

ENVIRONMENTAL ASSESSMENT DOCUMENT

A. Project Identification:

Applicant: City of Weeping Water
Project No.: D311608
City: Weeping Water **County:** Cass **State:** NE
Total Project Amount: \$700,000
DWSRF Loan Forgiveness: \$140,000
DWSRF Loan Amount: \$560,000

B. Community Description:

Location: Weeping Water is located in eastern part of Nebraska, situated south of the City of Omaha.

Population: The 2010 census population of Weeping Water is 1,050.

Current Water System Facilities: The City's public water system (PWS) consists of three municipal wells, a 320,000 gallon water storage tank with booster pumping to the distribution system. The City's existing wells will all exceed 40 years in age by the time the project is constructed, in excess of the average expected life of a municipal supply well in the State, and have experienced fluctuating levels of Nitrates, with recent monitoring recorded levels as high as 9.22 mg/L.

- C. Project Description:** In October 2014, the City's Engineer completed a Design Report that evaluated the siting of the proposed supply well. From that evaluation of projected water needs, the new well will be connected to the existing supply wells to allow for blending and will establish a new primary water source for the community. The recent nitrate monitoring results supports the recommendation in the in the report that Weeping Water construct a new water well for blending.

D. Alternatives Considered:

Three alternatives studied were:

1. Water Treatment through Ion Exchange or Reverse Osmosis; or
2. Interconnection with a nearby PWS; or
3. Blending Well with Transmission Main.

Evaluation and Selection of the Alternative: Both Ion Exchange and Reverse Osmosis treatment processes were evaluated in the engineering reports, in part as a long-term solution should regional nitrate levels continued to increase. However, treatment was ruled out as blending with a new well is more cost effective. Regionalization was

determined to not be practicable as the nearest system that could meet the supply needs of Weeping Water, is a consecutive system that purchases its' water supply from a system with a treated water supply. Thus the regionalization alternative was more costly than the treatment alternatives.

Test Hole data from the well site showed a Nitrate level of 0.592 mg/L, allowing blending to be considered a feasible alternative. Further, the Lower Platte South Natural Resources District (LPSNRD) indicated that the proposed well site is situated within a Community Water System Protection Area, wherein the NRD has adopted additional rules and regulations dealing with nitrogen management and a best management practice cost-share to help address nitrate concerns.

The City may also consider sealing the annular space of their existing supply wells depending upon the outcome of the research work being performed by State's Annular Seal Task Force. This would involve the pressure injection of a cement based grout into the existing space, in an attempt to limit the level of nitrates being pulled into the screened interval of the existing wells. The results of the on-going study may be able to determine whether this type of well rehabilitation would be successful in Weeping Water's existing wells.

E. Environmental Impact Summary:

Primary:

Construction: Temporary impacts caused by construction include noise and dust, a limited potential for soil erosion, and fuel/oil spills. The City will make application to the Lower Platte South Natural Resources District for a well construction permit. The new well will be registered with the Nebraska Department of Natural Resources. Review and approval for a construction permit will be required from the Engineering Services Program of the Nebraska Department of Health and Human Services (DHHS).

Environmental: The construction contracts will require that the contractors return the area to its original or better condition. The wellhouse will occupy a very small area of land (<1,500 square feet) and will have little, if any effect on area species. All of the land area to be disturbed during construction is City owned and was previously disturbed through normal farming practices.

The proposed project was reviewed by numerous Federal and State agencies for environmental impacts. The only responses received indicated that the project would have no effect and the well site is outside of the regulated floodplain.

Financial: An application for a DWSRF loan has been received for \$700,000 to fund the system improvements. The City is eligible for a 20-year loan with an

interest rate of 2% plus an administrative fee of 1% on the outstanding principal balance assessed annually. Further, Weeping Water qualifies for 20% of loan forgiveness State Fiscal Year 2016 program criteria. Therefore, the projected annual DWSRF Debt Service (including 10% coverage) is estimated at \$43,618. The revenues from City's water utility will be dedicated to repay the loan. Weeping Water's current water base rate for a typical residential connection is \$15.75 per month, with a \$1.58 use charge for every 748 gallons of water furnished. That equates to a water bill of ~\$32.50 per month, based on a common household water use of 8,000 gallons. With 500 active service connections, household rates may need to be raised \$7.27 to address the new debt service, to approximately \$40 per month. Following construction, Weeping Water will make a final assessment of revenues and cost to determine what rate adjustments are necessary.

Secondary:

Population Impacts: The blending well is not needed for future growth as the community has a relatively stable population, but rather to allow the PWS to maintain compliance with the drinking water standard for Nitrates.

Land Use and Trends: The location of the proposed blended well is on land owned by the City. The wellhouse will take up little land in an area historically farmed. The well site has been approved by the DHHS. In addition, all new water mains will be placed below ground at depths that will not interrupt any planned practices. The Nebraska State Historical Society noted that the project will have no effect for archeological, architectural, or historic properties.

Environmental: The proposed project will have no effect on the availability of water quantity in the area. The minimal amount of solid waste generated by the project will be disposed in a licensed landfill. No safety, vibration, noise or aesthetic considerations were identified other than the normal noise and disruptions associated with building and water main construction.

Environmental Justice: The project will not produce any environmental justice concerns. All structures will be placed in areas previously disturbed or on City owned property, and the services provided by the proposed project will be available to everyone in Weeping Water, equally. No segment of the community's population is impacted disproportionately from related effects.

Mitigation measures necessary to eliminate adverse environmental effect:

Proper construction techniques will be utilized to minimize soil erosion and other potential impacts of construction. Traffic flow may be affected by construction when water main construction is being done along the City road right-of-ways; however, safety control measures (i.e., signs, etc.) will be implemented. An NPDES Construction

Stormwater permit for runoff associated with construction activity and a Stormwater Pollution Prevention Plan will be required by NDEQ for this project if more than one acre of land is disturbed. The Community can designate the General Contractor as the authorized representative on the stormwater permit notice of intent submitted to the NDEQ. Authorization of stormwater runoff from the construction activity must be in place prior to commencing construction.

Irreversible and irretrievable commitment of resources: The resources committed to the project include the equipment, materials and energy used in construction.

F. Measures Taken to Insure Environmental Soundness:

Public Involvement: A Public Hearing was held November 9, 2015, with 40 days advanced posted notice. A presentation of the proposed project was made by the Engineer, including the project scope, costs, financing and schedule.

Public Opposition or Opinions: No comments were made by the public.

Coordination and Documentation with Other Agencies and Special Interest Groups:

Facility Planning: Water Treatment Evaluation for Nitrate Removal, City of Weeping Water, Olsson Associates, April 2012
Municipal Water Well Siting and Design Study, City of Weeping Water, Olsson Associates, October 2014

Federal: None

State: Nebraska Department of Health and Human Services, Division of Public Health, May 28 and June 30, 2014, letters
Nebraska State Historical Society, September 30, 2015, letter

Other: Lower Platte South Natural Resources District, October 13, 2015, letter

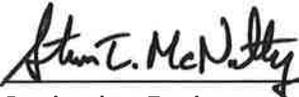
Consulting Engineers: Olsson Associates, Lincoln, NE

Public Groups: City of Weeping Water Residents

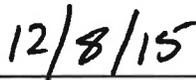
G. Positive Effects to be Realized from the Proposed Project: The project will allow Weeping Water to maintain compliance with the Nebraska Safe Drinking Water Act and ensure future water availability. Test hole data shows that the proposed blending well should meet all drinking water standards per Title 179, Regulations Governing Public Water Supply Systems. As such, the project is considered reasonable, not contrary to

conservation or the public welfare and is a beneficial use of resources by the City of Weeping Water.

- H. **Reasons for Concluding there will be no Significant Impacts:** Review of the engineering reports and supporting information indicates that the proposed project will result in no significant impact on the environment. Federal and State agencies reported no impact will result to historical resources. All necessary permits for construction will be obtained from the appropriate agencies (i.e., NDEQ, NRD, etc.), if necessary.



Reviewing Engineer



Date

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LOCAL NEWSPAPER
The Plattsmouth Journal
410 Main Street
Plattsmouth, NE 68048

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PO Box 83581
Lincoln, NE 68501-3851

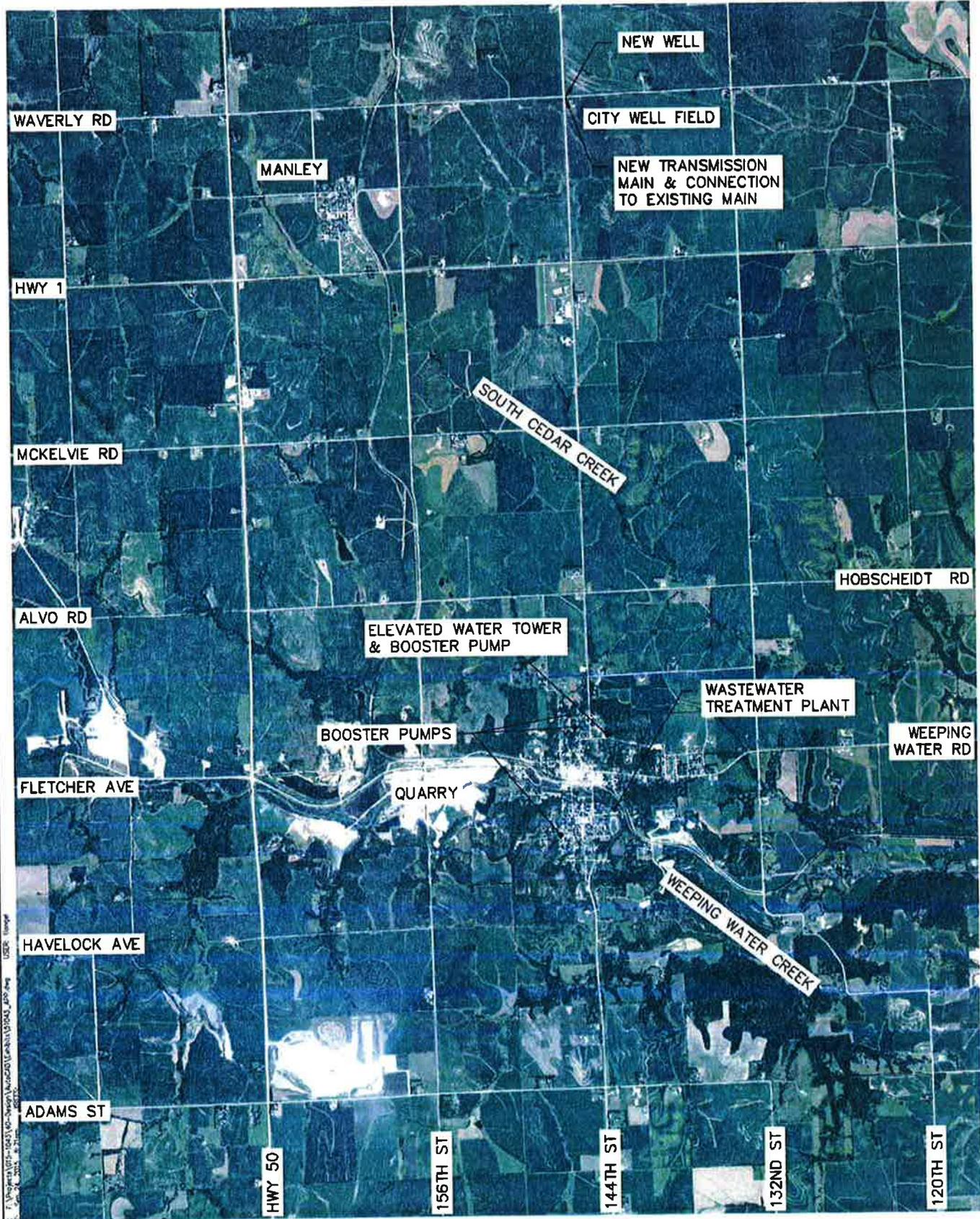


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PROJECT NO: 015-1043
 DRAWN BY: TJL
 DATE: 9/24/2015

PROJECT LOCATION MAP

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