

ENVIRONMENTAL ASSESSMENT DOCUMENT

A. Project Identification:

Applicant: Raven's Nest Homeowners Association
Project No.: D311621
City: Raven's Nest Homeowners Association **County:** Cass **State:** NE
Total Project Amount: \$421,000
DWSRF Loan: \$421,000
DWSRF Loan Forgiveness: \$0

B. Community Description:

Location: The Raven's Nest Subdivision is located in southeastern Nebraska, to the north of Cedar Creek.

Population: The reported population of Raven's Nest Subdivision is 53.

Current Water System Facilities: The HOA's public water system (PWS) consists of two municipal wells (#1 and #2), no storage, and an unmetered distribution system. An Administrative Order is in effect for the PWS for failing to comply with Siting and Design Standards. Wells #1 (1999-1) and #2 (2001-1) were constructed in 1999 and 2001 respectively. A third well (Well #3) was connected to the system but unused, and subsequently disconnected from the system in May 2017. Well #2 was also disconnected in May 2017 as per the direction provided in the Administrative Order because of shallow depth and potential contamination from surface water. The system is currently served by Well #1 with a supply capacity of 55 gallons per minute with pressure maintained by a variable frequency drive. Routine monitoring of the supply indicates no water quality concerns and the subdivision has had no complaints regarding the aesthetics of the water.

C. Project Description: In November 2017, the Subdivision's Engineer drafted a Preliminary Engineering Report that evaluated Raven's Nest water system needs. The report recommended construction of a new water supply well and transmission main, modification of Well #1 to meet Title 179 requirements, addition of new pressure storage tank, addition of an emergency power hookup and installation of water meters. Future work recommended for the PWS includes addition of a water storage facility and pumping station and distribution system improvements including upsized water mains, valves and hydrants.

D. Alternatives Considered:

Two alternatives studied were:

1. Upgrade the Existing System; or
2. Alternative New Water Source.

Evaluation and Selection of the Alternative: The Raven's Nest PWS is currently under an Administrative Order to bring the system into compliance with drinking water standards. The lone water supply Well #1 (1999-1) serving the system can currently meet the water demands of the system without irrigation of landscaping but requires upgrades to meet Title 179 standards and will not meet the future needs of the development as new dwellings are constructed. Additionally, there is no backup well to meet the subdivision needs in the event the existing well ceases operation and there is no storage. Two alternatives were considered to bring the PWS into compliance with drinking water regulations: 1) Upgrading the Existing System and 2) Alternative New Water Supply. A no-action alternative was not considered since this alternative would not satisfy the requirements of the Administrative Order.

The first alternative, upgrading the existing system, would involve construction of a new water supply well to replace the lost capacity of Well #2 and increase the overall production capacity of the system, modify the existing Well #1 to bring it up to equivalent Title 179 design standards, and construction of a hydropneumatic tank to meet minimum storage requirements. Provision for a portable standby generator hookup to operate wells during power outages would be provided. These components of the first alternative would bring the PWS into compliance and satisfy the Administrative Order. The replacement well would meet future needs of the subdivision and provide for irrigation of landscaping. Future items included in the alternative includes upsizing the 3-inch diameter water mains to 6-inch diameter water mains and adding more storage volume.

The second alternative, an alternative new water supply, would involve connection to Otoe County Rural Water District No. 3, which serves portions of Otoe and Cass counties including some municipalities. The Rural Water District extended a formal offer including extension of their system to serve the subdivision but declined to absorb the Raven's Nest distribution system into their system. Raven's Nest would continue to operate as an independent consecutive system and pay for water usage. The connection would bring the system into compliance.

Based on an analysis of available options, the Preliminary Engineering Report recommended the first alternative, upgrading the existing system, with a new well, modification of the existing well, and addition of storage to be completed as soon as possible to satisfy the Administrative Order. This alternative has a lower capital cost and it is anticipated operation and maintenance costs will be lower since there will be no monthly water purchase costs from a rural water provider.

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 Subdivision will submit an 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.

Environmental: The construction contracts will require that the contractors return the area to its original or better condition. Wellhouses will occupy a very small area of land (<1,500 square feet) and will have little, if any affect on area species. All of the land area to be disturbed during construction will be owned by the Raven's Nest Subdivision or within road right-of-ways. Based on a review of the available mapping, no portion of the project lies within the 100-year flood plain.

The proposed project was reviewed by numerous Federal and State agencies for environmental impacts. Several responses indicated that the project would have no adverse effect, had no objection or noted that the project was not subject to that agency's authority. Two responses raised concerns that will be addressed during final design and construction, or were resolved in the preliminary project design. The Nebraska State Historical Society (NSHS) noted that the proximity of the project to multiple previously identified archeological sites and the project areas' immediate proximity to stable water sources will require areas slated for ground disturbing activities associated with construction be surface surveyed and subsurface tested by a professional archeologist or archeological firm prior to project start.

The new wells will be registered with the Nebraska Department of Natural Resources and a new well construction permit will be required from the Lower Platte South Natural Resources District. A National Pollutant Discharge Elimination System Construction Stormwater permit will be required by NDEQ if more than one acre of land is disturbed. The well will be installed on land acquired by the HOA.

Financial: An application for a DWSRF loan has been received for \$421,000 to fund the system improvements. The Village 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. Therefore, the projected annual DWSRF Debt Service (including 10% coverage) is estimated at \$32,187. The revenues from

Village's water utility will be dedicated to repay the loan. Raven's Nest's current water rate for a typical residential connection is \$900 per year. That equates to an average water bill of \$75 per month. In addition to the annual water rate, a \$750 annual assessment for each lot (occupied or unoccupied) is currently in effect to cover the debt service for water system capital improvements.

Secondary:

Population Impacts: The replacement well is needed to provide a backup well to ensure the sustainability of the water system. The well is also needed for additional users as the development builds out, so it is being reasonably sized for future growth.

Land Use and Trends: The new well will be placed on land acquired by the Subdivision. The new well site has been approved by the Department of Health and Human Services. In addition, all new water mains will be placed below ground at depths that will not interrupt any planned practices.

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 water well and main construction.

Environmental Justice: The proposed project will not produce any environmental justice concerns. All structures will be placed in areas previously disturbed or on Subdivision owned property, and the services provided by the proposed project will be available to everyone in the Raven's Nest Subdivision, 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 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 Subdivision 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. The areas slated for ground disturbing activities will be surveyed by an archeologist prior to construction per the request of the NSHS.

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: The Raven’s Nest HOA annual meeting was held on November 5, 2017. Written notice of the meeting was provided to the lot owners via email at least 10 days prior to the meeting as required by the Raven’s Nest covenants for approval of special assessments for capital improvements. A quorum of HOA members was present at the meeting (79% members present). The proposed project was presented and a vote by HOA members was held on two matters, approval of authorization to borrow money for water system improvements and special assessment on each lot to repay loans related to water system improvements. Both matters were approved with more than the three-fourths votes required by HOA covenants to approve special assessments.

Public Opposition or Opinions: A quorum of HOA members was present at the November 2017 annual meeting (79% members present). The proposed project was presented and a vote by HOA members was held on two matters, approval of authorization to borrow money for water system improvements and special assessment on each lot to repay loans related to water system improvements. Both matters were approved with more than the three-fourths votes required by HOA covenants to approve special assessments.

Coordination and Documentation with Other Agencies and Special Interest Groups:

Facility Planning: Preliminary Engineering Report, Raven’s Nest Subdivision, Olmsted & Perry, Consulting Engineers, November 2017

Federal: U.S. Department of Agriculture, March 19, 2018, email
Corps of Engineers, March 9, 2018, letter

Tribal: Tribal Historic Preservation – Cheyenne and Arapahoe Tribes, March 7, 2018, letter

State: Lower Platte South NRD, March 20, 2018, letter
Nebraska Department of Natural Resources, March 7, 2018, letter
Nebraska State Historical Society, March 14, 2018, letter
Nebraska Games and Parks Commission, March 7, 2018, letter

Consulting Engineers: Olmsted & Perry, Consulting Engineers, Omaha, NE

Public Groups: Raven’s Nest Subdivision Residents

- G. Positive Effects to be Realized from the Proposed Project:** The project will allow Raven's Nest to return to compliance with the Nebraska Safe Drinking Water Act and ensure future water availability. Test hole analytical results show that the proposed replacement well should meet all drinking water standards per Title 179, Regulations Governing Public Water Supply Systems. The well and meter placement project phases achieve the goals of the U.S. Environmental Protection Agency's Drinking Water Infrastructure Sustainability Policy for the upgrade and/or replacement of existing infrastructure. As such, the project is considered reasonable, not contrary to conservation or the public welfare and is a beneficial use of resources by the Raven's Nest Subdivision.
- H. Reasons for Concluding there will be no Significant Impacts:** Review of the draft engineering report and supporting information indicates that the proposed project will result in no significant impact on the environment. The program will ensure that the NSHS requirement for surface and subsurface archeological survey is completed. Federal and State agencies reported no impact will result to threatened and endangered species or water resources. All necessary permits for construction will be obtained from the appropriate agencies (e.g., NDEQ, etc.), if necessary.



Reviewing Engineer

5/16/2018

Date

**FNSI DISTRIBUTION LIST
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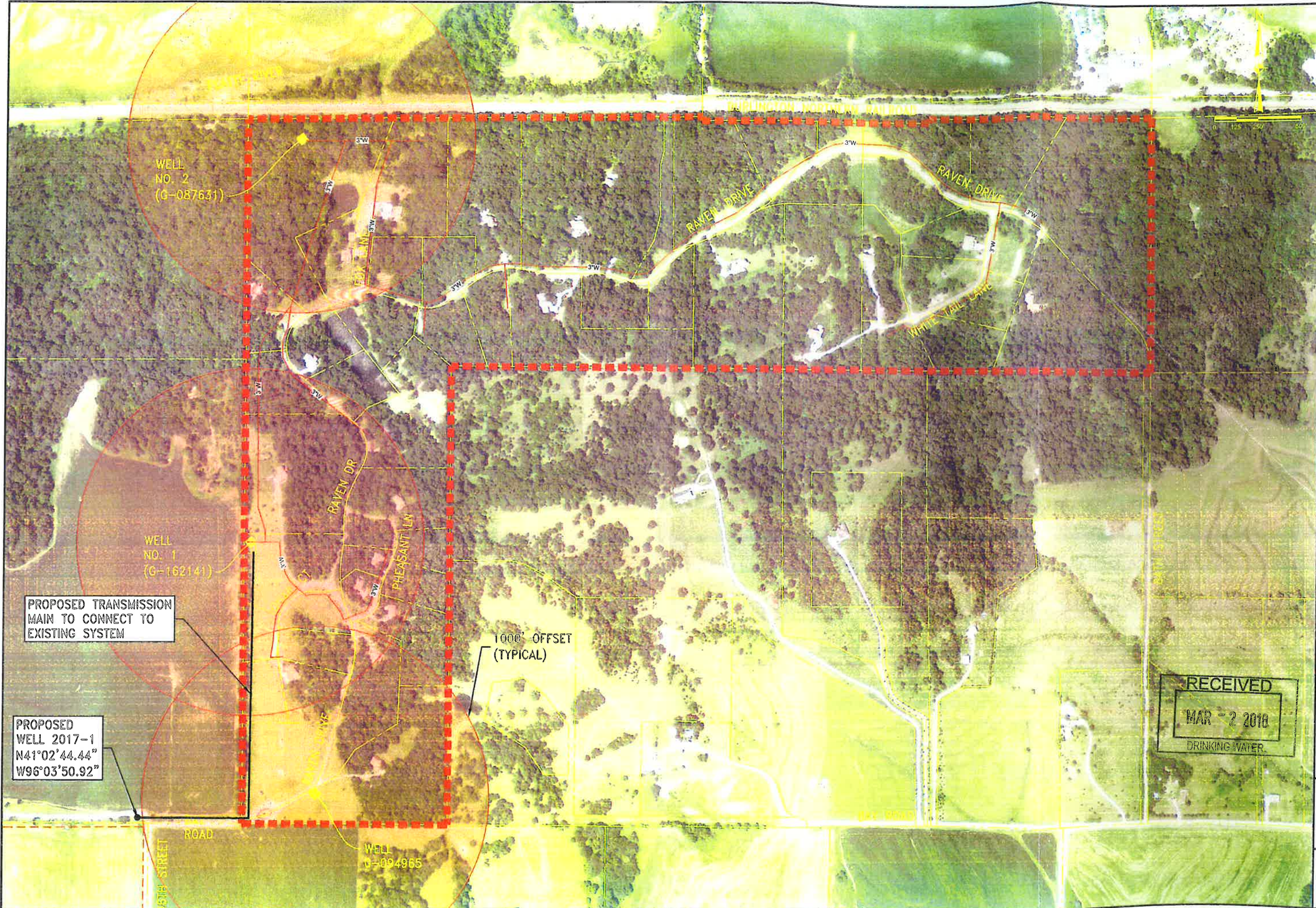
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Omaha, NE 68114-4700

LOCAL NEWSPAPER
Plattsmouth Journal
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Plattsmouth, NE 68408

LOWER PLATTE SOUTH NATURAL RESOURCES
DISTRICT
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PROPOSED TRANSMISSION MAIN TO CONNECT TO EXISTING SYSTEM

PROPOSED WELL 2017-1
N41°02'44.44"
W96°03'50.92"

1000' OFFSET (TYPICAL)

RECEIVED
MAR - 2 2018
DRINKING WATER

SHEET NO.	1 of 1	PROJECT NO.	15093	DATE	NOVEMBER 2017
<p>FIGURE NO. 2 PROPOSED WELL SITE IMPROVEMENTS</p>		<p>RAVEN'S NEST SUBDIVISION LOUISVILLE, NEBRASKA</p>			
<p>REVISIONS</p>		<p>OLMSTED & PERRY CONSULTING ENGINEERS INC. 10730 PACIFIC STREET SUITE 232 OMAHA, NEBRASKA</p>			