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STATE OF NEBRASKA

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CLEAN WATER STATE REVOLVING LOAN FUND PROGRAM

FINDING OF NO SIGNIFICANT IMPACT

TO: All Interested Citizens, Government Agencies and Public Groups

In accordance with the Nebraska Clean Water State Revolving Fund environmental review process, which is based on the National Environmental Policy Act, an environmental review has been performed on the proposed agency action below.

This information reviews the environmental impact likely from a project. This project is planned to be federally funded through your tax dollars; therefore, you are entitled to take part in its review. If you have concerns about the environmental impact of this project, please provide them at this time. The Nebraska Department of Environmental Quality encourages public input in this decision-making process.

PROJECT NAME: New Complete Retention Lagoon
Wastewater Treatment Facility
Mead, Nebraska

CWSRF PROJECT NUMBER: C317854

TOTAL PROJECT AMOUNT: \$1,822,196
CLEAN WATER STATE REVOLVING LOAN AMOUNT: \$976,836
CWSRF LOAN FORGIVENESS: \$100,000
NDEQ SMALL TOWN GRANT: \$250,000
OTHER FUNDING: \$495,360 Village Funds for Land Acquisition

The Village of Mead has applied for funding for the above-referenced project through the Clean Water State Revolving Fund (CWSRF) program administered by the Nebraska Department of Environmental Quality (NDEQ). This project is included on the Priority List in the CWSRF State Fiscal Year 2013 Intended Use Plan and ranked at 50 points. Based on supporting documentation on file with the NDEQ, the City was determined to be eligible for a CWSRF loan with corresponding loan forgiveness capped at \$100,000 of project costs and small town grant capped at \$250,000.

The Village of Mead is located in Saunders County in southeastern Nebraska. The current population (2010 census) served by Village sewer is 569. The community has generally grown in population over the past half century and but the past 10 years the population has remained level. A 20 year projection by the Consultant is a population growth to 638 by 2032, which allows for a 12% growth factor in design.

The community currently has a separate sanitary sewer system, main lift station, and an activated sludge mechanical plant originally built in 1956 and expanded in 1983. The community received a Notice of Violation from NDEQ on July 2, 2012. The existing plant has surpassed its design life and is in need of major rehabilitation to meet their current NPDES discharge limitations as found in their NPDES Discharge Permit No. NE0024309. The engineer concluded that it was more desirable to abandon the existing plant and construct a complete retention lagoon system. Moving to a complete retention lagoon system would exempt Mead from a NPDES permit and a certified operator plus trim their annual operation and maintenance costs in half. The proposed 2-cell lagoon system will be sited 1/3 of a mile east of the existing mechanical plant. The Community's Consulting Engineer has used a design flow of 60,215 gpd to size the system. Using a two cell

system design at 6 foot depth and factoring in climatic averages requires a total water surface area of 26 acres. The project will be complete with a native clay liner, diversion structure, lift station improvements and force main, plus seeding and fencing. The constructed 9 inch thick clay liner will be tested for permeability in accordance with Title 123 of the Department and be limited to a maximum seepage of 1/8 inch per day.

This project is eligible for a \$250,000 NDEQ small town grant by exceeding the qualifying CWSRF sewer debt service of \$15.00 per month and greater than \$2.00 reduction in monthly sewer rate. The community also qualifies for \$100,000 in loan forgiveness due to a median household income (MHI) survey conducted by Rural Water Association which established \$42,000 as Mead's current MHI. This grant and loan forgiveness will be matched by \$1,256,648 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 Mead's sewer user charge is estimated as follows. Mead's current metered residential sewer user charge for ¾" meter is \$20.00 base plus \$1.00 per 1,000 gallons winter water use per month or \$28.00 per month for 8,000 gallons water use. The Village of Mead has 232 sewer connections. The projected monthly user charge will need to be increased to an average of \$26.23 a month to cover 20 year SRF debt service and \$12.84 O&M costs or a projected total of \$39.07 average monthly sewer rate. In addition, non-SRF debt retirement for the land costs should be added to the projected monthly sewer rate.

The Village conducted a public hearing on this project on July 23, 2013 having the required 30 day advertised notice. Twenty one people attended the hearing and discussion was conducted on the project. The Engineering Consultant presented the project and the associated impact to the sewer rates. There was concern expressed as to the funding of the project at the public hearing. Eight bids had been opened on the project July 17, 2013 and the project was awarded after the public hearing closed to the low bidder.

The Engineering Consultant sent out ten requests for comment to related state and federal agencies, eight responses were received. No filling in the waters of the U.S. or Johnson Creek will be done with the project. The Natural Resource Conservation Service reviewed the area of the proposed lagoons and determined that the site involved prime farmland. Approximately 45 acres of farmland will be acquired for the new lagoon system and buffer area. A Farmland Conversion Impact Rating was requested by NRCS and was completed but due to the scoring and acres required for the site being a small percentage of the total prime farmland in Saunders County a minimal level of consideration is required and the project was cleared of Farmland Protection Policy Act concerns. The Nebraska State Historical Society had no recorded historic resources at the proposed new lagoon site nor need for a survey. The proposed lagoon system is out of the 100-year flood plain. An irrigation well will be abandoned on the proposed lagoon site and the Lower Platte North Natural Resource District (LPNNRD) and the Nebraska Department of Natural Resources notified.

The U.S. Fish and Wildlife Service (USFWS) requested that a depletions analysis be conducted on the net effect in acre-feet that may be depleted to the lower Platte River on an average annual basis over the life of the project. The consulting engineer determined that that the new complete retention lagoon system would have a 35.2 acre-feet/year depletions over the life of the project. But due to Mead's being located in the upstream drainage basin of Johnson Creek Reservoir which controls flows to the lower Platte River the Consultant concluded that the project would have a negligible impact to the flows in the Platte River and be unlikely to adversely affect any endangered or threatened species.

The LPNNRD has been contacted to assist in developing water or monetary offset options as the LPNNRD is in the process of developing a Integrated Management Plan for the lower Platte River. A USFWS requirement to comply with the Migratory Bird Treaty Act will be included in the project specifications. The Corps of Engineers requested a wetland survey be done on the proposed lagoon site. Olsson Associates had conducted a wetlands survey in November 2012, and delineated one wetland which the proposed project will avoid in its entirety. Olsson's responded to the Corp that no wetlands will be impacted as the project will avoid

disturbance to the east ditch line, therefore no permit application will be submitted to the U.S. Army Corps of Engineers.

A native clay liner is being proposed for the new lagoon system having an estimated 1/24 inch seepage permeability. Depth to ground water at the lagoon site was determined by soil borings. Depth to ground water is approximately 15 to 20 feet. Greater than 4 feet of separation from the bottom of the lagoon cell's liner and the top of high seasonal ground water will be attained as required by NDEQ regulations. A construction storm water permit will be required by this Department since more than one acre of land is being disturbed. The Community will need to file a storm water permit notice of intent with the Department.

The environmental impact will be positive, as water quality should improve for Johnson Creek in the Lower Platte River Basin. No significant negative impact has been identified. Consequently, a preliminary decision has been made that an EIS will not be prepared.

This action is taken on the basis of careful review of the facility plan, the environmental assessment and other supporting data, which are on file in the office of the Nebraska Department of Environmental Quality. These are available for public review upon request. A copy of the environmental assessment is attached. The NDEQ will not take any administrative action on the project for at least 30 calendar days from the date signed. Persons having a comment on this determination are encouraged to submit directly to Tom Fuenning of the NDEQ (email tom.fuenning@nebraska.gov or phone (402) 471-4989) during this period.

Signed this 24th day of September, 2013.

Sincerely,



Michael J. Linder
Director

MJL/tsf

Attachments: Environmental Assessment
Distribution List
Maps

ENVIRONMENTAL ASSESSMENT DOCUMENT

A. Project Identification:

Applicant: Village of Mead **Project No.** C317854

Village: Mead **County:** Saunders **State:** Nebraska

Total Project Amount: \$1,822,196 **NDEQ Grant:** \$250,000 **NDEQ Loan Forgiveness:** \$100,000

SRF Loan Funds: \$976,836 **Other Funds:** \$495,360 Village Funds for land acquisition

B. Community Description:

Location: Mead is located in the Lower Platte River Basin in the southeast portion of the State. The community is accessed on State Hwy 92.

Population, Present and Projected, and Design Year: The 2010 census population of Mead is 569. The projected population for the design year of 2032 is 638 people.

Current Methods of Waste Treatment: The existing facility consists of a submersible wet well type influent lift station with communitor, aeration basins, rectangular final clarifier with travel lift, aerobic digester, effluent lift station, control/blower/lab building, and emergency generator constructed originally in 1956 and expanded in 1983. Ultraviolet disinfection was added in 2008 with seasonally disinfected effluent discharged to Johnson Creek in the Lower Platte River Basin. Sludge is stored in aerobic digester and ultimately disposed by regular hauling to the City of Wahoo Wastewater Treatment Facility. Influent flow is estimated by hour meters on the influent pumps and effluent pumps. Estimated flows were analyzed in a 2011 Facility Plan by JEO and were determined to be inaccurate. The 2011 Facility Plan estimated average daily flow of 59,800 gallons per day. The wastewater flow record was compared to rainfall events and did show significant infiltration and inflow (I&I). The Village did smoke testing in response to the Facility Plan and did not find any sources contributing to I&I, manholes in lower areas may be the source. A recent 2.5 inch rain caused some hydraulic issues but the influent lift station kept up. The study and the current engineer concluded that there is not sufficient data to conclude the I&I source and may be difficult to find. The ground water levels are lower than the sewer mains and there is no history of basement backups. At this time it appears that the collection system is subject to infiltration or inflow but a detailed sewer system evaluation was not conducted.

C. Project Description:

Purpose: (What does project hope to achieve); The project will change the wastewater treatment facility from an continuously discharging activated sludge mechanical plant to a non-discharging complete retention lagoon system. The complete retention lagoon would exempt Mead from NPDES permit discharge requirements.

Type: The lagoon system acreage will be a total of 26 water surface acres. The system has been sized for a 20-year detention time (using 1/24 inch per day seepage). The cells will have a 6 foot operating depth with 2 foot of freeboard having dike interior side slopes of 4:1. Lift station improvements with a new 4-inch PVC force main will be constructed. The lagoons will be complete with control piping, riprap for erosion protection, seeding, fencing and a crushed rock access road.

Design Factors: The current consultant installed a temporary flow meter in the influent lift station in the fall of 2012 and when compared against the hour meters derived a correction factor which could be applied to the hour meters flow records. This produced a total design flow of 60,215 gallons per day (gpd), factoring in 12% growth and a future projected Water Treatment Plant backwash flow. The average daily design per capita influent flow is 94 gallons per capita, with a peak daily flow of 236,043 gpd using a peaking factor of 3.92, plus a 20% factor of safety of infiltration and inflow, derives a peak hourly flow of 197 gallons per minute. The current lift station influent pumps are sized at 100 gpm. The new pumps will be sized at 197 gpm and in the

Engineer's opinion adequate to handle I&I flows. Design organic load is averaged at 115 lbs CBOD per day (0.18 lbs/person/day). For design suspended solids loading 128 lbs/day will be used or (0.20 lbs/person/day) for TSS. For the lagoon sizing factors, design seepage was estimated at 1/24 inch per day, net lake evaporation 42 inches per year, rainfall of 28 inches per year, 20 year detention time, 6-foot maximum depth for the single 17.5 ac. primary cell and the single 8.5 ac. secondary cell, each of with a 2-foot minimum depth and 2-foot of freeboard.

Reserve Capacity: A 20-year population increase is estimated at 69 people (12% increase). The population has been level for the past 10 years but a 10% increase occurred from 1990 to 2000.

Receiving Stream: The receiving stream has been Johnson Creek (segment LP2-10121) in the Lower Platte River Basin. The project will eliminate a discharge to Johnson Creek and therefore qualify for an exempt status from a NPDES permit.

D. Alternatives Considered:

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

1. Rehabilitation and expansion of existing mechanical, activated sludge treatment system
2. Constructing a New Sequencing Batch Reactor, Mechanical Treatment Plant
3. Constructing a Complete retention lagoon system
4. Constructing nine month storage lagoon system with center pivot land application

Reasons for Selection of Proposed Alternative: The complete retention lagoon alternative was selected due to this alternative being the lowest annual operation and maintenance cost of the four analyzed alternatives. A cost-effectiveness analysis was conducted on all alternatives equating the annualized equivalent cost including estimated annual O&M costs. This analysis concluded the complete retention as the highest annualized cost due to the highest capital construction cost but with the lowest operation and maintenance cost of the four alternatives. The Village selected the complete retention lagoon alternative due to the ease of operation, design life, no NPDES permitting, and lowest annual operation and maintenance cost.

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 the site. The existing mechanical plant will be demolished after the lagoons are put in service.

b. Environmental: Any negative impact due to disturbing 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 Community can designate the General Contractor as the authorized representative after providing the storm water permit notice of intent to the Department. Positive impact should be gained for the water quality of Johnson Creek a tributary of the Lower Platte River Basin. Based on a detailed Geotechnical Report on-site soils should be adequate for liner and berm construction. A 9 inch compacted clay liner will be constructed on the floor and sidewalls of the new lagoon to limit seepage to the NDEQ guideline of no more than 1/8-inch per day. U.S. Army Corps of Engineers requested a wetland survey. Olsson and Associates conducted the survey and delineated one wetland. A 0.01 acre wetland was identified by the Consultant in the drainage swale immediately east of the proposed lagoon system. No disturbance will be allowed of the swale or wetland as a 50 foot buffer will be maintained on either side of the centerline of the swale. No filling in the waters of the U.S. or Johnson Creek will be done with the

project.

c. Financial: The Village of Mead has 232 sewer connections. The current household sewer rate is a metered user charge system which for a ¾" meter is \$20.00 base plus \$1.00 per 1,000 gallons winter water use per month which for a typical 8,000 gallons household water use equates to \$28.00 per month sewer rate. The projected monthly user charge to fund this project will need to be an average of \$26.23 a month to cover 20 year SRF debt service with 10% coverage factor and \$12.84 O&M costs or a projected total of \$39.07 average monthly sewer rate. In addition, non-SRF debt retirement for the land costs should be added to the projected monthly sewer rate. A 1.5 percent, 20-year CWSRF loan for \$976,836 would have a debt service of \$73,017 per year which includes the 1 percent annual administrative fee on the outstanding principal balance and a 10% coverage factor for delinquencies and loss of users. The Village is eligible for a \$250,000 NDEQ small town grant, and \$100,000 CWSRF loan forgiveness which makes for a total NDEQ funding assistance of \$1,326,836.

2. Secondary

a. Population Impacts: No impact is expected on the population density but the project would serve the existing population and a 12% increase for the 20-year design.

b. Land Use and Trends: Minor impact is expected on the existing land use adjacent to the wastewater treatment system, approximately 45 acres of existing agricultural land would be taken from production. In addition, an existing well house and irrigation well currently found on the proposed lagoon site will be abandoned. The proposed site was designated as prime farmland by the Natural Resources Conservation Service. A Farmland Conversion Impact Rating Form AD-1006 was completed and submitted to USDA-NRCS for ranking purposes. The prime farmland conversion was scored and cleared of Farmland Protection Policy Act concerns.

c. Environmental: Other federal and state agency review 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 (NDNR) stated that the proposed lagoon system was out of the 100-year floodplain. There should be no impact related to floodplain management. An existing registered irrigation well is found on the proposed lagoon site. This well will be abandoned in accordance with Title 178 NAC 12 Water Well Decommissioning and the Lower Platte North NRD and NDNR notified. The U.S. Fish and Wildlife Service (USFWS) requested that a depletions analysis be conducted on the net effect in acre-feet that may be depleted to the lower Platte River on an average annual basis over the life of the project. The consulting engineer determined that that the new complete retention lagoon system would have a 35.2 acre-feet/year depletions over the life of the project. But due to Mead's being located in the upstream drainage basin of Johnson Creek Reservoir which controls flows to the lower Platte River the Consultant concluded that the project would have a negligible impact to the flows in the Platte River and be unlikely to adversely affect any endangered or threatened species. The LPNNRD has been contacted to assist in developing water or monetary offset options as the LPNNRD is in the process of developing a Integrated Management Plan for the lower Platte River. Also USFWS stated that if the construction could potentially result in the taking of protected migratory birds, under the MBTA Act a field survey would need to be conducted by a qualified biologist with the results provided to USFWS. 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 community'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 State requirements of a maximum of 1/8 inch per day seepage.

All dikes will be seeded with native grasses as soon as possible after construction is completed to control erosion in the area. 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. Net annual depletions of 35.2 ac-ft to the lower Platte River were determined by the consultant. If an offset is found to be necessary, the Village of Mead will work with the Lower Platte North Natural Resource District to see that it is provided.

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

F. Measure Taken to Insure Environmental Soundness:

1. Public Involvement: A public hearing was held on July 23, 2013 having the required 30-day advertised notice. Twenty one people were in attendance, which included the Village Board, staff and engineer. Discussion was held on the project with the impact to the sewer rates presented. The NDEQ CWSRF loan and grant funding availability were discussed and any environmental impacts as identified from other federal and state agencies.

2. Public Opposition or Opinions: No public opposition was noted at the July 23, 2013 public hearing.

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

- a. Facilities plan dated:** November, 2011, JEO Consulting Group, Lincoln
i. Updated Design Memorandum, March 25, 2012, Olsson Associates, Lincoln

Prepared by: JEO Consulting Group, then updated by Olsson Associates, Lincoln, NE

b. Federal:

- 1. U.S. Fish & Wildlife Service,** July 17, 2013 letter
- 2. Department of the Army, Corps of Engineers,** September 5, 2013
- 3. U.S. Dept. of Agriculture, Natural Resources Conservation Service,** June 19, 2013 email

c. State:

- 1. Nebraska Department of Natural Resources,** July 15, 2013 letter
- 2. Nebraska State Historical Society,** June 25, 2013 letter
- 3. Nebraska Department of Environmental Quality,** June 13, 2013 letter
- 4. Nebraska Game and Parks Commission,** August 19, 2013 email

d. Consulting Engineers: Olsson Associates, Lincoln, NE

e. **Public Groups:**

1. Village of Mead residents
2. Lower North Platte Natural Resource District, September 11, 2013 letter

G. Positive Environmental Effects to be Realized from the Proposed Project: Water quality of Johnson Creek should improve which would have a beneficial effect on fish and wildlife habitat. Recreational and agricultural use of the Lower Platte Basin will be benefited with improved water quality.

H. Reasons for Concluding there will be no Significant Impacts: No adverse impact occurs on wetlands, floodplain, or recorded historical resources. Net annual depletions to the lower Platte River were determined to be 35.2 ac-ft which may impact federally listed threatened or endangered species. This is a result of the effluent discharge to Johnson Creek from the existing mechanical plant wastewater treatment facility (to be abandoned) will be completely retained by the new lagoon system. The Lower Platte North Natural Resource District will work with the Village of Mead, if an offset is found to be necessary, to see that it is provided. 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 45 acres of prime farmland will be taken out of production. There should be no adverse impact on ground water or community growth patterns.

 Reviewing NDEQ Engineer 9/11/13 Date

FNSI DISTRIBUTION LIST
MEAD, NEBRASKA

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NATURAL RESOURCE DISTRICT

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Wahoo, NE 68066-0126

APPLICANT:

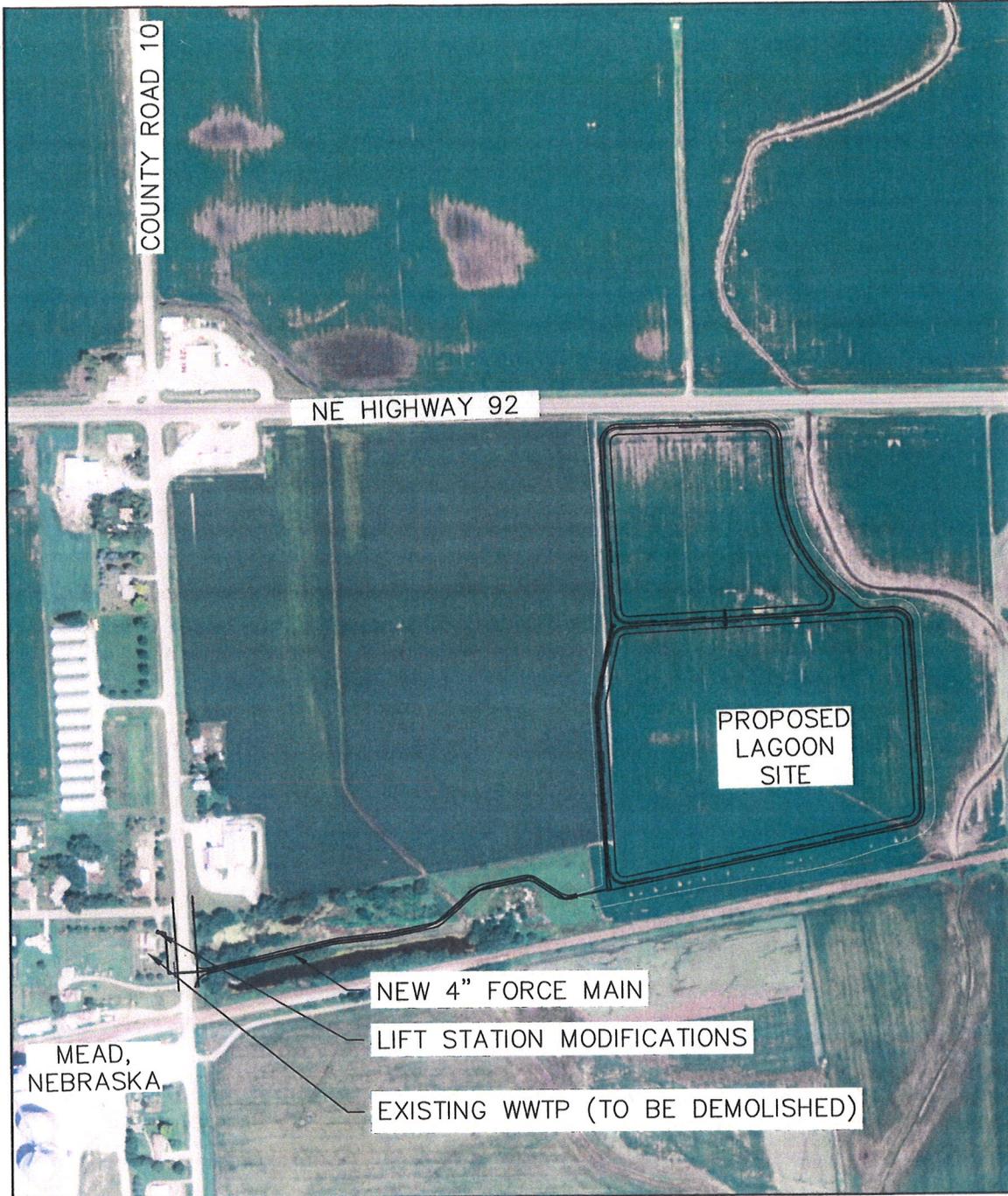
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Lincoln, NE 68508

LOCAL NEWSPAPER

Wahoo Newspaper
564 N. Broadway
Wahoo, NE 68066



DWG: F:\Projects\012-1895\FRM\Exhibits\Agency Letters Figure 1.dwg
 DATE: Jun 13, 2013 2:26pm
 USER: oklthom
 XREFS: 121891_PBASE

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| PROJECT NO: | 012-1895 |
| DRAWN BY: | OMK |
| DATE: | 04/03/13 |

**PROJECT LOCATION
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