

ENVIRONMENTAL ASSESSMENT DOCUMENT

A. Project Identification:

Applicant: Village of Culbertson (Village) **Project No.** C317664

Village: Culbertson **County:** Hitchcock **State:** Nebraska

Total Project Amount: \$928,950 **NDEQ Loan Forgiveness:** \$100,000

SRF Loan Funds: \$883,950 **Other Funds:** \$45,000 Village Funds for land acquisition

B. Community Description:

Location: Culbertson is located in Hitchcock County, in the southwest portion of the State. The community is about 15 miles west of McCook.

Population, Present and Projected, and Design Year: The 2010 census population of Culbertson is 595. The projected population for the design year of 2036 is 595 people.

Current Methods of Waste Treatment: The Village currently has a separate sanitary sewer system, a lift station, and a two-cell lagoon system originally built in 1963. The two-cells of the lagoon are labeled cell no. 1 with a surface area of 2.25 acres, and cell no. 2 with a surface area of 3.07 acres at the high water level. In 1987, two rapid infiltration cells each with a surface area of 0.64 acres were added on the east edge of cell no.2. Repairs to the lift station were also made at that time. The Village's National Pollutant Discharge Elimination System (NPDES) permit has a limit of 10 mg/l of total Nitrogen on the treated water from cell no. 2 that is discharged to the rapid infiltration cells. This permit limit has been consistently exceeded. The Village received a new NPDES permit on December 15, 2014, which included a requirement that the Village complete Wastewater Treatment Facility (WWTF) upgrade, which would result in compliance with the NPDES permit.

C. Project Description:

Purpose: (What does project hope to achieve): The project will change the wastewater treatment facility from facultative lagoons in combination with rapid infiltration basin facility to a non-discharging complete retention lagoon system. The complete retention lagoon would exempt the Village from NPDES permit discharge requirements.

Type: The two existing lagoons (i.e. cells no. 1 & 2) are in satisfactory condition and have partial erosion protection. The existing cells are 7.5 feet deep. The Village is proposing to abandon the two rapid infiltration cells and build an additional facultative cell east of and adjacent to cell no. 2. The new cell will have a surface area of 4.1 acres, will be 8-9 feet deep, will have rip-rap on the interior dike slope, and will have interconnecting piping. The three cell lagoon system will have a total surface area of 9.42 acres and is designed as a complete retention lagoon facility. The scope of the project also includes replacing the pumps at the existing lift station. The lift station currently has a generator, which will provide back-up power to the lift station. The project will be complete with a bentonite clay liner, plus seeding and fencing for the new lagoon. The clay liner will be tested for permeability in accordance with Title 123 of the Nebraska Department of Environmental Quality (NDEQ) regulations and be limited to a maximum seepage of 1/8 inch per day. Moving to a complete retention lagoon system would exempt Culbertson from a NPDES permit.

Design Factors: The Village measured average daily flow by month at the lift station between January 2012 and December 2014. A drastic drop in flow was noted after 2012 compared to 2013, and 2014. The operator indicated that a 2-inch water line had been discovered leaking into a nearby manhole in January 2013. The 2-inch water line was repaired and flows to the WWTF dropped by approximately 34,000 gallons per day. The average daily flow in 2013–2014 was consistent and translated to 78.5 gallons per capita per day (gpcd). A design flow of 47,000 gallons per day (79 gpcd) was used to design the complete retention lagoon facility. The organic loading used to design the WWTF was 55 lbs/day (140 mg/l). Cell no. 1 with a surface area of 2.25

acres would be used as the primary cell (at loading of 24 lbs/acre) to divert the influent into the three cell lagoon system.

Reserve Capacity: The complete retention lagoon system is being designed for the current population of 595 for design year 2015.

Receiving Stream: The existing system is a two-cell facultative lagoon system followed by a two-cell rapid infiltration system and therefore does not discharge to a stream. The project will eliminate a discharge to the rapid infiltration basins and is designed as a complete retention lagoon system and therefore qualifies for an exempt status from the NPDES permit.

D. Alternatives Considered:

Types: Two alternatives were considered, these were the following;

1. Land Application System using the existing two facultative lagoons.
2. Complete retention lagoon system

Reasons for Selection of Proposed Alternative: A life cycle cost analysis for the two alternatives concluded that the complete retention alternative was the lower of the two costs over a 20-year period. Also, from an operational point of view, the complete retention lagoon system is the easier of the two alternatives to operate and maintain.

E. Environmental Impact Summary:

1. Primary

a. Construction: No significant impact is expected. Slight noise and air pollution associated with earthwork construction will occur during work hours. Minor soil erosion and vegetation losses will occur during construction. No burning, blasting, herbicides or defoliant will be permitted in clearing of the site.

b. Environmental: Any negative impact due to disturbing of the existing landform will be temporary. A construction storm water runoff permit and related erosion control provisions will be required by NDEQ for this project since more than one acre of land will be disturbed. The Village can designate the General Contractor as the authorized representative after providing the storm water permit notice of intent to NDEQ. Positive impact should be gained for the area groundwater quality. Based on a detailed Geotechnical Report, 2 pounds of bentonite per square foot will be needed to place a liner 12 inches in thickness on the floor and sidewalls of the new lagoon in order to limit seepage to the NDEQ guideline of no more than 1/8-inch per day. No filling in of the waters of the U.S. will be done with the project.

c. Financial: Based on the Village's median household income of \$48,750, the Village is eligible for principal forgiveness of 12.80% of the eligible project costs capped at \$100,000. This loan forgiveness will be matched by \$783,950 of CWSRF loan financing at a interest rate of 1.5% per annum plus 1% annual administrative fee on the outstanding principal balance. Land purchase, easements, and legal costs are ineligible CWSRF costs. The impact to Village's sewer user charge is estimated as follows: The Village's current residential sewer user charge is a flat rate of \$17.00/month. The Village has 330 sewer connections. The projected monthly user charge will need to be increased by an average of \$12.50 a month to cover 20 year CWSRF debt service and \$17.00 O&M costs or a projected total of \$29.50 average monthly sewer rate. In addition, non-CWSRF debt retirement for the land costs should be added to the projected monthly sewer rate.

2. Secondary

a. Population Impacts: No impact is expected on the population density but the project would serve the existing population, which is also the 20-year design population.

b. Land Use and Trends: Minor impact is expected on the existing land use adjacent to the wastewater treatment system, approximately 3.5 acres of existing agricultural land would be taken from production. The proposed site was not designated as prime farmland by the Natural Resources Conservation Service.

c. Environmental: Other federal and state agency reviews produced the following comments. The Nebraska State Historical Society had no record of cultural resources and did not request a historical survey for unreported archaeological resources. The Nebraska Department of Natural Resources stated that the proposed lagoon system was out of the 100-year floodplain. There should be no impact related to floodplain management. The U.S. Corps of Engineers indicated that any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. The U.S. Fish and Wildlife Service (USFWS) indicated that the project would not impact federally listed species, or their critical habitats. A requirement to comply with the Migratory Bird Treaty Act will be included in the project specifications.

d. Environmental Justice: This project has been planned for treating wastewater from all connections to the sanitary sewer system equally. No segment of the Village's population suffers disproportionately from unequal sanitary treatment or its environmental effects on human health.

3. Mitigation measures necessary to eliminate adverse environmental effect: The lagoon system will be sealed with a native clay liner to meet NDEQ's requirements of a maximum of 1/8 inch per day seepage. Rip-Rap will be placed on the interior dikes of the new lagoon and will be protected from erosion. A construction storm water runoff permit and related erosion control provisions will be required by NDEQ for this project since more than one acre of land will be disturbed. If construction occurs during the primary nesting season of April 1 to July 15, then a field survey by a qualified biologist may be required if construction would result in the taking of nesting migratory birds, with the results submitted to USFWS prior to construction. A requirement to comply with the Migratory Bird Treaty Act will be included in the project specifications.

4. Irreversible and irretrievable commitment of resources: Resource commitment will be minor in construction materials and energy use to build and operate the new lagoon.

F. Measure Taken to Insure Environmental Soundness:

1. Public Involvement: A public hearing was held on October 6, 2015, having the required 30-day advertised notice. The Village Board, Village Clerk, and the Village Attorney and Consulting Engineer were present. No citizens of the Village attended the hearing. The Consulting Engineer explained the scope of the project and also presented the impact on sewer user rates as a result of the NDEQ CWSRF loan

2. Public Opposition or Opinions: No public opposition was noted at the October 6, 2015, public hearing.

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

a. Design Memorandum: Dated June 1, 2015, Miller & Associates, Kearney

b. Federal:

1. **U.S. Fish & Wildlife Service**, September 2, 2015, letter
2. **Department of the Army, Corps of Engineers**, August 24, 2015, letter
3. **U.S. Dept. of Agriculture, Natural Resources Conservation Service**, August 25, 2015, email

c. State:

1. **Nebraska Department of Natural Resources**, September 15, 2015, email
2. **Nebraska State Historical Society**, August 24, 2015, letter
3. **Nebraska Department of Environmental Quality**, September 3, 2015, email
4. **Nebraska Department of Aeronautics**, August 25, 2015, email
5. **Nebraska State Fire Marshall** , August 20, 2015, email

d. Consulting Engineers: Miller & Associates, Kearney, NE

e. Public Groups:

1. Village residents

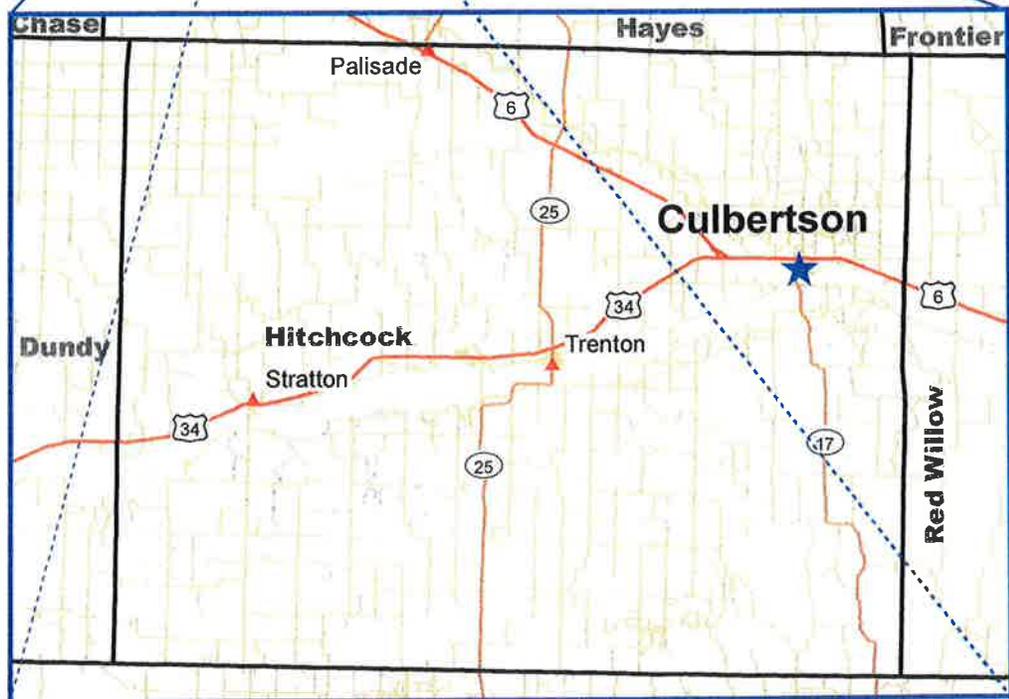
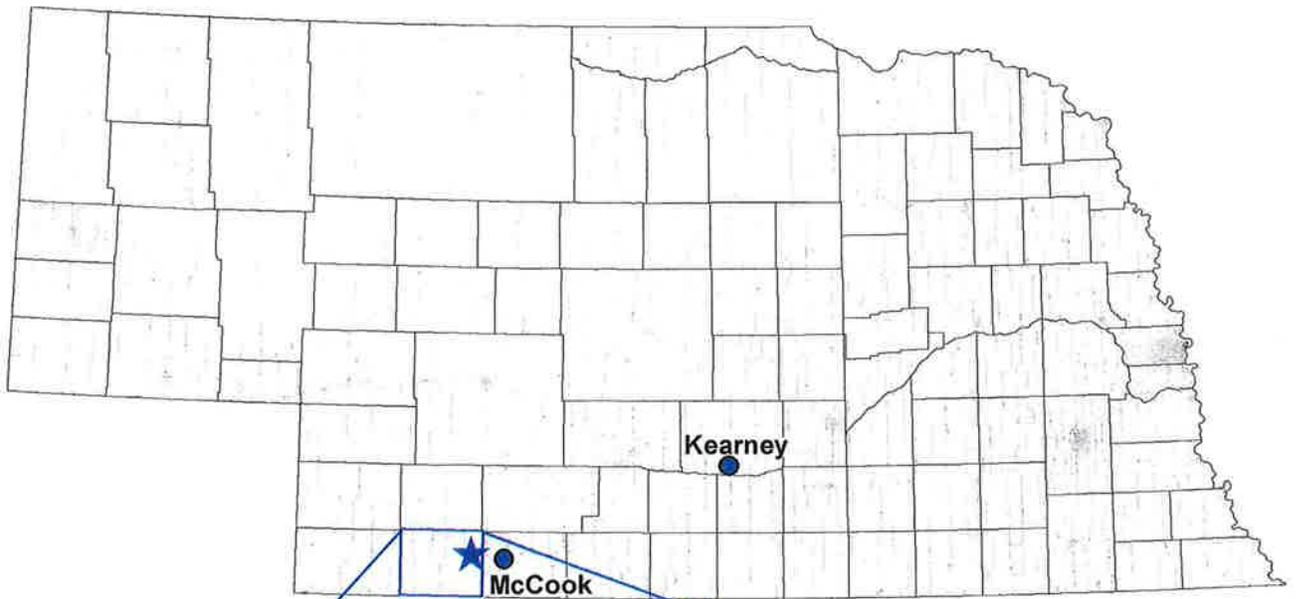
G. Positive Environmental Effects to be Realized from the Proposed Project: Area ground water should improve as a result of the project.

H. Reasons for Concluding there will be no Significant Impacts: No adverse impact occurs on wetlands, floodplain, or recorded historical resources. Provisions included in the construction contract will protect nesting migratory birds. No potential recreation and open space opportunities exist. Minor change in land use will occur, as 3.5 acres of agricultural land will be taken out of production. There should be no adverse impact on the Village's growth patterns.



Reviewing NDEQ Engineer

October 20, 2015 Date

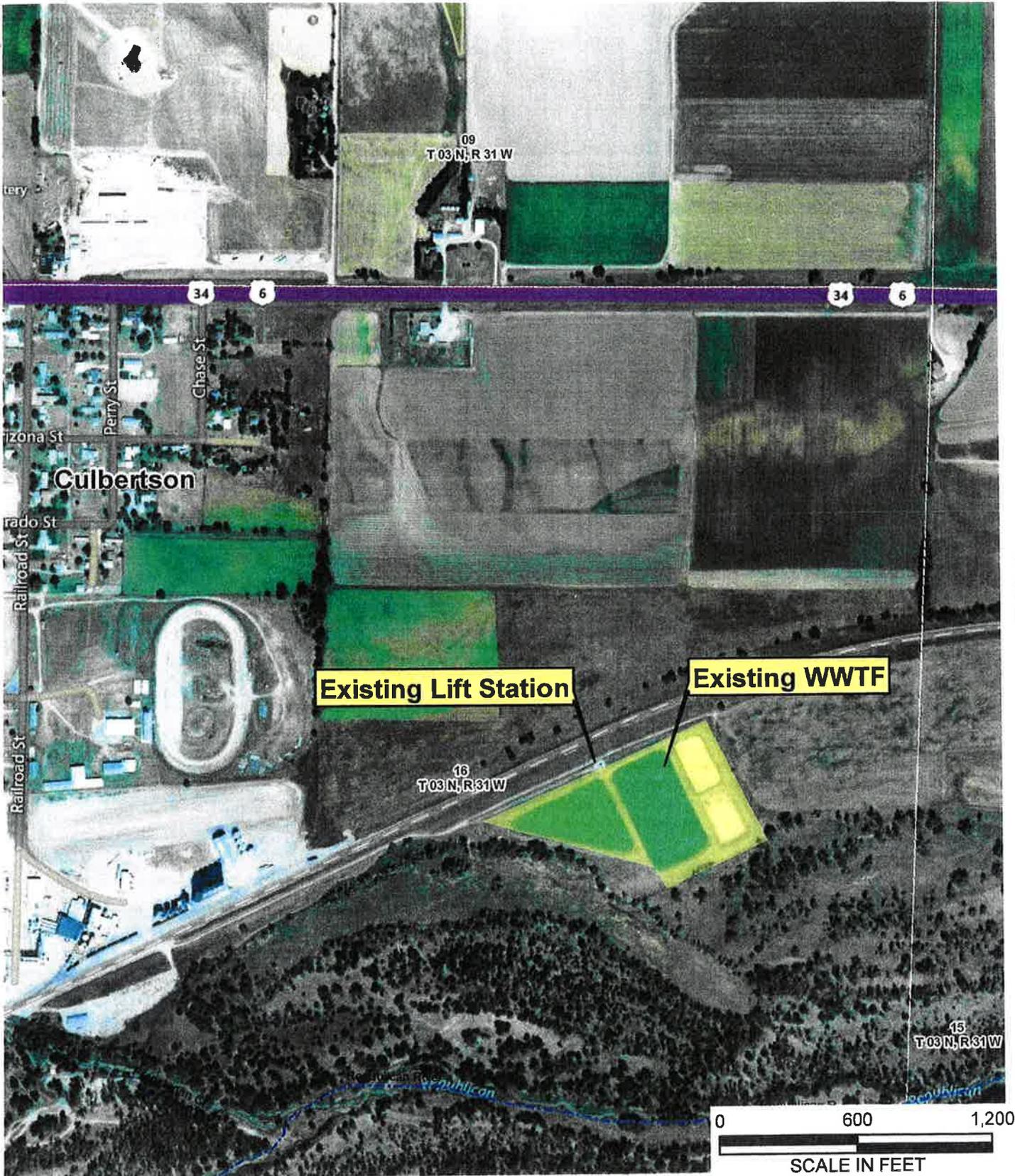


Prepared By:



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**Location Map
 Figure 1**



5/29/2016 7:58:47 AM Path: G:\Projects\224\224-D1-001\GIS\Fig 2 Existing.mxd

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Existing WWTF Location Map
NE 1/4 Sec. 16, T-03-N, R-31-W
Figure 2

FINDING OF NO SIGNIFICANT IMPACT DISTRIBUTION LIST
CULBERTSON, NEBRASKA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Public Affairs
P.O. Box 98922
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DEPARTMENT OF HEALTH AND HUMAN
SERVICES – DIVISION OF PUBLIC HEALTH
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McCook Gazette
West 1st & E
McCook, NE 69001
(Public Information Only not for Public Notice)

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