

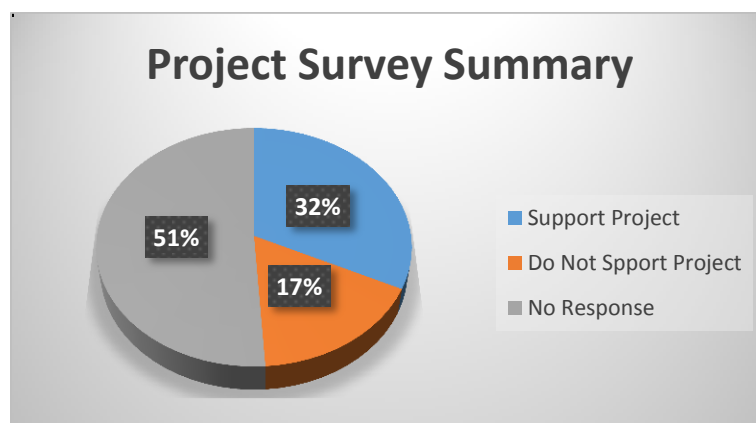
## North Moorhead Flood Mitigation Improvements Project Update November 18, 2016

In the fall of 2015, the City initiated an evaluation of needs and opportunities for flood mitigation in the area along the Red River between 43<sup>rd</sup> Ave N and Wall St. This area, annexed into the City in January 2015, includes the Chelstoms, McCanns, and North Crystal Creek Subdivisions. An earthen levee was constructed around a portion of the area after the 2009 flood by the Buffalo-Red River Watershed District. When temporary measures are used to close gaps during a flood event, this levee provides practical protection with a top elevation of 43 feet river stage to only those properties east of Oakport St N. The levee is not constructed to standards used by FEMA for accreditation. To provide protection that is consistent with City-wide goals, additional flood mitigation is required.

A preliminary geotechnical analysis was performed along the proposed project corridor to assess existing river bank stability which governs the required levee alignment (i.e. minimum setback from the river). Soil borings were completed in late May/early June of 2016. The data from these borings was used to develop two conceptual project options (see attached).

- The Base Option reconstructs and extends the earthen levees along the north and south sides of the project area to Oakport St N. This option would not require acquisition of existing homes, but would require the use of temporary measures during a flood event and would not mitigate flood risks for the properties on the west side of Oakport St N.
- Option 2 would reconstruct and extend the existing levee to provide a continuous levee around three sides of the project area and tie into high ground at the existing BNSF railroad embankment. This option would not require the use of temporary measures during a flood event and would provide flood mitigation to all remaining properties. However, this option would require several buyouts.

The final project configuration/alignment could vary from these options depending on property acquisition. On September 13, 2016, a public meeting was held at the Hjemkomst Center. Meeting invites were mailed to all property owners in the area. A presentation prepared for the meeting addressed flooding extents during various scenarios, conceptual flood mitigation options, project impacts, and possible funding sources for the proposed project. Following the meeting, a survey was mailed to the project area residents to determine the level of support for a flood mitigation project. The survey was sent to 190 properties. The results of the survey are summarized below and the attached Project Survey Response Map.



Almost one-half of the surveys were returned.

- Of those responding, the number of property owners supporting the project was almost double the number of property owners not supporting the project.
- Overall, the number of property owners supporting the project was approximately one-third of the total number of properties in the area.
- Of those responding, but not supporting the project, the primary concerns were the potential use of special assessments to pay a portion of the project cost and satisfaction with the existing levee.
- Of those properties identified as potential acquisitions, a significant number would consider a buyout.

For property owners that supported the project, survey responses regarding an acceptable, one-time special assessment ranged from \$0 to more than \$3,000 with most responses at \$561 (the equivalent special assessment previously levied for other flood mitigation projects in the City).

The total estimated cost for Option 2 (full project) is outlined below.

Option 2 Estimated Cost	
Project Component	Cost
Estimated Property Acquisition	\$5,250,000
Estimated Construction	\$5,750,000
<b>Total Estimated Project</b>	<b>\$11,000,000</b>

The City does not have funding available to proceed with the full scope of Option 2. The most likely sources of funding include some combination of State flood damage reduction grant assistance and bonds issued by the City. These bonds would be repaid with some combination of special assessments, city-wide general property taxes, and/or various City utility funds.

State flood damage reduction grant funding is subject to appropriation by the State Legislature and award of a grant by the DNR. The timing for legislative action is unknown, but will likely be more than one year and as many as several years. If State assistance is secured, it will likely be provided in two or more smaller installments as opposed to one overall award.

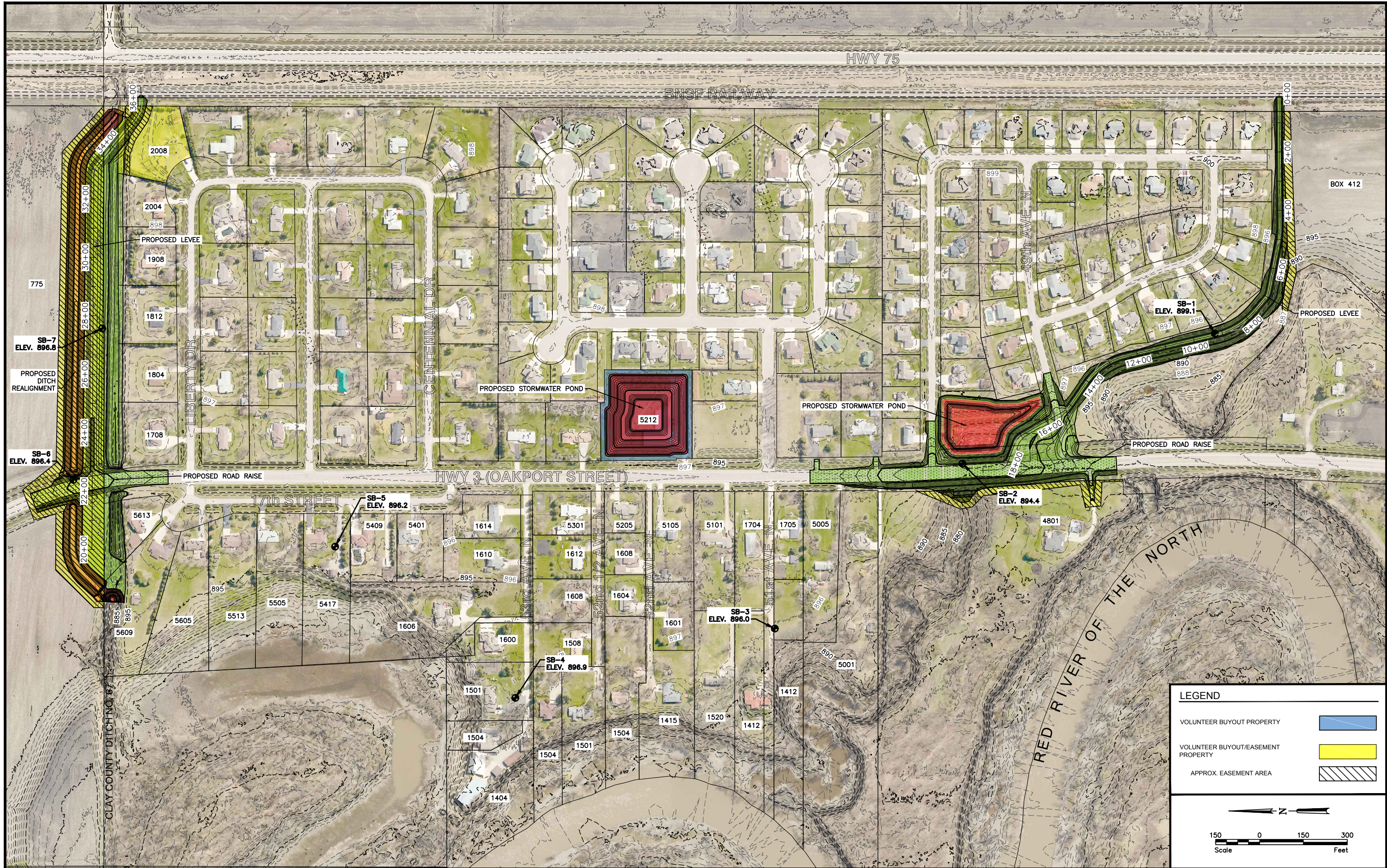
The City will continue project development along the following general path, subject to the availability of funding:

- The City will submit an application for State funding assistance and develop a plan to provide the local cost-share.
- In 2017, the City will coordinate with property owners that expressed an interest in a voluntary buyout. This coordination will be specific to each property owner's interests, and could include completion of an appraisal and development of purchase agreement that would allow closing as soon as funding becomes available.
- As funding becomes available, property acquisition will be completed as the first priority.
- Based on the number and locations of acquisitions, the final alignment for physical infrastructure (levees, internal drainage, etc) will be developed.
- If a viable levee alignment is identified, and funding is available, the project will proceed to construction.

Additional opportunities for public input will be provided throughout project development.



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**LEGEND**

VOLUNTEER BUYOUT PROPERTY

VOLUNTEER BUYOUT/EASEMENT PROPERTY

APPROX. EASEMENT AREA



No.	Revision	Date	By



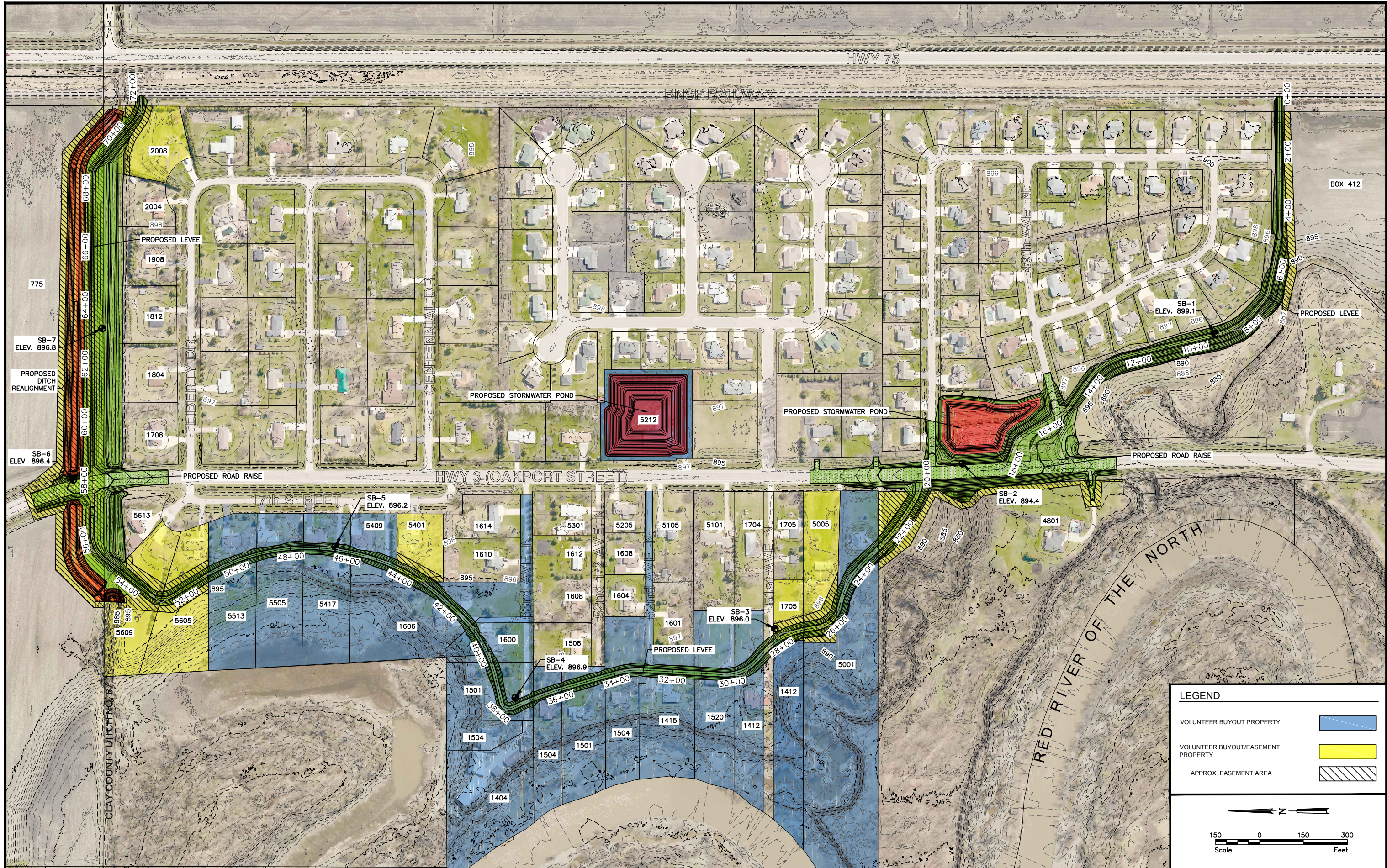
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McCANN'S- CRYSTAL CREEK FLOOD MITIGATION  
CITY OF MOORHEAD  
MOORHEAD, MINNESOTA

OVERALL BASE OPTION PROJECT NO. 6019-077	SHEET 1 of 1
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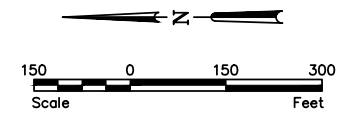


**LEGEND**

VOLUNTEER BUYOUT PROPERTY

VOLUNTEER BUYOUT/EASEMENT PROPERTY

APPROX. EASEMENT AREA



No.	Revision	Date	By



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MCCANN'S- CRYSTAL CREEK FLOOD MITIGATION  
CITY OF MOORHEAD  
MOORHEAD, MINNESOTA

OVERALL OPTION #2 PROJECT NO. 6019-077	SHEET 1 of 1
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