

ENGINEER'S REPORT  
2019 FLOOD REPAIRS  
SOUTH NOBLE LAKE DRAINAGE DISTRICT  
POTTAWATTAMIE & HARRISON COUNTIES, IOWA

JULY 2020

 <p>TROY J. GROTH 14450</p>	<p>I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.</p> <p> TROY J. GROTH, P.E. #14450</p> <p><u>7/10/2020</u> DATE</p> <p>MY LICENSE RENEWAL DATE IS DECEMBER 31, 2021.</p> <p>PAGES OR SHEETS COVERED BY THIS SEAL: ALL</p> <p>_____ _____ _____</p>
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SUNDQUIST ENGINEERING, P.C.  
Consulting Engineers  
Denison & Onawa



**SUNDQUIST**  
ENGINEERING, P.C.

*"The Foundation of Excellence"*

July 10, 2020

Honorable Chairman and Board of Trustees  
South Noble Lake Drainage District  
227 South 6<sup>th</sup> Street  
Council Bluffs, Iowa 51501

Gentlemen:

In accordance with your instructions, I have investigated the condition of the improvements of the South Noble Lake Drainage District. The results of this investigation are contained in the following:

#### ENGINEER'S REPORT

**DISCUSSION:** High flows in the Missouri River beginning in the spring of 2019 and continuing throughout most of the year caused considerable damage to the ditches and levees of the South Noble Lake Drainage District. Now that flood waters have receded, the system needs to be repaired. Missouri River backwater caused significant sediment deposition in the Noble Lake Ditch. Also, high flows in the Missouri River overtopped and eroded levees along the ditch downstream and immediately upstream of the Vanman Levee.

As a result of the 2019 Missouri River flooding, a federal disaster declaration was issued for eighty counties in Iowa. Thus, the Federal Emergency Management Agency (FEMA) will be providing grants to public entities in these counties for repair of damage caused by severe storms and flooding. The South Noble Lake Drainage District has applied for a FEMA repair grant in an amount yet to be determined. FEMA pays 75% of the cost of approved repairs with the State of Iowa paying 10% of the cost. The remaining 15% is the applicant's responsibility.

A FEMA award has stipulations attached to its use. First, the repair project must be completed by September 23, 2020, or as extended, or FEMA can require the State of Iowa to recoup any expended Federal funds. Second, the grant is not discretionary and must be applied to the repair of damages outlined in the FEMA inspector's reports. The funds can be used for construction work, construction materials, and engineering services.

CONCLUSIONS: The 2019 Missouri River flooding caused extensive damage to the improvements of the South Noble Lake Drainage District. Damage consisted of deposition of sediment in the ditch and erosion of levees along the ditch. The District has applied for a FEMA grant to assist in funding the repairs. The ditch and levees should be restored to their pre-disaster condition as soon as possible to minimize future flood damage.

RECOMMENDATIONS: I would therefore recommend the District proceed with repairs as soon as possible to allow the system to perform its intended function of providing interior drainage and flood protection.

The estimated cost of the proposed repairs is as follows:

<u>ITEMS</u>	<u>AMOUNT</u>
(1) Removal of Sediment 19212 CY @ \$5.00/CY	\$96,060.00
(2) Embankment-in-Place 5605 CY @ \$25.00/CY	140,125.00
(3) Mobilization Lump Sum	20,000.00
(4) Seeding and Fertilizing (Rural) 1.2 ACRE @ \$1,500.00/ACRE	1,800.00
<b>TOTAL ESTIMATED REPAIR COST</b>	<b>\$257,985.00</b>

Since the estimated cost of the repairs exceeds fifty thousand dollars, it is recommended that a public hearing be held on the matter of making the proposed repairs.

Respectfully submitted,

Sundquist Engineering, P.C.



Troy J. Groth, P.E.

TJG/ksg

File – 64719

