

ENVIRONMENTAL ASSESSMENT DOCUMENT

A. Project Identification:

Project Name: Sanitary Sewer System Improvements

Applicant: City of Grand Island

CWSRF Project No.: C317990

City: Grand Island **County:** Hall **State:** NE

Total Project Amount: \$8,563,550

Potential CWSRF Loan: \$\$6,473,500

B. Community Description:

Location: The city of Grand Island is located in central Nebraska about three miles north of Interstate 80 and the Platte River. The planning area includes the existing wastewater collection system service area and areas that may be served in the future. Improvements to the sanitary sewer system are planned in three locations in the City.

1. Sanitary sewer improvements are proposed along southeast corner of 10th Street and Howard Avenue and along Custer Avenue located in central Grand Island. See Attachment No. 1.
2. Improvements are proposed along West Stolley Park Road to the south and west that will provide sanitary sewer service to West Park Plaza along the Highway 30 corridor. This extension will initially serve the West Park Plaza Trailer community and businesses along Highway 30. This project area is located in south western portion of Grand Island. See Attachment No. 2.
3. Improvements are also proposed in the collection system located in the Central Nebraska Regional Airport. This project area is in north eastern part of Grand Island. See Attachment No. 3.

Population: The 2012 population for the City of Grand Island was about 49,500 and is projected to be 63,030 in 2037 and 81,710 in 2062 as the service area develops and expands.

Current Wastewater Treatment Systems: Grand Island's wastewater collection system consists of about 226 miles of sanitary sewer mains ranging in diameter from 8 inches to 60 inches. The topography of the area is quite flat and the system includes 14 lift stations. Wastewater flows to the treatment facility averages about 10.1 million gallons per day. The wastewater treatment system includes pretreatment, primary clarifiers, four aeration basins with anoxic zones, final clarifiers, and ultraviolet disinfection. Waste sludge is dewatered, composted, and used as daily cover at the City's landfill. The treatment system is performing well and meeting discharge permit limits. Five

industries in the area contribute significant waste loads to the system. The largest wastewater contributor, JBS Swift, has significantly reduced their wastewater load with a pretreatment system leaving more treatment capacity available for other users.

The City addresses sanitary sewer system issues on an ongoing basis. Issues include sewers deteriorated from age or type of sewer main construction materials, inadequate slopes of sewer mains for gravity flow, or infiltration by high groundwater tables. Of the approximately eight miles of larger diameter primarily concrete pipe, inspected in 2010, over one-third of the segments need major repairs with many in danger of imminent failure. Sanitary sewer overflows and sewer backups are a problem at some locations, particularly during heavy rains, with about 50 backups reported since September 2011. Some mains need to be replaced with larger pipes to increase capacity and/or need to be extended as the City grows. Some of the lift stations have been rebuilt or replaced with gravity flow systems. The City has completed major collection system work in the past 5 years.

The West Park Plaza Trailer community is within the City of Grand Island limits and is served by a single cell lagoon system. The system is in poor condition and has received an Administrative Order from the Nebraska Department of Environmental Quality. The Stolley Park Road Sewer Extension will provide service to existing businesses along Highway 30 that are currently served by septic tanks and leach fields. Lift Station 11 was constructed in 1960 and has significant maintenance problems. Most of the collection system infrastructure at the Grand Island Airport constructed in 1940's is in poor condition.

C. Project Description:

Purpose: The projects to be funded with the proposed loan will address deficiencies in Grand Island's sanitary sewer system and will also provide sanitary sewer service to a substandard onsite single celled lagoon system as well as provide sanitary sewer service to businesses and residences that are currently served by septic tanks and leach fields. The City of Grand Island is working with the Central Nebraska Regional Airport to transfer ownership of existing sanitary sewer infrastructure to that of the publicly owned wastewater collection system within the City of Grand Island. The Central Nebraska Regional Airport collection system originated when the Army Air Corp Base built the airport during World War II. Majority of the infrastructure is in failure. Many areas of past CIPP rehab have collapsed and are in failure. Also, it is assumed that due to the high groundwater table and failure of infrastructure that there is significant amount of inflow and infiltration (I/I). The City's Lift Station No. 11 built in the 1960s is dilapidated, and its wet well and pump capacity is too small for the average daily flow of 100,000 gpd. Moreover, the wet well allows for grease build up and the pumps plug often as they do not have inline grinders. A replacement lift station built to current design standards will address the deficiencies.

Type: The projects that the City proposes to undertake are listed below:

1. Lift Station No. 11 Replacement and Force Main Re-Route: The existing lift station will be abandoned and will be replaced by a new submersible, duplex style lift station with grinder pumps and a stand-by generator. The new lift station will be located approximately 600 feet north of the existing lift station. A new 6-inch force main will be directionally drilled from the new lift station north along Custer Avenue and will connect to 15-inch gravity main located approximately fourteen blocks to the north at Custer Avenue and Forest Street. Currently, the existing lift station No. 11 pumps to the South Interceptor. The proposed lift station No. 11 will pump into the North Interceptor. The South Interceptor has capacity and I/I issues that the City is trying to mitigate.
2. West Stolley Park Road Sewer Extension: Construction of the sanitary sewer extension from West Stolley Road to the south and west is schedule to be completed in advance of a Nebraska Department of Roads (NDOR) Highway 30 Realignment Project. The proposed project would provide sewer to West Park Plaza and along existing Highway 30 corridor via the south pipeline installation. The City will provide sanitary sewer service to the West Park Plaza Trailer community which is in the City limits and is served by a substandard single cell lagoon. Sanitary sewer service will also be provided to businesses along existing Highway 30 which are currently on septic tanks. The proposed project will consist of 7,000 feet of 15-inch diameter gravity sewer along the south run, and 21-inch diameter sewer along the west run. The project will include lateral service connections, and precast concrete manholes. The pipe laid to the west along Stolley Road will be positioned to serve existing residential lots and future development to the north and further to the west in this area. More development is expected in this area as a result of the NDOR project.
3. Grand Island Airport Sanitary Sewer Rehabilitation: This work includes the investigation of the entire sanitary sewer infrastructure at the Airport. The project consists of the abandonment of one lift station, rehabilitation of the other lift station, replacement and or rehabilitation of 15,000 feet of 8-inch gravity sanitary sewer mains, and replacement of an existing force main.

Design Factors: Design of the West Stolley Park Road Sewer Extension is based on a flow of 1,000 gallons per day (gpd) per acre for residential areas, 1,500 gpd per acre for industrial areas, and a peaking factor of 2.0. Existing peak flow is used to design replacement lift station No. 11. The improvements at the airport will replace existing infrastructure.

Receiving Stream: The Grand Island wastewater treatment facility discharges to Segment MP2-10100-20900 of the Wood River, which is protected for Class A warm water aquatic life, Class A agricultural uses, and aesthetics. There is

insufficient water quality data to determine if any of these beneficial uses are being impaired.

D. Alternatives Considered:

Types: The alternatives for the proposed sewer system improvements include different alignments, replacement and or elimination of lift stations, and repair or replacement of sanitary sewer mains.

Reasons for Selection of Proposed Alternative: The West Stolley Park Road Sewer Extension eliminates a substandard community onsite treatment system currently serving the West Park Plaza Trailer Park. In addition, it will also eliminate several septic tanks serving individual businesses and residences in the area. A replacement Lift Station No. 11 eliminates an inadequate, problematic, and failing lift station. Repair and replacement of the collection system in the Airport facilities will result in significant reduction of I/I.

E. Environmental Impact Summary:

Primary:

Construction: The construction impacts will include temporary disruptions to traffic and business activities. The sewer extension to the south west could have some impact on farming near the construction area. Temporary impacts caused by construction also include noise and dust and a limited potential for soil erosion as well as fuel and oils spills. A high water table will necessitate dewatering and there is a potential to encounter existing groundwater contamination. The Fish and Wildlife Service (FWS) have expressed concerns regarding possible impacts to northern long-eared bat habitat from trees removed during June 1-July 31. The FWS also stated that depletions to the Platte River could impact the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid. The projects are not expected to cause depletion in the Platte River. Therefore adverse impacts as a result of the proposed projects to critical habitats are not expected. No impacts to historical or archaeological sites are anticipated. The Nebraska Department of Natural Resources indicated that portions of the proposed project will be constructed in 100-year floodplain/floodway, and they expressed concern about the project may adversely impact public water supplies and other registered wells as a result of dewatering during construction. The Nebraska Department of Health & Human Services indicated that any adverse impact as a result of dewatering if at all may be temporary. The Nebraska Department of Health & Human Services also indicated that construction of the projects will have to comply with Section 005.5 of Title 179 NAC 22 to address any potential encroachments to the City's public water system.

Environmental: The projects will improve wastewater collection in Grand Island by reducing inflow and infiltration (I/I). With reduced I/I,

potential health hazards from sewer backups and sanitary sewer overflows are reduced, and wastewater treatment costs are reduced with reduced flows going to the treatment plant. In addition, the project eliminates a failing community onsite wastewater treatment system and several individual septic systems and leach fields some of which have been installed too close to the groundwater table.

Financial: These improvements to the Grand Island collection system are eligible for funding through the Clean Water State Revolving Fund (CWSRF) and are included in the FY2018 Intended Use Plan. A loan of 6,473,500 at an interest rate of 1.36% for a 20-year term would have an annual debt service of \$370,780. In addition to these principal and interest payments, an administrative fee of 0.5 percent would be assessed on the principal balance for each semi-annual repayment. Revenues generated by sewer use fees, including sewer tap fees, will be dedicated to repay the loan. Grand Island's sewer rates have been adjusted annually. Residential customers currently pay \$34.50 per month for service based on an estimated water use of 5,580 gallons per month during the winter quarter. This rate which was effective on October 1, 2016 is expected to pay for the operation and maintenance of the sewer utility as well as pay for the debt service as a result of the proposed loan and all other outstanding loans.

Secondary:

Population Impacts: The sewer improvements and extensions will facilitate development and population growth in the project area.

Land Use and Trends: The project will foster development and a change of land use in the area. Additional right-of-way is needed for the improvements.

Environmental: The sewer system improvements will have little direct impact on agricultural land and farmland conversion is not a concern. Portions of the proposed project are in the 100-year floodplain but no significant impacts to flooding are anticipated.

Environmental Justice: The project has been planned to ensure that no segment of the community's population is impacted disproportionately from related effects.

Mitigation Measures Necessary to Eliminate Adverse Environmental Effect:

The project includes appropriate design features and proper construction practices to minimize erosion, inflow and infiltration, impacts to the floodplain, and other potential adverse impacts. The City will need to comply with floodplain management regulations, and they will need to obtain necessary permits. Directional boring will be used in places, in order to avoid disruptive and costly pavement removal and replacement. Storm water and dewatering

permits may be required. Construction of the projects will comply with Nebraska Department of Health & Human Services Title 179 regulations.

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. Measures Taken to Insure Environmental Soundness:

Public Involvement: Sewer related issues were discussed at numerous city council meeting over the last few years. A sewer assessment report was completed in 2010. A public hearing sewer extension was held on June 27, 2017 to comply with State Revolving Fund requirements.

Public Opposition or Opinions: There was no opposition to the project expressed at the public hearing. The city did not report any opposition expressed at any of the public meetings.

Coordination and Documentation with Other Agencies and Special Interest Groups:

Planning Document: Wastewater Treatment Plant and Collection System Improvements, Collection System Master Plan, January 2014

Prepared by: Black & Veatch

Supplemental Planning Material:

Sewer Condition Assessment, February 2010, CH2MHill, Inc.
Prioritized Capital Improvement Program, April 2010, CH2MHill, Inc.
Design Memo, West Stolley Park and Engelman Road Sewer Extension; dated March 27, 2017, Olsson Associates.
Report on Revenue Requirements, Cost of Service and Rates for Wastewater Service, October 2013, Black & Veatch

Federal: US Fish and Wildlife Service
USDA Natural Resources Conservation Service

State: Nebraska Department of Environmental Quality
Nebraska Game and Parks Commission
Nebraska Natural Resources Commission
Nebraska State Historical Society
Nebraska Health & Human Services

Local: Grand Island City Council

Consulting Engineers: Olsson Associates

Public Groups: None

- G. Positive Environmental Effects to be realized from the Proposed Project:** The project will reduce inflow and infiltration (I/I) into the City's collection system resulting in fewer sanitary sewer overflows and sewer backups with potential public health impact. The groundwater pollution in the area will be decreased by elimination of substandard onsite systems. Lift station replacement will improve collection system operation and maintenance. Finally, treatment costs decrease as a result of reduced flows to the treatment plant.
- H. Reasons for Concluding there will be No Significant Impacts:** Review of the Collection System Master Plan and other engineering reports, agency comment letters, and supporting documents indicate that the proposed projects will result in environmental benefits with no significant negative impacts. Little or no farmland is being taken out of production by construction but this project; although, the project will promote development and thus indirectly result in land use changes. Portions of the projects are located in the flood plain but they will have no direct impact on flood flows. No adverse impacts to critical habitats are anticipated. Timing of construction will be addressed in the project specifications to minimize impacts to endangered species. No known historical or archaeological sites will be impacted. The projects will meet Nebraska Department of Health & Human Services Title 179 regulations. The projects were planned to ensure that no segment of the community's population is impacted disproportionately from related effects.

Reviewing Engineer

Date

FINDING OF NO SIGNIFICANT IMPACT DISTRIBUTION LIST
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(Public Information Only not for Public Notice)

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NATURAL RESOURCES DISTRICT:
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Central Platte NRD
215 Kaufman Avenue
Grand Island, NE 68803

ATTACHMENT No. 1



<p>PROJECT NO: 016-3059 DRAWN BY: BJF DATE: OCTOBER 26, 2016</p>		<p>OLSSON ASSOCIATES</p>	<p>201 East 2nd Street Omaha, NE 68102-1072 TEL 402.334.8750 FAX 402.334.8752</p>	<p>FIGURE 5</p>
<p>PUMPING OPTION 2 - NEW L.S. 11 & PUMP TO CUSTER AVE. AND FORREST ST. GRAND ISLAND, NEBRASKA</p>				

ATTACHMENT No. 2



SANITARY SEWER TAP DISTRICT 540T - 15" TO WESTPARK PLAZA
SANITARY SEWER PROJECT 2017-S-3 - 21" TOWARD ENGLEMAN

Central Nebraska Regional Airport Sanitary Sewer

Legend

-  Public Lift Station
-  Private Lift Station
-  Public Manhole (In Service)
-  Private Manhole (In Service)
-  Private Manhole (Retired In Place)
-  Public Force Main
-  Private Force Main
-  Public Gravity Main (In Service)
-  Private Gravity Main (In Service)
-  Private Gravity Main (Retired In Place)

