ENVIRONMENTAL ASSESSMENT DOCUMENT

A. Project Identification:

Applicant: City of Benkelman
Project No.: C318002

City: Benkelman	**County:**	Dundy	**State:** NE
Total Project Amount:		$1,400,000	
CWSRF Loan:		$1,000,000	
Potential Small Town Grant		$250,000	
Potential Principal Forgiveness		$150,000	

B. Community Description:

Location: The City of Benkelman is located in the south-central portion of Dundy County in the extreme southwest portion of Nebraska and is located approximately four miles north of the Kansas State line on Highway 34.

Population: The 2010 census population of Benkelman was 953. The population has been declining since 1980. The design population for the year 2037 is 953.

Current Methods of Waste Treatment: The Benkelman wastewater collection includes one lift station, gravity sewers and a three-cell lagoon system. The wastewater collection system consists of mostly 8-inch vitrified clay pipe. The collection system drains by gravity to 3rd Street and "E" Street East, then crosses beneath the railroad tracks and continues south to the lift station that is located at the existing wastewater treatment facility.

The original 2-cell lagoon facility and lift station were constructed in 1964 and a third cell was added in 1987. The 3-cell lagoon system which has a total surface area of 17.6 acres was designed as a controlled discharge system. The City's lagoon system is unable to consistently meet NPDES discharge limits for BOD, TSS and ammonia and on occasion E Coli.

C. Project Description:

Purpose: Benkelman proposes to upgrade their facilities in order to comply with all applicable regulations and requirements.

Type: The proposed project consists of replacement of the existing lift station with a new lift station with a generator and new controls that will connect the proposed lift station to the existing water treatment plant SCADA system. A fourth lagoon cell with a surface area of 6.5 acres will be added to the existing 3-cell lagoon system. The 4-cell lagoon system will have a total surface area of 24.1 acres and is designed as a complete retention lagoon wastewater treatment facility.

Design Factors: The City has collected extensive influent flow recording data from the past several years. A design flow of 90,000 gallons/day or 95 gallons per capita per day is based on a design population of 953. Geotechnical work was conducted at the proposed lagoon site and seepage was estimated at the three existing lagoons to determine a design seepage rate of 0.0625 inches per day for the proposed 4-cell lagoon system.

The project is based on the following design criteria:

Design Population	953
Design Year	2037
Average Daily Flow	90,000 Gallons per Day
Peak Day Design Flow	250 gallons per minute
BOD_5	130 Pounds per Day
Total Suspended Solids	183 Pounds per Day
Net Annual Lake Evaporation	36.00 Inches per Year
Annual Seepage Rate	22.5 Inches per Year

Receiving Stream: Republican River, Segment RE3-40000.

D. Alternatives Considered:

Types: The wastewater treatment system alternatives considered for Benkelman include (1) Expansion of the existing 3-cell lagoon system to a 4-cell complete retention lagoon system, (2) Use existing lagoon system with the addition of a land application system and (3) Renovation of existing facility with the addition of aeration and ammonia removal process.

Reasons for Selection of Proposed Alternative: The proposed alternative was selected on the basis of cost, environmental impacts and requirements and operational considerations. The City has stringent ammonia limitations in the current NPDES permit. The City's existing lagoon system is unable to consistently meet NPDES discharge limits for BOD, TSS and ammonia and on occasion E Coli. The City and the Nebraska Department of Environmental Quality entered into a consent decree on January 12, 2016 that requires the City to complete upgrades and improvements to the wastewater treatment facility by April 30, 2020 that will bring the facility into compliance with permit conditions and Nebraska Title 119. Expansion of the existing facility to a complete retention facility will eliminate the need to discharge, therefore an NPDES permit and regular monitoring will not be necessary.

E. Environmental Impact Summary:

1. Primary:

a. Construction: A number of Federal, State and local agencies were asked to review the project. At the request of the Nebraska State Historic Society, a survey was conducted by a qualified archaeologist. The survey concluded that there are no

known historical or archaeological resources at the proposed construction site. The Corps of Engineers (COE) determined that there might be "waters of the U.S.", located at the project site, which would be subject to Section 404 of the Clean Water Act. The COE indicated that the need for a 404 permit would be determined once design of the proposed system was complete. The Nebraska Department of Natural Resources determined that the project is located in the floodplain. The top of dike of the proposed new lagoon will be constructed one foot above the 100-year flood elevation. Temporary impacts that may be caused by construction include noise and dust and a limited potential for soil erosion and fuel and oil spills. No wastewater bypasses are expected during construction.

b. Environmental: The project will have a positive impact on the environment since the existing three-cell lagoon system which has been out of compliance with its NPDES permit will no longer discharge to Republican River, Segment RE3-40000.

c. Financial: The City has applied for financial assistance for the project through the Clean Water State Revolving Fund (CWSRF) loan program. The project is listed on the funding list of the FY2019 Intended Use Plan and is eligible for CWSRF financing. Benkelman's median household income is $38,182, and has an AWIN score of 20. Benkelman is eligible to receive a small town grant of $250,000 and $150,000 in principal forgiveness funds and a term loan of $1,000,000 as per criteria described in the 2019 Intended Use Plan. Benkelman is eligible for a 20-year CWSRF loan at the current program interest rate of 1.5 percent. In addition to principal and interest payments, an administrative fee of 1 percent of the outstanding principal balance would be assessed each year. The average annual repayment on a term CWSRF loan of $1,000,000 is $66,434. Revenues generated by the sewer use fees will be used to repay the CWSRF loan. The current residential sewer rate is $9.00/month plus $1.50/1000 gallons of potable water use in the winter quarter, which equates to $16.50/month for 5000 gallons of water use in the winter quarter. The sewer utility serves 486 customers. The impact of the debt service on the sewer utility customers in Benkelman is $10.87 /month, which will bring the sewer rate for residential customers to $27.37 /month.

2. Secondary:

a. Population Impacts: The project would have little or no impact on growth or population density in the community.

b. Land Use and Trends: The project would have no significant impact on land use and trends in the area.

c. Environmental: No significant increases in noise levels or odors are expected.

d. Environmental Justice: This project has been planned to ensure that no segment of the community's population suffers disproportionately from human health or environmental effects.

3. **Mitigation Measures Necessary to Eliminate Adverse Environmental Effect**: The construction documents will require the contractor to protect the site with storm water pollution controls, and to satisfy requirements of the Federal Migratory Bird Treaty Act.

4. **Irreversible and Irretrievable Commitment of Resources:** The resources committed to the project include the pipe and other construction materials and the energy used in construction.

F. Measure Taken to Insure Environmental Soundness:

1. **Public Involvement:** A public hearing on the proposed project was held on May 21, 2018.

2. **Public Opposition or Opinions:** There was no opposition expressed at the hearing.

3. **Coordination and Documentation with Other Agencies and Special Interest Groups:**

Prepared by: Preliminary Engineering Report: Prepared by Miller & Associates dated December 2017.

Federal: US Army Corps of Engineers

State: Nebraska Department of Environmental Quality
Nebraska Department of Natural Resources
Nebraska State Historical Society
Nebraska Department of Aeronautics

Local: Benkelman City Council

Consulting Engineers: Miller & Associates

Public Groups: None

G. Positive Environmental Effects to be realized from the Proposed Project: The project will comply with Title 119 – Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System. Since the proposed WWTF is designed as a complete retention lagoon system, effluent that did not meet NPDES limitations will not discharge into the Republican River.

H. Reasons for Concluding there will be No Significant Impacts: Review of the preliminary engineering report and supporting documents indicates that the proposed project will result in positive environmental effects and benefits. No threatened or endangered species or recorded historical or archaeological sites will be affected by construction. Adverse impacts if any on wetlands will be mitigated. The construction

documents will specify storm water pollution controls, and protection of nesting migratory birds. No segment of the community's population will be impacted disproportionately by the project.

Reviewing Engineer

Date: July 2, 2018

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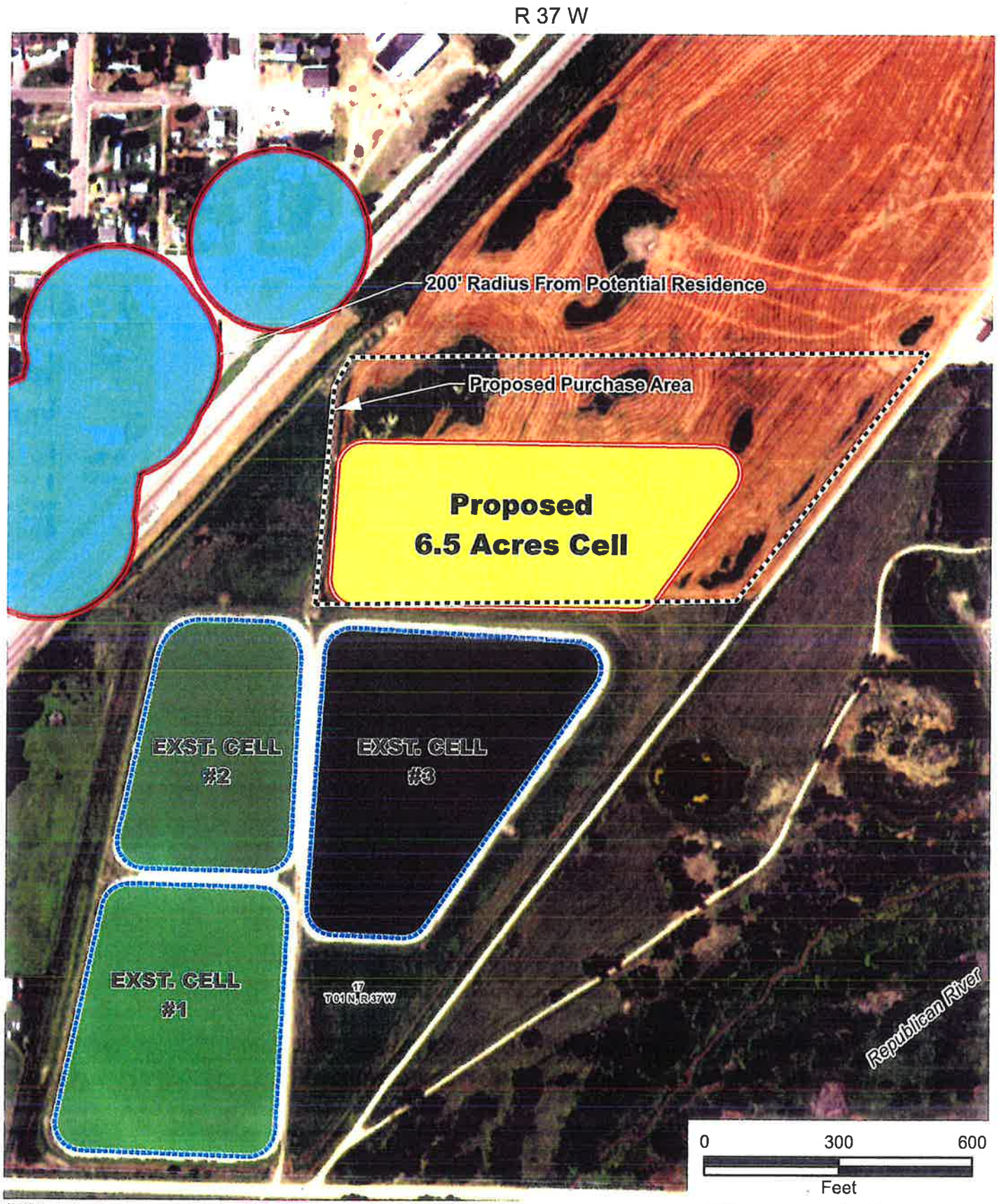

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Figure 4.4
Proposed Additional Cell Site

Project 216-D1-004
Benkelman, Nebraska

Prepared By:

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