair and replacement of the water and wastewater system are expected to increase significantly. The capital improvements for the wastewater system include \$2,000,000 in FY 2012 for design and \$58,000,000 in FY 2013 for construction. The WWCSS recommended the City increase wastewater rates and system development fees to allow for the replacement of the existing wastewater infrastructure and for future capital improvements. The current average monthly wastewater residential rate is \$19.49. Based on the recommendations in the WWCSS, the City adopted an increase service rate charge of \$0.89 per month for capital improvement projects, which will result in an average monthly residential wastewater service rate of \$20.38.

#### IV. AFFECTED ENVIRONMENT

##### A. STUDY AREA / MAPS

The City of Billings is located in South Central Montana along the Yellowstone River. The location of Billings can be seen on the enclosed map in Figure 1. The project area is located in the "Heights" area of Billings, which is located in the northeast portion of Billings. To ensure that the new lift station would be sized to serve for an expected design life of 40 years, the PER defined a (40 year) growth plan/service area and future population which ultimately included approximately 5,170 acres (8 square miles) and could serve approximately 11,169 people. The existing service area is approximately 762 acres and the existing lift station serves approximately 3,659 people. See Figure 2.

All work will occur within the existing right-of-ways or dedicated easements within the Billings city limits. See Figures 3 and 4. The project will include: replace or install approximately 100 feet of sewer forcemain under Five Mile Creek at the existing location, install 1,000 feet of new 12" diameter forcemain (including approximately 510 under Five Mile Creek at a new location), install 1,184 feet of 24" gravity piping from the existing lift station to the proposed lift station, install 93 feet of 8" diameter gravity piping near the existing lift station, construct a new lift station with a future capacity of 2,950 gallons per minute at the Site 4 location, and abandon the existing lift station. The lift station will include a (control) building, dry well, valve vault, and emergency (backup) generator. Construction is scheduled to begin in the spring of 2013 and end in

the fall of 2013.

Figure 1 shows the general location of the City of Billings within the state of Montana. Figure 2 shows the planning/service area for the proposed lift station, including a portion of the City of Billings (limits) and a portion of Yellowstone County that can be served by the lift station. Figure 3 shows the five alternative sites considered and the location of the forcemains. Figure 4 shows the location of the proposed project on an aerial map.

#### B. POPULATION AND FLOW PROJECTIONS

To ensure that the new lift station would be sized to serve for a design life of 40 years, the PER defined a 40 year growth plan, a service area, and estimated a future population for the service area. The existing service area is approximately 762 acres and the lift station serves approximately 3,659 people. The current flow from the lift station was estimated to be 2 million gallons per day (mgd), with a peak hour flow of 970 gallons per minute (gpm). The future service area included a portion of the Billings city limits, as well as a portion the adjacent Yellowstone County area. The future service area ultimately included approximately 5,170 acres (8 square miles) and was estimated to include approximately 11,169 people, see Figure 2. An average growth rate over the 40-year design period of 2.829% was used to estimate the future population. The future flow is projected to be approximately 4.2 mgd with a peak hour flow of 2,950 gpm.

#### C. NATURAL FEATURES

The surface soil has been mapped as the Haverson loam by the Yellowstone County Soil Survey (version 11, January 17, 2012). Haverson loams are generally well drained and have a high water capacity. The site is relatively flat, sloping approximately one percent to the north. The subsurface soil profile, based on eight boreholes in the project area, consists of up to 20 feet of a sandy clay or lean clay soil above 4 feet to 20 feet of either a silty sand or clayey gravel soil. A moderately hard sedimentary bedrock or shale was found below these soils in all boreholes. The bedrock was found to range from 15 to 25 feet below the surface and therefore some of the pipe and the wet well construction may be in the bedrock. Depth to groundwater ranged from 7 feet to 16 feet deep in the boreholes (November 2012). The lift station wet well and underground utility work may occur in groundwater because the depth of groundwater varies with the time of year, and is expected to be higher in the spring and summer. In these locations groundwater dewatering may be required and therefore a dewatering permit will probably be required. The elevation of the project area ranges from 3114 to 3179 feet above sea level. No adverse impacts to groundwater are expected.

The average precipitation for the City of Billings is 14.6 inches per year.

### V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

#### A. DIRECT AND INDIRECT IMPACTS OF PROPOSED PROJECT

Land Use - All of the proposed work will be located on undeveloped property owned by the City of Billings Parks and Recreation Department (P&RD). The property is currently zoned R-

70 and R-70-A and therefore utility installations will require a land use contrary to zoning process before the Board of Adjustment. A Land Use Contrary to Zoning public hearing before the City Board of Adjustment has been scheduled, but it may take approximately 4 to 5 weeks before the public hearing is held. The Board of Adjustment is a forum for public comment but does not have the power to approve, place conditions on or deny the Land Use Contrary to Zoning. Therefore, the construction of the lift station and associated utilities on the property should not be a land use concern. A portion of the proposed 24" gravity sewer main and access road will be constructed in an undeveloped city street right-of-way (ROW), whereas the lift station access road, lift station, and gravity and forcemains will be located on P&RD property in permanent easements, which will be obtained from P&RD. Because of the depth of the sewer main, several temporary construction easements will also be obtained, including one on the adjacent private property for the gravity main construction and several from the P&RD. The site is not classified as prime farmland. No adverse effects to the land use are expected due to the proposed utility improvements.

Soils Suitability, Topographic and Geologic Constraints - No soil, topography or geological constraints were found for the proposed project and based on the existing conditions and soils types, the impacts of the proposed project will have no significant effect on the soils or topography. The soils are not classified as prime farmland. There is minimal potential for the discovery of hydrocarbon contaminated soils during lift station or pipe construction. However, it is unknown until construction occurs if contaminated soils will be encountered. If contaminated soils are encountered, they will be removed and replaced with clean soils in accordance with MDEQ regulations and guidance if necessary.

Fish and Wildlife - The construction of the proposed improvements should not impact endangered or threatened species and no construction related impacts are anticipated to wildlife habitats, fisheries or other animals. The Montana Department of Fish, Wildlife, and Parks and the U. S. Fish and Wildlife Service reviewed the proposed project and indicated that based on their review of the proposed project, they had no concerns with the current proposed project and it was unlikely there would be any significant adverse effects to fish, wildlife, or habitat resources. See Section IX: Agencies Consulted of this report for a summary of their comments.

Water Resource Issues - No significant adverse impacts to surface or groundwater will result from the proposed project. A stormwater general discharge permit and a groundwater construction dewatering permit may be needed and will be acquired, if necessary.

Floodplain - Plans designating the floodplain limits for Five Mile Creek are in the preliminary stages of development and in review of the preliminary mapping, most of the new pipe construction (gravity and forcemain) is shown to be located within the 100-year floodplain of Five Mile Creek. However, the mapping does indicate the proposed lift station site will only be partially in the 500-year floodplain and not in the 100-year floodplain. The pipe construction portion of this project will require a floodplain development permit which can be obtained from the local Floodplain Administrator if the work in the floodplain complies with local floodplain ordinances and State and Federal laws. See Section IX: Agencies Consulted of this report for a summary of their comments.

Wetlands - Although work will be completed in two locations of Five Mile Creek, no wetlands have been noted in these areas. Therefore, no adverse impacts to wetlands should occur due to this project. If final design prescribes the placement of fill material in any jurisdictional wetland area, a permit may be required.

Cultural Resources & Historical Sites – Since most of the proposed construction will occur within previous disturbed areas there is a low likelihood that cultural properties will be impacted. However, the State Historic Preservation Office recommended that monitoring take place during construction of the new creek crossing and should cultural materials be inadvertently discovered during construction, construction will be stopped and the State Historic Preservation Office will be contacted. See Section IX: Agencies Consulted of this report for a summary of their comments.

Air Quality - Short-term negative impacts on the air quality will occur from heavy equipment, dust and exhaust fumes during project construction. Proper construction practices and dust abatement measures must be specified during construction to control dust, thus minimizing this problem. No long-term air quality problems will result from this project.

Energy - During construction of the proposed project, additional energy will be consumed, resulting in a direct short-term increased demand on this resource. The project will eliminate the leaking wet well (inflow) and therefore reduce flow that must be pumped and the wastewater flow to the wastewater treatment facility. The proposed new pumps and the reduced inflow will reduce pumping costs and save energy in the long-term operation of the lift station and wastewater treatment systems. Energy consumptions will be minimized as much as possible through the use of energy efficient equipment (pumps).

Public Health – Public health will be protected and improved due to this project at the existing lift station for city staff and at the existing Five Mile Creek crossing. Improvements to the sewer main will reduce the potential for sewage backups/overflows and the required maintenance related activities by the city staff. The project will eliminate current safety issues for the maintenance staff. In addition, the infiltration of groundwater will be reduced, resulting in improved treatment of the wastewater at the city treatment facility.

Noise - Short-term impacts from excessive noise levels may occur during the construction activities. The construction period will be limited to normal daylight hours to avoid early morning or late evening construction related disturbances. In the long-term, no increase in noise levels associated with this project will occur. The emergency generator will be housed within the proposed building and the new pumps will be in the (covered) wet well. Therefore, no significant long-term impacts from noise should occur.

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. The economic impact will ultimately affect all of the users of the system because of the increase in service costs due to the project costs. However, no disproportionate effect among any portion of the community is expected.

Growth - No significant growth is expected as a result of the project. However, the lift station will be sized to serve potential growth in the service/planning area.

Cumulative Effects – The lift station replacement project may have secondary and cumulative impacts associated with growth in the service area due to the availability of increased flow capacity with the proposed lift station. The extension of the city sewer collection system would be required to serve most of the service/planning area. A sewer collection system typically allows a higher population density because it allows homes to be constructed closer together.

Secondary impacts associated with growth in the service area could include: housing, commercial development, solid waste, transportation, and increased air emissions from additional traffic, increased water consumption, and possible loss of agricultural and rural land uses. These secondary impacts are uncertain and cannot be directly addressed in the EA because the local property owners control whether they divide their property and whether they extend the city collection system. However, there are city, county, and state regulations in place, including; zoning regulations, comprehensive planning, and subdivision laws, that control the density and development (sanitation facilities, water supply, sewage disposal, solid waste disposal and storm drainage system). The density will be controlled to some extent by these regulations, when and if the property owners divide their property (and extend the city sewerage city to serve their property). The City is planning for growth now (City policy for "Smart Growth") by establishing the area where the city sewer system can serve (service area) and estimating the future population for the 40-year planning period and Yellowstone County and the City of Billings should have adequate time and resources to make the necessary adjustments to accommodate the increased population which could occur in this area as a result of the benefits of the city sewer system. Therefore, it is expected that impacts to the environmental resources due to the sewer system will be minor. However, the projected increase in population and development in the service area would result in increased flows to the WWTF.

B. UNAVOIDABLE ADVERSE IMPACTS

Short-term construction related impacts, such as noise, dust and traffic disruption, will occur but should be minimized through proper construction management. Energy consumption during construction cannot be avoided.

VI. AGENCY ACTION, APPLICABLE REGULATIONS, AND PERMITTING AUTHORITIES

No additional permits will be required from the State Revolving Fund (SRF) section of the DEQ for this project after the review 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 124 Permit from the Department of Fish, Wildlife and Parks, a 404 Permit from the U.S. Corps of Engineers, and a 318 Authorization from the Department of Environment Quality will be required for the crossings of Five Mile Creek and will be obtained.

All appropriate easements and permits for construction and maintenance (access will be addressed by the city prior to beginning construction.

VII. PUBLIC PARTICIPATION

A properly advertised public meeting was held on September 26, 2012. No one from the general public attended the meeting and therefore there were no public comments on the project. A second meeting will be held in early 2013 for comment and discussion.

### VIII. REFERENCE DOCUMENTS

The following document has been utilized in the environmental review of this project and is considered to be part of the project file:

1. 2012 City of Billings Five Mile Lift Station Preliminary Design Report prepared for the City of Billings, by Morrison Maierle, Inc., Billings, Montana, October 2012.
2. Uniform Application Form for Montana Public Facility Projects for the City of Billings Sewer and Water Replacement Projects, December 2012.
3. City of Billings Public Works Department Water and Wastewater Cost of Services Study, City of Billings Public Works, March 2011

### IX. AGENCIES CONSULTED

The following agencies have been contacted in regard to the PER, which determined the basis for the proposed lift station replacement project:

1. The Montana Department of Fish Wildlife and Parks (FWP). Did not have specific comments on the project and no concerns about impacts to fisheries habitat or wildlife.
2. The U. S. Fish and Wildlife Service (FWS) was asked in a letter by the project consultant for comments on the proposed project. The FWS indicated that it was unlikely to be any significant adverse effects to fish, wildlife, and habitat resources under the purview of the FWP.
3. The Montana State Historic Preservation Office (SHPO) considered the impacts of the proposed project on historical sites and determined there is a low likelihood cultural properties will be impacted. The Montana State Historic Preservation Office asks to be contacted and the site investigated should cultural materials be inadvertently discovered during construction.
4. The U.S. Army Corps of Engineers (USACOE) was asked in a letter by the project consultant for comments on the proposed project. The USACOE did not respond to the letter, but has received an application for the project to cross the Five Mile Creek in two locations. The USACOE application for the proposed work will be processed as a Nationwide Permit 12 and will include a 401 Water Quality Certification.
5. Department of Natural Resources and Conservation (DNRC) was asked in a letter by the project consultant for comments on the proposed project. The DNRC indicated that the Floodplain Administrator will issue a permit for the work if it complies with local floodplain ordinances and State and Federal laws.

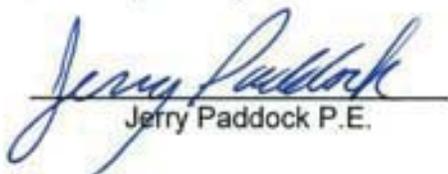
#### **Recommendation for Further Environmental Analysis:**

EIS     More Detailed EA     No Further Analysis

Rationale for Recommendation: Through the Preliminary Engineering Report (PER), prepared by Morrison Maierle, Inc., the City of Billings determined that the replacement of the Five Mile Lift Station will improve the operation and maintenance capabilities of their system. Through this EA, the MDEQ

has verified none of the adverse impacts of the proposed Five Mile Lift Station Replacement 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. This EA is the appropriate level of analysis because none of the adverse effects of the impacts are significant. A Finding of No Significant Impact (FONSI) will be issued and legally advertised in the local newspaper and distributed to a list of interested agencies. Comments regarding the project will be received for 30 days before final approval is granted.

**EA Prepared By:**

  
Jerry Paddock P.E.

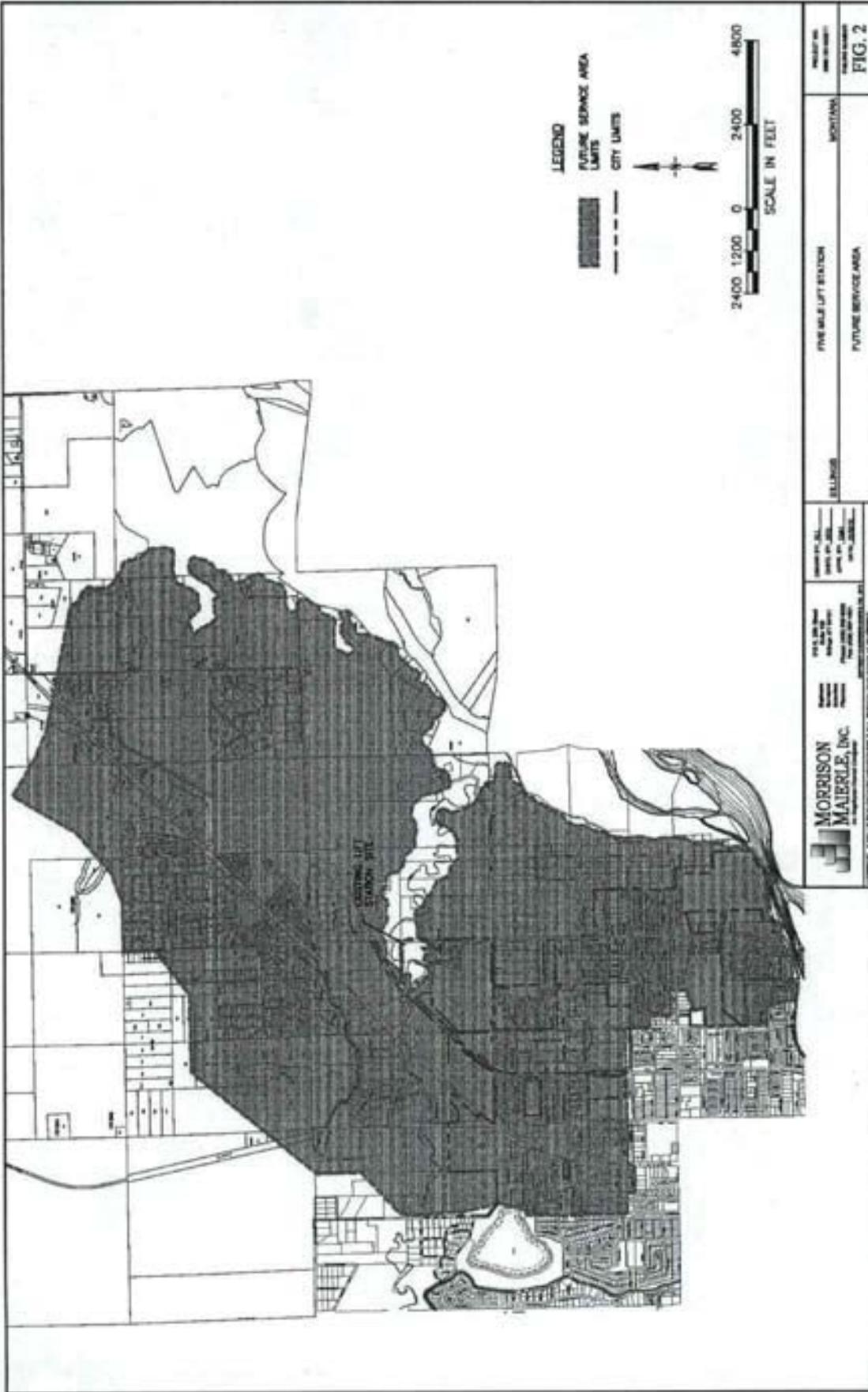
12/6/12  
Date

**Approved By:**

  
Mike Abrahamson P.E.

12/6/12  
Date





**FIGURE 2  
 PLANNING AND SERVICE AREA**



Billings Five Mile Lift Station Project  
Environmental Assessment

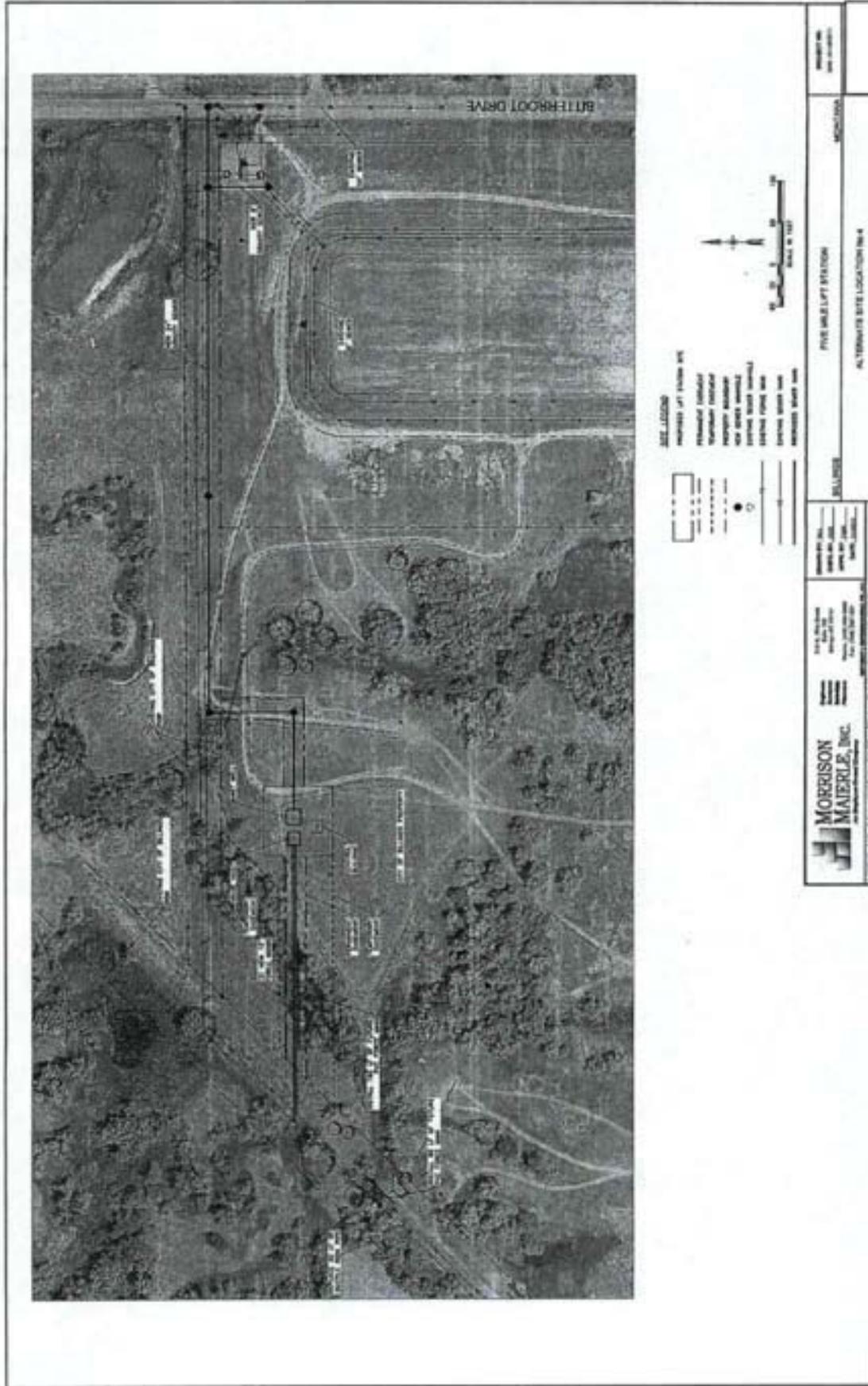


FIGURE 4  
SITE MAP (ALTERNATIVE 4)