

## **Diversion Authority Land Management Committee**

**3:00 P.M. – Wednesday, May 25, 2022**

This meeting will be held in-person at Fargo City Hall Commission Chambers  
(225 4th St N, Fargo, ND 58102)

1. Introduction
2. Agenda Review
3. Meeting Minutes A (2-3)
4. Property Acquisition Status Report B (4-15)
5. Memo Recommending the Disposal of Organic Farmland C (16-19)
6. Property Rights Acquisition and Mitigation Plan (PRAM) Update
7. Rural Impact Mitigation Program (RIMP) Update
8. Guidance Document for Partially Impacted Structure Sites in the UMA D (20-41)
9. CCJWRD Update
10. MCCJPA Update
11. Committee Update for DA Board E (42-43)
12. Other Business
13. Adjournment – Next Meeting June 22, 2022

## **Media and Public Participation Information**

There are multiple ways to attend or watch this public meeting.

- View the Meeting on Fargo TV or at [www.TVFargo.com](http://www.TVFargo.com)
- View the Meeting on the City of Fargo's Facebook or Twitter feed.
- View the Meeting at [FMDiversion.com/Meeting](http://FMDiversion.com/Meeting)
- View the Meeting at [Twitter.com/FMDiversion](https://twitter.com/FMDiversion)

A regular meeting of the Metro Flood Diversion Authority Land Management committee was held on March 23, 2022. The following members were present: Mary Scherling, Cass County Commissioner; Bruce Grubb, Fargo City Administrator; Kevin Campbell, Clay County Commissioner; Nathan Boerboom, Fargo Division Engineer; Rodger Olson, Cass County Joint Water Resource District; Duane Breitling, Cass County Commissioner and Bob Zimmerman, Moorhead City Engineer.

Members absent: Kory Peterson, Mayor, City of Horace; Chuck Hendrickson, Moorhead City Council; Jenny Mongeau, Clay County Commissioner and Arlette Preston, Fargo City Commissioner.

**1. INTRODUCTION**

Mrs. Scherling called the meeting to order at 3:00 PM. Roll call was taken, and a quorum was present.

**2. AGENDA REVIEW**

**MOTION PASSED**

**Mr. Zimmerman moved to approve the agenda as presented and Mr. Campbell seconded the motion. On a voice vote, the motion carried.**

**3. MEETING MINUTES**

**MOTION PASSED**

**Mr. Campbell moved to approve the minutes from February 2022 and Mr. Breitling seconded the motion. On a voice vote, the motion carried.**

**4. FLOWAGE EASEMENT UPDATE**

Ms. Smith reported that 361 packets were sent to approximately 200 property owners. Five informational open houses were hosted in Christine, Hickson and Moorhead in the last two weeks. Those in attendance had two consistent questions regarding the dispute resolution board and the crop insurance program. Land agents will contact each landowner to address any questions or concerns and obtain the signed flowage easement.

**5. PROPERTY ACQUISITION STATUS REPORT**

Mr. Dodds reported that a few more LRED cases have been settled and five property owners have agreed to the appraised values of their properties.

**6. CCJWRD UPDATE**

Mr. Olson reported that the land agents continue work on farmstead issues and flowage easement offers.

**7. MCCJPA UPDATE**

Mr. Campbell will provide an update at the board meeting.

**8. COMMITTEE UPDATE FOR DA BOARD**

The board update is included in the packet and will be presented tomorrow.

**• Acquisitions**

- Offer letters sent and negotiations starting for flowage easements on 361 parcels in UMA
- Continue working on acquiring Structures and Structure Sites in UMA, and Environmental Monitoring Easements
- Acquired property interests on over 760 parcels (including those acquired via last resort eminent domain, and including split parcels)

**• Appraisal Work**

- Appraisals ongoing for Upstream Structures (farmsteads, rural residential, etc.)
- Phase 2 Flowage Easement Appraisals approved by CCJWRD and MCCJPA in February 2022
- Appraisal work will be started for SE-2B in April

**• Other Key Focus Areas**

- Five open house, informational meetings held for upstream property owners (March 14-22)
- Supporting current eminent domain actions and settlement solutions
- Relocations and farmstead re-establishment planning
- 2022 farmland lease agreements

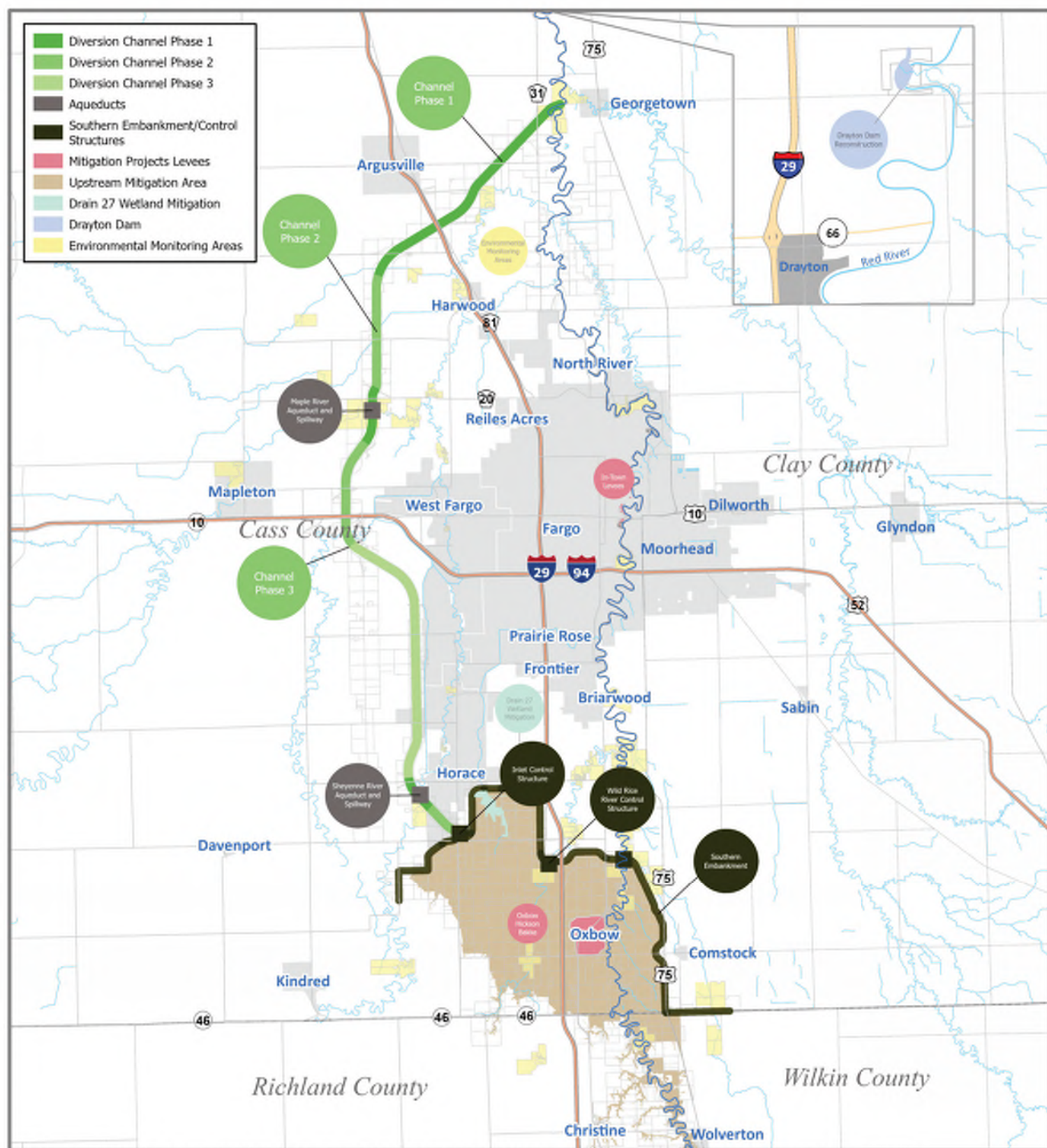
**9. OTHER BUSINESS**

Ms. Smith reported that the talking points will be sent out electronically and the PRAM is currently being evaluated.

**10. NEXT MEETING/ADJOURNMENT**

The next meeting will be April 27, 2022.

Mr. Breitling moved to adjourn; the meeting adjourned at 3:17 PM.



C:\Data\Projects\GIS Projects\FM Area Diversion\FMDiversionParcelStatus.aprx, Layout: Key Property Acquisition Areas 8x11



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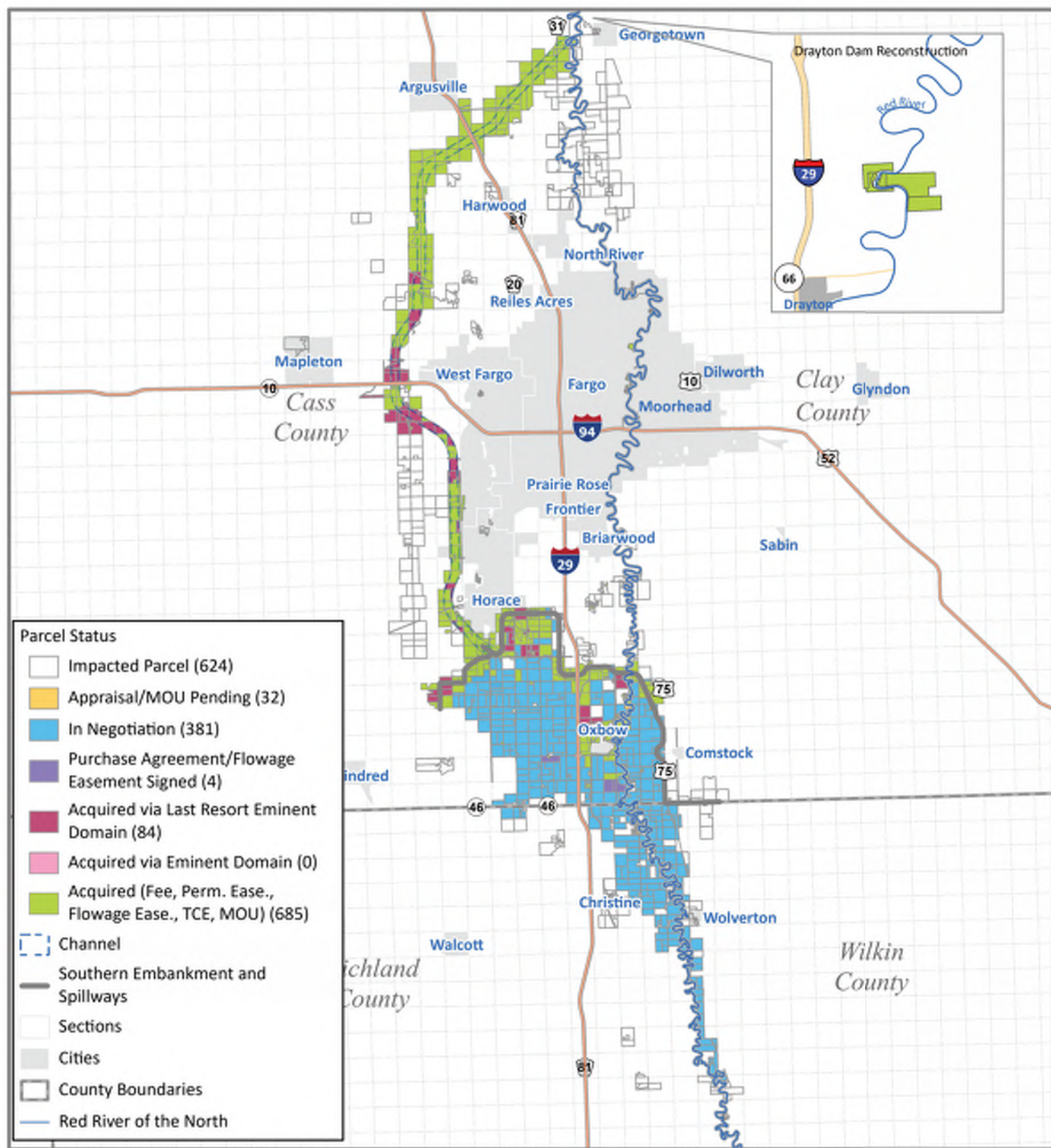
Miles

**FM AREA DIVERSION**  
**KEY ACQUISITION AREAS**

Date: 5/17/2022





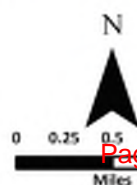
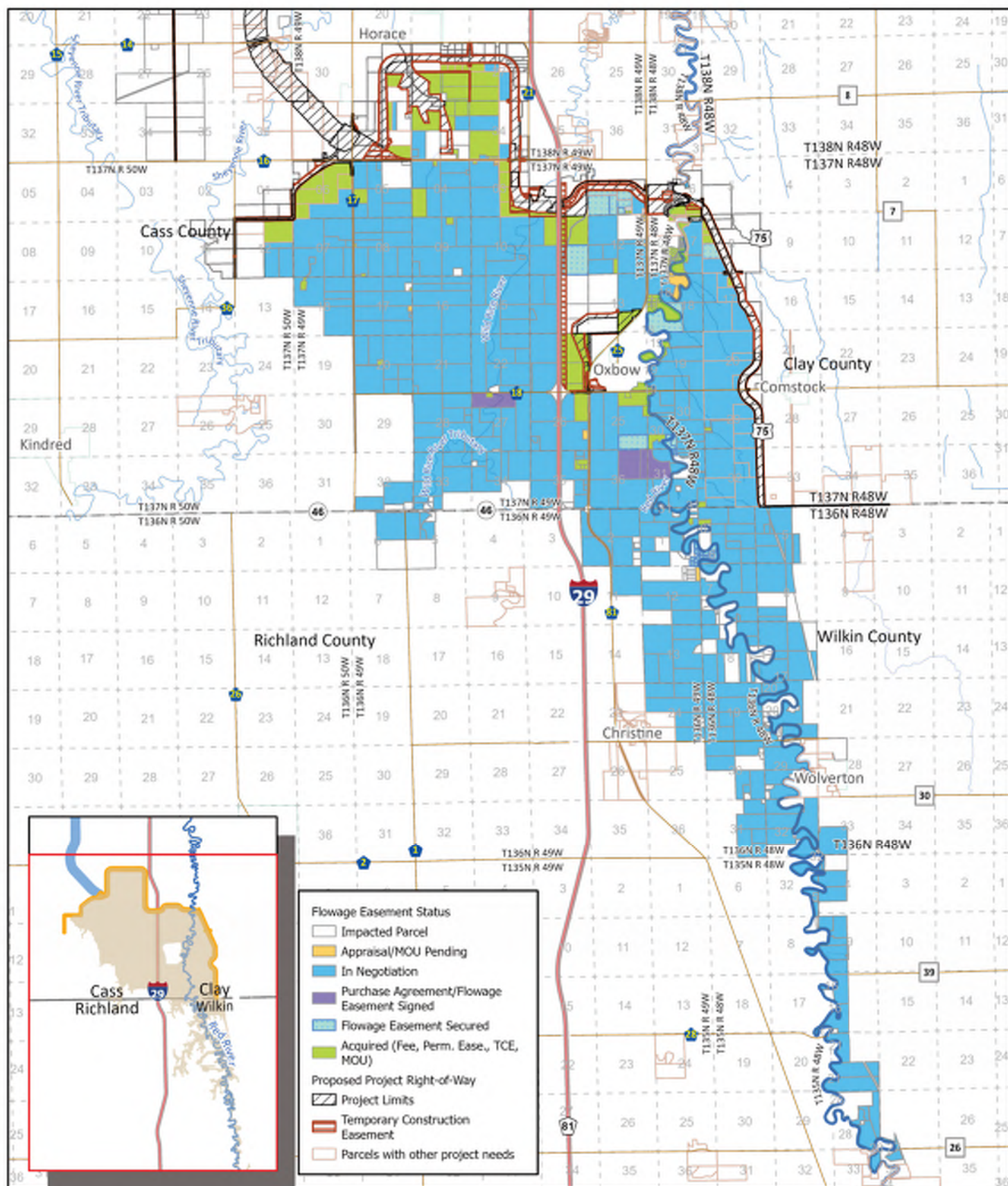


## PROPERTY ACQUISITION STATUS REPORT

Date: 5/17/2022





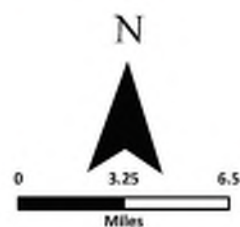
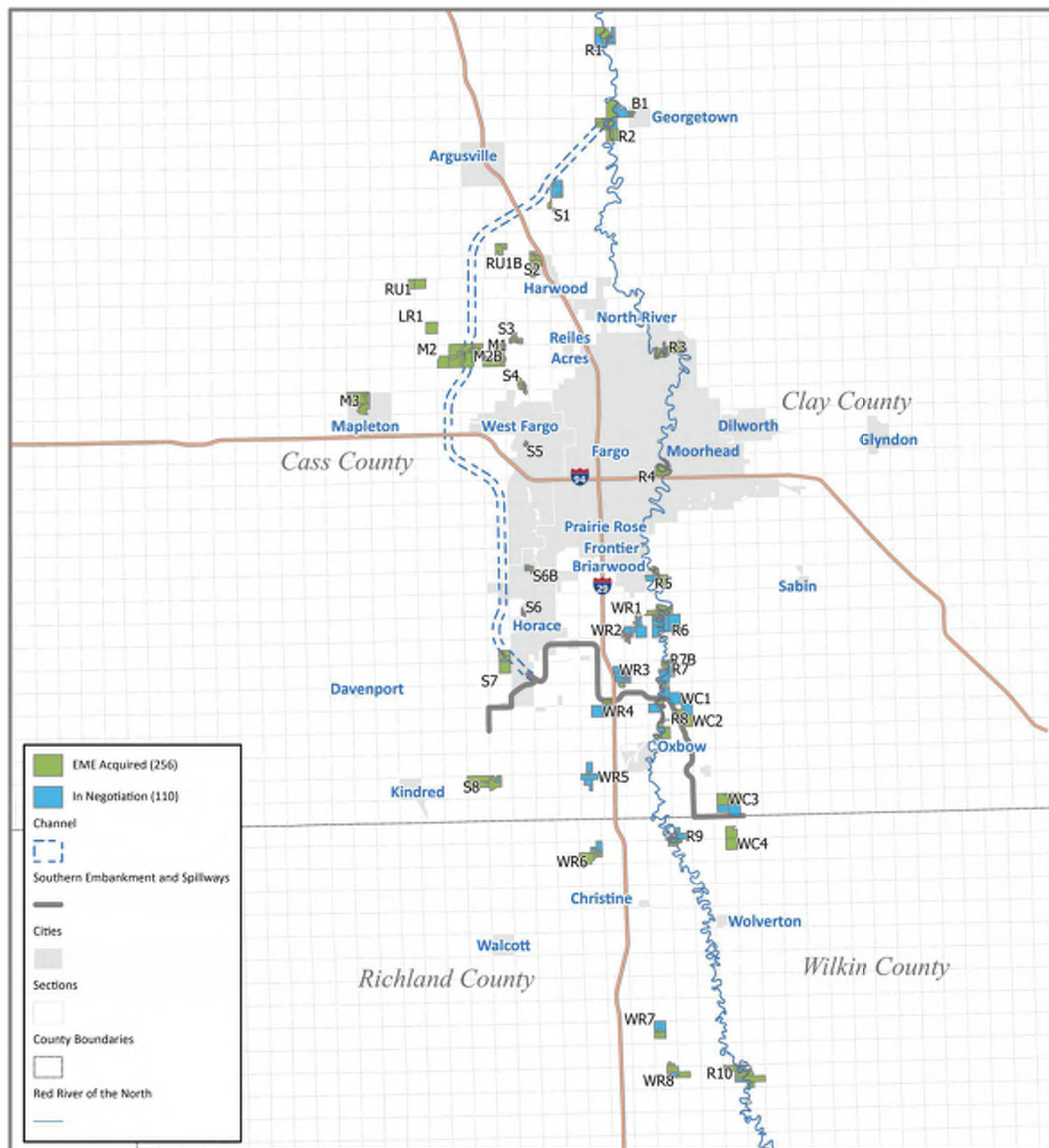


**FLOWAGE EASEMENT  
ACQUISITION STATUS REPORT**

Date: 5/17/2022  
Page 3 of 12







## ENVIRONMENTAL MONITORING EASEMENT ACQUISITION STATUS REPORT

Date: 5/17/2022



# Southern Embankment

## Southern Embankment

(WP Reach SE-1 to SE-5 and I29)

**113 parcels total**

SE-1 Complete Total Parcels: 36



SE-2A Target Completion: April 2022  
Total Parcels: 6



SE-2B Target Completion: March 2023  
Total Parcels: 24



SE-3 Target Completion: December 2024  
Total Parcels: 5



I29 Completed  
Total Parcels: 11



SE-4 Target Completion: January 2024  
Total Parcels: 22

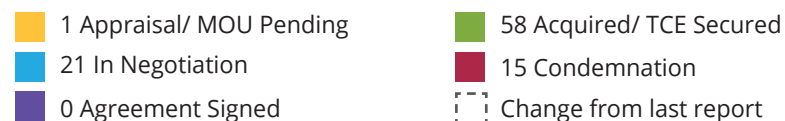


SE-5 Target Completion: January 2024  
Total Parcels: 9



ND

MN



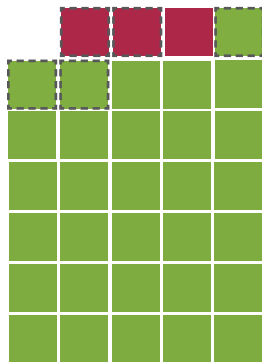


# Southern Embankment Control Structures

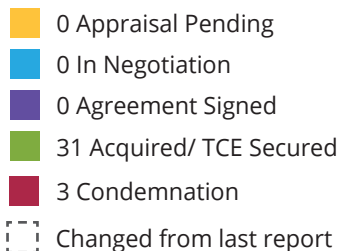
## Red River Control Structure

(WP 35)

Project Status:  
Complete

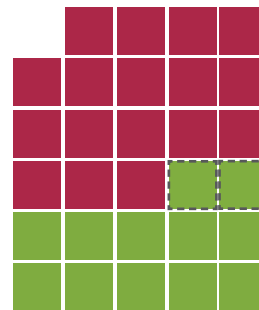


34 parcels total

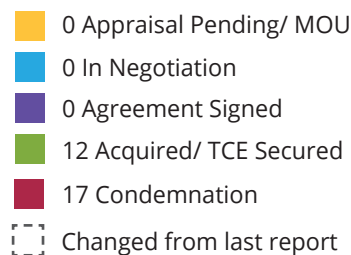


## Drain 27 Wetland Project

Targeted Completion:  
Part 1 - October 2021  
Part 2 - June 2022



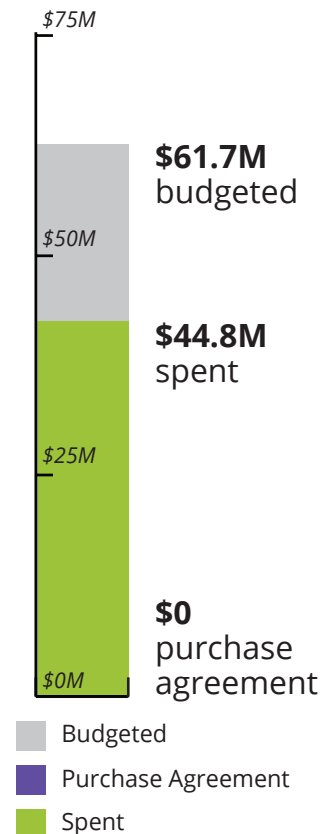
29 parcels total



## Southern Embankment Control Structures, & Drain 27

Hard Costs paid to  
Property Owners

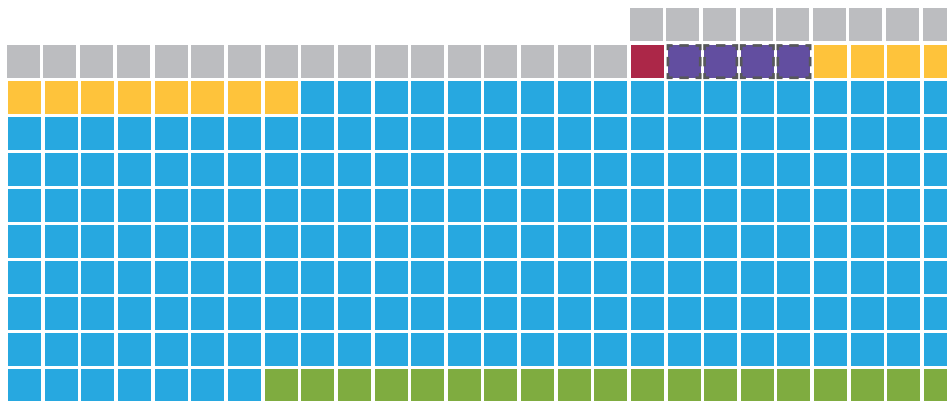
Note: Based on financial data through April



# Upstream Mitigation Area - ND (UMA)

## Flowage Easements without structures (ND)

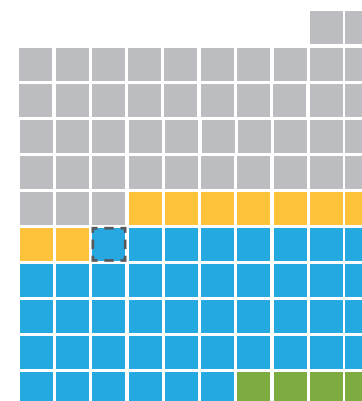
Approximately  
269 parcels in ND



- 12 Appraisal/MOU Pending
- 207 In Negotiation
- 4 Agreement Signed
- 19 Acquired
- 1 Condemnation
- Changed

## Parcels with Structures (ND)

Approximately  
102 parcels in ND

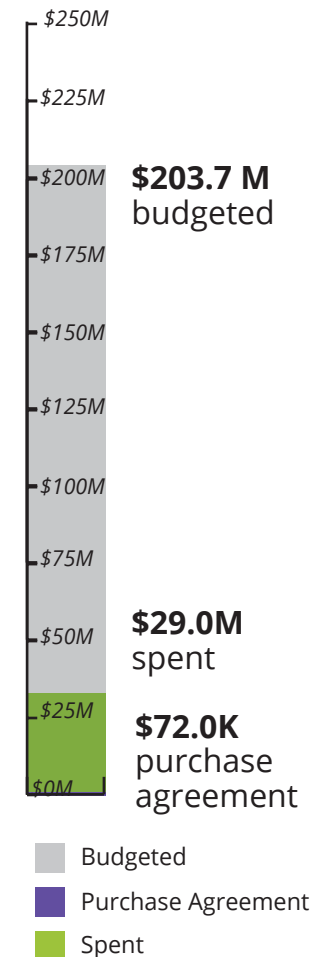


- 9 Appraisal/MOU Pending
- 44 In Negotiation
- 0 Agreement Signed
- 4 Acquired
- Condemnation
- Changed

Note: Excludes parcels in City of Christine

## ND + MN UMA Hard Costs paid to Property Owners

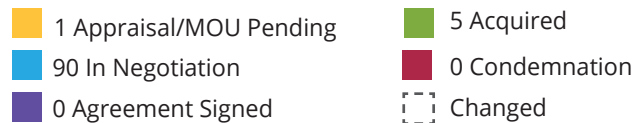
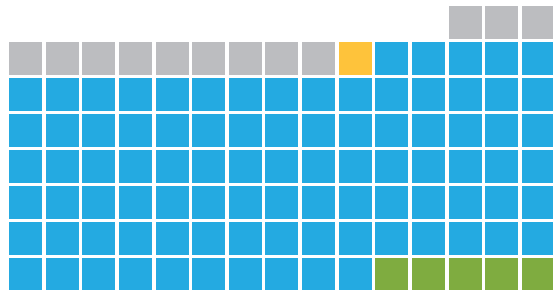
Note: Based on financial  
data through April



# Upstream Mitigation Area - MN (UMA)

## Flowage Easements without structures (MN)

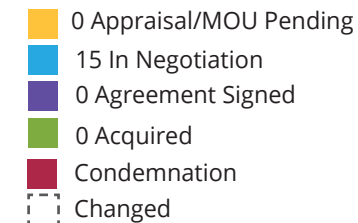
Approximately  
107 parcels in MN



Note: Excludes parcels in the City of Wolverton

## Parcels with Structures (MN)

Approximately  
28 parcels in MN

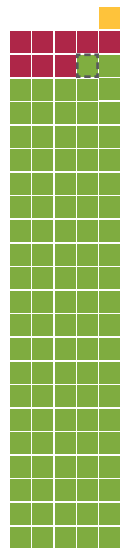




# Diversion Channel

## Phase 1

(WP LAP01)

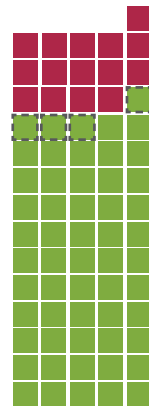


111 parcels total



## Phase 2

(WP LAP02)



71 parcels total

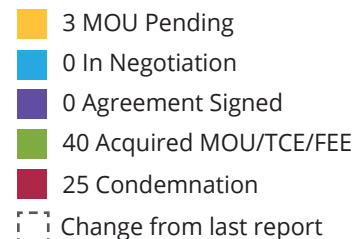


## Phase 3

(WP LAP03)

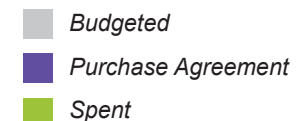
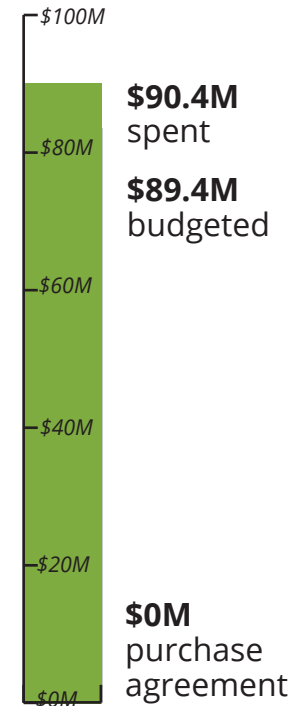


68 parcels total



## Hard Costs paid to Property Owners

Note: Based on Financial data through April



# OHB Projects

As of May 16, 2022

## OHB Ring Levee

WP 43

Parcels needed for  
remaining portion  
of OHB Project.

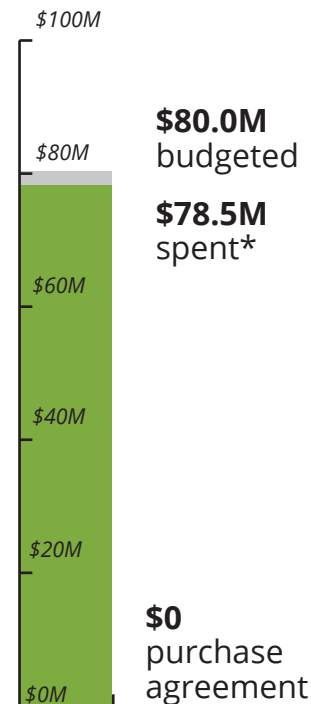


**7 parcels remaining**

- 0 Appraisal Pending
- 4 In Negotiation
- 0 Agreement Signed
- 0 Acquired Parcel
- 0 Condemnation
- 3 Condemnation
- Changed from last report

## Hard Costs paid to Property Owners

NOTE: Based on Financial  
data through April

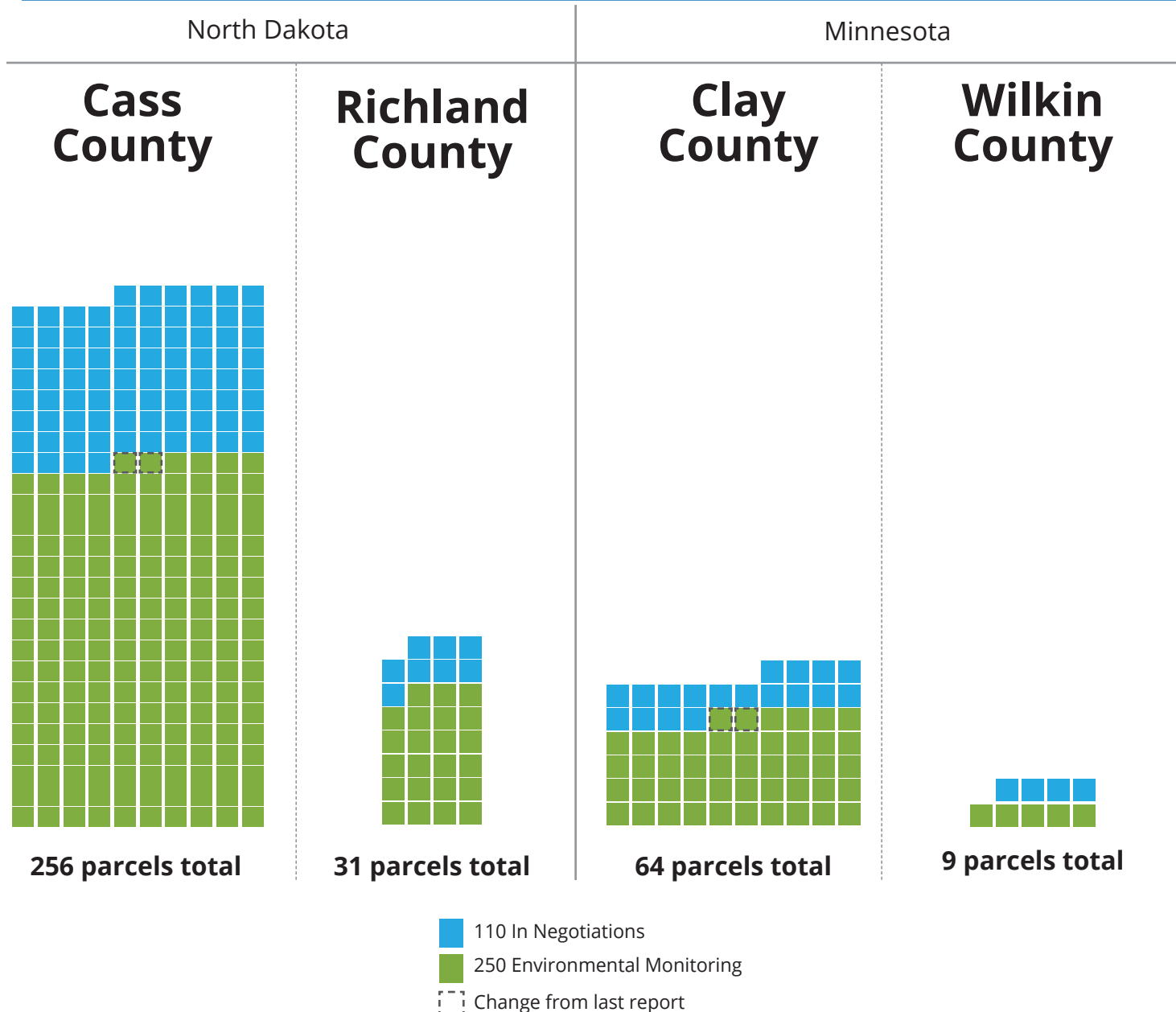


\* Includes parcels  
purchased outside  
the OHB Ring Levee

- Budgeted
- Purchase Agreement
- Spent

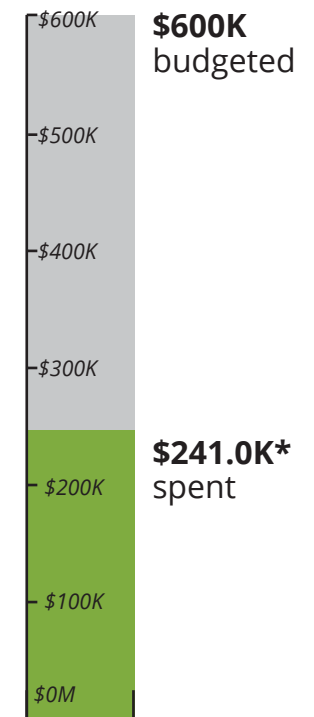
# Environmental Monitoring Areas (BIOGEO)

As of May 16, 2022



## Hard Costs paid to Property Owners

Note: Based on financial data through April



\*includes payments for monuments and easements.

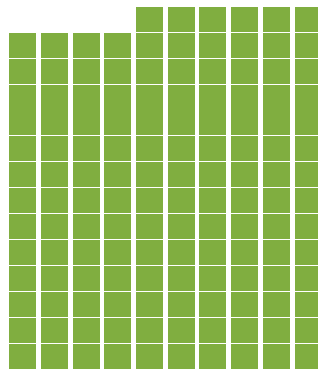
Budgeted  
 Spent



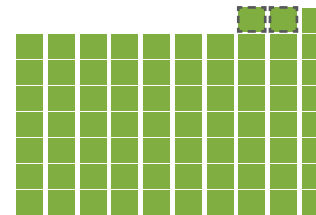
# Asset Lands

As of May 16, 2022

## Non-UMA Parcels in MN & ND



## UMA Parcels in MN & ND



- 136 Acquired Non-UMA
- 73 Acquired UMA
- Change from last report

DATE: May 18, 2022

## Memo Recommending the Disposal of Organic Farmland

To: Metro Flood Diversion Authority (MFDA) Land Management Committee and Board

From: Moorhead - Clay County Joint Powers Authority (MCCJPA)

### Background/Key Points:

On April 28, 2022, the MCCJPA unanimously approved a recommendation from MFDA Executive Director Joel Paulsen regarding the disposal of MCCJPA-owned organic farmland. A copy of the recommendation letter is attached.

As noted in the letter, the recommended process for disposal of MCCJPA-owned organic farmland is:

1. Establish market value.

Step One has been completed. In November 2021, MCCJPA approved the appraisals establishing market value of the organic farmland.

2. Identify organic farmland owners and producers who are impacted by the comprehensive project. Offer the organic farmland to the impacted organic farmland owners and producers in exchange for necessary land rights.

Step Two has been partially completed. The Lands team has identified four organic farmland owners and producers. However, the organic farmland has NOT been offered to the impacted organic farmland owners and producers in exchange for necessary land rights.

3. If the impacted organic farmland owners and producers do not accept the exchange of land for necessary land rights, then offer the organic farmland to landowners impacted by the Southern Embankment and Associated Infrastructure component in a land exchange.
4. If landowners impacted by the Southern Embankment and Associated Infrastructure component are not interested in a land exchange, then the parcels will be reviewed by

the Metro Flood Diversion Authority executive director to determine if the parcels should be deemed excess lands.

5. Offer the organic farmland via public sale.

This memo shares the MCCJPA Board's support of Mr. Paulsen's recommendation, and we are seeking approval from the MFDA Board to dispose of the organic farmland following the sequence steps in the attached letter.

[Recommendation/Actions Needed:](#)

Authorize the MCCJPA to dispose of organic farmland following the steps in the attached recommendation letter.

[Attachments:](#)

- Recommendation Letter Regarding Organic Farmland
- Organic Farmland Exhibit



April 28, 2022

Moorhead Clay County Joint Powers Authority (MCCJPA) Board

**RE: Recommendation regarding Organic Farmland**

Dear MCCJPA Board,

There are two parcels of organic farmland currently owned by the MCCJPA. The two MCCJPA-owned organic farmland parcels, totaling approximately 240 acres, are located south of Comstock (Attachment 1) and were purchased through a voluntary acquisition in October 2016 as they were impacted by a previous configuration of the Comprehensive Project.

The MCCJPA and the Metro Flood Diversion Authority (MFDA) are still working to purchase organic farmland parcels in the Upstream Mitigation Area, totally approximately 350 acres, that are impacted by the Comprehensive Project (Attachment 2). Purchase offers have been made to acquire the impacted organic farmland in accordance with the permit condition from the Minnesota Department of Natural Resources, which outlines that the MFDA shall offer to purchase organic farmland that is impacted by the Comprehensive Project.

Organic farm owners and producers in the area are interested in the MFDA's plan for disposing of the MCCJPA-owned organic farmland.

Given the unique nature of organic farmland, I recommend allowing MCCJPA the opportunity to offer the MCCJPA-owned organic farmland to the impacted organic farmland owners and producers prior to a determination that these parcels are excess lands. A summary of the recommended process for disposal of MCCJPA-owned organic farmland is as follows:

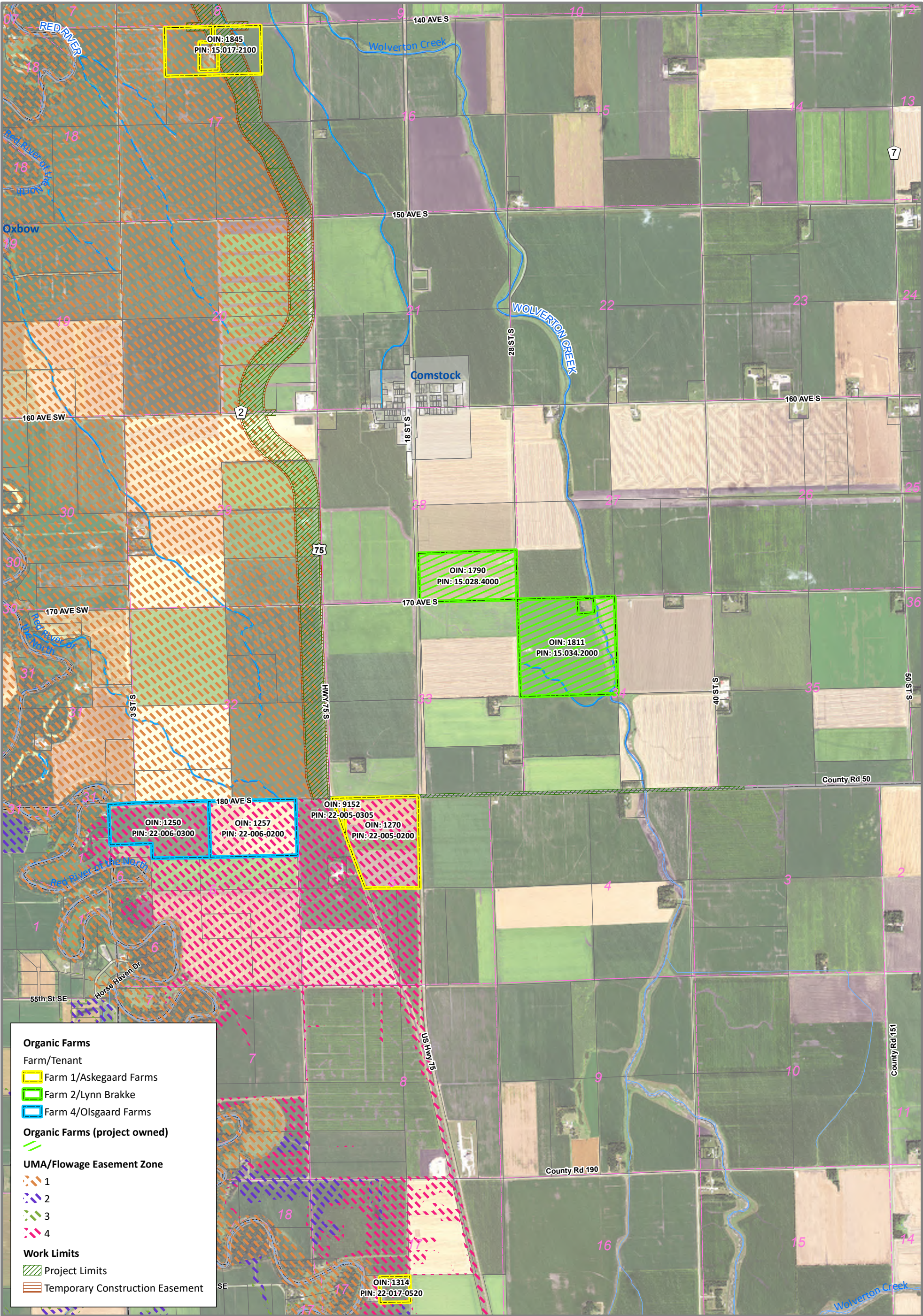
1. Establish market value (Note: MCCJPA approved appraisals establishing the market value of the organic farmland in November 2021)
2. Offer the organic farmland to the impacted organic farmland owners and producers (four parties that fit this classification) in exchange for the land rights needed from these organic farmland owners.
3. Offer the organic farmland in a land exchange to the property owners impacted by the Southern Embankment and Associated Infrastructure component.
4. If there are no exchanges, I would then determine the parcels to be excess lands.
5. Offer the organic farmland via public sale

If the MCCJPA agrees with this recommendation, a memo of support from MCCJPA to the MFDA Land Management Committee and the MFDA Board will be prepared for consideration in May.

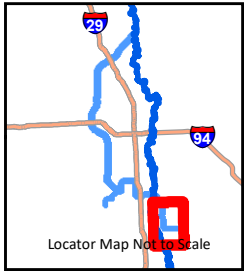
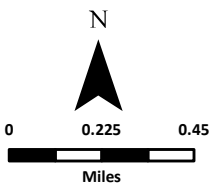
Thank you,

  
Joel Paulsen, PE  
Executive Director





Any reliance upon this map is at user's own risk. AE2S does not warrant the map or its features are either spatially or temporally accurate or fit for a particular use. All parcel acreages and legal descriptions shown hereon are based on County GIS data. Final acreages and legal descriptions to be determined by boundary survey. Coordinate System: NAD 1983 StatePlane North Dakota South FIPS 3302 Feet | Edited by: cwickenheiser C:\Data\Projects\GIS Projects\FM Area Division\012 Lands Program\Property Acquisition\Project Wide\Environmental\Organic Farms\Organic Farms\_Impacted\_only.mxd



**Organic Farms**  
FM AREA DIVERSION PROJECT  
Map Date: 4/19/2022







METRO  
FLOOD  
DIVERSION  
AUTHORITY

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the Upstream Mitigation Area

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May 16, 2022



# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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## INTRODUCTION

The Settlement Agreement, dated February 1, 2021 states, “If requested by a landowner as an alternative to an acquisition of property rights, the Metro Flood Diversion Authority (the “Authority”) will fund and approve flexible compensation/mitigation efforts within the Staging Area to compensate landowners for or prevent water damage to their properties.” In conjunction with the Settlement Agreement, the United States Army Corps of Engineers (“USACE”), Federal Emergency Management Agency (“FEMA”), North Dakota Department of Water Resources (“NDDWR”), formally known as the Office of the State Engineer, and the Minnesota Department of Natural Resources (“MDNR”), jointly established requirements for mitigating impacts to properties within the Upstream Mitigation Area (“UMA”).

This document is intended to define “flexible compensation/mitigation” and the overarching implementation process in conjunction with the Property Rights Acquisition and Mitigation Plan (“PRAM”). It recognizes each property is unique and will require a customized mitigation solution. This document focuses on existing Structure sites located on parcels impacted by Mitigation Zones 2, 3, and 4 (see Table 1 for a list of impacted structure sites) since these Structures are allowed to remain under certain conditions. Whereas all Structures in Mitigation Zone 1 are required to be removed, there are approximately seven (7) Structure sites that may be “carved out” of Mitigation Zone 1 and placed within either Mitigation Zone 2 or Mitigation Zone 4 (see Table 2 for a list of the Mitigation Zone 1 Carve-Out Sites). The mitigation of the Mitigation Zone 1 “carve out” sites fall under the procedures of this document.

## DEFINITIONS

**100-Year Flood Event:** means the flood event that has a one percent (1%) chance of being met or exceeded in any year. The 100-Year Flood event is used to establish the regulatory floodplain boundary for the Comprehensive Project. The regulatory floodplain boundary will be updated when the Comprehensive Project is completed within an area referred to as the Revision Reach.

**500-Year Flood Event:** means the flood event that has a two-tenths percent (0.2%) chance of being met or exceeded in any year.

**Base Flood Elevation (BFE):** means the highest elevation of water surface resulting from the 100-Year Flood Event.

**Cass County:** means Cass County, a North Dakota home rule county and political subdivision of the State of North Dakota.

**Clay County:** means Clay County, a Minnesota county and political subdivision of the State of Minnesota.

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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**Comprehensive Project:** means construction of a storm water diversion channel through North Dakota that conveys twenty thousand (20,000) cubic feet per second at the one percent (1%) chance of a one hundred (100)-year event and is approximately thirty (30) miles long with tie-back embankments, a staging area, a Diversion Inlet Structure, a six (6)-mile connecting channel, a control structure on each of the Red and Wild Rice Rivers, an aqueduct hydraulic structure on each of the Maple and Sheyenne Rivers, a drop structure of each of the Rush and Lower Rush Rivers, four (4) railroad bridges, In-Town Work, community ring levees, and environmental mitigation, as generally described in the Final Feasibility Report and Environmental Impact Statement, Fargo-Moorhead Metropolitan Area Flood Risk Management Project, dated July 2011, and approved by the Chief of Engineers on December 19, 2011, as amended by the Supplemental Environment Assessment, Fargo-Moorhead Metropolitan Area Flood Risk Management Project, dated September 2013, and approved by District Engineer, St. Paul District, on September 19, 2013, and the Final Supplemental Environmental Assessment #2, Fargo Moorhead Metropolitan Area Flood Risk Management Project, dated February 2019, and approved by the District Engineer, St. Paul District, on February 28, 2019.

**Conditional Letter of Map Revision (CLOMR):** means the CLOMR issued by FEMA for the Comprehensive Project in September 2020 under Case Number 19-08-0683R. The CLOMR describes how the floodplain will change as a result of the Comprehensive Project if constructed as planned.

**Coordination Plan:** means the FEMA/USACE Coordination Plan, dated April 14, 2015, and updated June 26, 2018.

**Hydraulic Effects:** means a modeled change in water surface elevation from the Comprehensive Project, including the definition of Impact, for the purposes of the Property Rights Acquisition and Mitigation Plan. Hydraulic Effect is based on the model approved by FEMA for definition of the CLOMR. The CLOMR approved model is used to determine the flood water depth under existing and with-Comprehensive Project 100-Year Flood Event conditions.

**Impact:** means a modeled increase of flood water elevation from existing conditions to with-Comprehensive Project conditions. USACE considers increases of one (1) foot or more an Impact. The North Dakota Department of Water Resources (NDDWR) considers increases of one-half (0.5) foot or more at the 100-year Flood an Impact. The Minnesota Department of Natural Resources considers increases of one-tenth (0.1) feet, or more from the 20-year, 50-year, 100-year, 500-year, or the PMF flood event an Impact.

**Insurable Structure:** means a structure with two (2) or more outside ridged walls and a fully secured floor, that is a fixed to a permanent site; or a manufactured home (also known as a mobile home), is a structure built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation); or a travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws. Does not mean a gas or liquid storage tank or a recreational vehicle, park trailer, or other smaller vehicle.

**Land Management Consultant:** means the land management consultant for the Authority.

**Minnesota or State of Minnesota:** means the State of Minnesota.

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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## **MITIGATION ZONES:**

USACE defined two (2) mitigation zones in the Final Supplemental Environmental Assessment #2, dated February 2019. In summary, the federal mitigation zones are based on the following criteria:

### **Mitigation Zone 1**

- Depth difference of one (1)-foot or greater for the 100-Year Flood Event or 500-Year Flood Event (whichever is greater) within Cass County and Clay County.
- Depth difference of one (1)-foot or greater for the 100-Year Flood Event or 500-Year Flood Event (whichever is greater) along the Red River corridor within Richland County and Wilkin County.
- Provides the operating pool or floodwater storage volume required to ensure the planned operation of the Project, which includes minimizing downstream impacts.
- Development will not be allowed.
- Placement of fill will not be allowed.
- Flowage easements will be required to establish a property right.

### **Mitigation Zone 2**

- Depth difference of one (1)-foot or greater for the 100-Year Flood Event or 500-Year Flood Event (whichever is greater) within Richland County and Wilkin County.
- Limited placement of fill will be allowed in Mitigation Zone 2, within the terms and conditions of the flowage easement and in accordance with state and federal floodplain regulations.
- Development will be allowed, but structures must be protected at least one (1)-foot higher than the elevation of the with-Project 500-Year Flood Event water surface elevation.
- Flowage easements will be required to establish a property right.

**Mitigation Zone 3:** This is an area in North Dakota beyond Federal Mitigation Zone 1 and Mitigation Zone 2 where the Comprehensive Project causes a Hydraulic Effect of 0.5-feet or more at the 100-Year Flood Event.

**Mitigation Zone 4:** This is an area in Minnesota beyond Federal Mitigation Zone 1 and Mitigation Zone 2 where the Comprehensive Project causes a Hydraulic Effect of 0.1-feet or more from flood events up to and including the PMF flood event. Mitigation Zone 4 is divided into three (3) sub-zones reflecting the flood event that defines the boundary of impacts.

- **Zone 4A:** This is an area in Minnesota beyond Federal Mitigation Zone 1 and Zone 2 where the Comprehensive Project causes a Hydraulic Effect of 0.1-feet or more at the PMF flood event.
- **Zone 4B:** This is an area in Minnesota beyond Federal Mitigation Zone 1 and Zone 2 where the Comprehensive Project causes a Hydraulic Effect of 0.1-feet or more at the 500-Year Flood Event.

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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- **Zone 4C:** This is an area in Minnesota beyond Federal Mitigation Zone 1 and Zone 2 where the Comprehensive Project causes a Hydraulic Effect of 0.1-feet or more at the 100-Year Flood Event.

**North Dakota** or **State of North Dakota**: means the State of North Dakota.

**Pleasant Township**: means Pleasant Township, a township of the State of North Dakota.

**Probable Maximum Flood (PMF)**: means the probable maximum flood event used for dam-safety purposes. The PMF event is nearly seven (7) times larger than the 2009 flood of record and has a reoccurrence interval of approximately one hundred seventy-five thousand (175,000) years.

**Red River**: means the Red River of the North.

**Revision Reach**: means the area defined in the USACE/FEMA Coordination Plan as, “The extents defined by an effective tie-in at the upstream and downstream limits for each flooding source. An effective tie-in is obtained when the revised base flood elevations from the post-project conditions model are within 0.5 feet of the pre-project conditions model at both the upstream and downstream limits.”

**Richland County**: means Richland County, North Dakota county and political subdivision of the State of North Dakota.

**Staging Area**: means the area upstream of the SEAI, Diversion Inlet Structure, Red River Control Structure and the Wild Rice River Control Structure (both of which are being built as part of Plan B) that will be used to store floodwater when the Comprehensive Project is fully operational. The Staging Area includes an approximately 28,500-acre land management area immediately upstream of the Southern Embankment designed to store floodwaters. The Staging Area includes that area where the Comprehensive Project will increase the 100-year POR or 500-year POR floodwater surface elevation by one foot or more over existing (that is, pre-Comprehensive Project) conditions.

**Stanley Township**: means Stanley Township, a township of the State of North Dakota.

**Structure**: means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. The terms "structure" and "building" are interchangeable in the National Flood Insurance Program (NFIP).

**Upstream Mitigation Area (UMA)** means the area where the Authority is required to obtain property rights for the temporary storage of floodwaters during Comprehensive Project Operation, as shown in Exhibit 1.

**Vehicular Access**: means when roadways or driveways have no more than one (1) foot of water during the 100-Year Flood Event. Vehicular Access is required for residential structures for life-safety purposes.

**Wilkin County**: means Wilkin County, a Minnesota county and political subdivision of the State of Minnesota.

**With Comprehensive Project 100-year Floodplain**: means the 100-year Floodplain resulting from completion of the Comprehensive Project.



# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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## PROCESS

Only impacted structures, as defined above are required to be purchased or mitigated. A list of anticipated structure types that will require mitigation is presented in Table 3.

**Step 1:** Identify existing structures impacted by the following:

The With Comprehensive Project 100-year Floodplain and BFE are used often in this document. FEMA uses the term BFE (Base Flood Elevation) when stating floodplain requirements. The Comprehensive Project uses the 100-Year Flood Event when stating requirements. The 100-Year Flood Event when being stated in requirements shall be taken as the With Comprehensive Project 100-year Floodplain. The BFE is the current mapped floodplain and will be replaced with the With Comprehensive Project 100-year Floodplain to update the BFE.

If a Structure is within the With Comprehensive Project 100-year Floodplain, it must be mitigated whether it is within a Mitigation Zone or not. OINs 1485, 1543, 8466, and 9258 are examples.

If a Structure is NOT in the With Comprehensive Project 100-year Floodplain but still within a Mitigation Zone, mitigation is still needed to meet the requirements of the zone it is in. A map of the UMA and Mitigation Zones is presented in Exhibit 1.

- Zone 2
  - Residential structures must be at least one (1) foot above the 100-Year Flood Event and protected to the 500-Year Flood Event elevation.
  - Non-residential structures must be protected to the 500-Year Flood Event elevation.
- Zone 3
  - Residential structures must be at least one (1) foot above the 100-Year Flood Event elevation.
  - Non-residential structures must be protected to at least one (1) foot above the 100-Year Flood Event elevation.
- Zone 4A
  - Residential structures must be at least one (1) foot above the 100-Year Flood Event and protected to the PMF flood elevation.
  - Non-residential structures must be protected to the PMF flood elevation.
- Zone 4B
  - Residential structures must be at least one (1) foot above the 100-Year Flood Event and protected to the 500-Year Flood Event elevation.
  - Non-residential structures must be protected to the 500-Year Flood Event elevation.
- Zone 4C
  - Residential structures must be at least one (1) foot above the 100-Year Flood Event elevation.
  - Non-residential structures must be protected to the 100-Year Flood Event elevation.

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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**Step 2:** Obtain a topographic survey of all the Mitigation Zone impacted structures and compare the structure elevations to the Mitigation Zone governing flood level events.

- Topo survey of the building corners, the lowest opening, and adjacent ground elevation.
  - The Mitigation Zones are based on LiDAR mapping and hydraulic modeling. In some cases, a mapped Mitigation Zone may clip a corner of a Structure. A survey may provide more precise information such that the whole Structure is out of the Mitigation Zone and a letter of map adjustment (LOMA) can be prepared to remove the Structure from mitigation requirements.
  - For example, the lowest opening, like an egress window, may be below the 100-Year Flood Event elevation. However, if the lowest adjacent ground (LAG) elevation is above the 100-Year Flood Event elevation, mitigation would not be required because the flood water would not be able to reach the egress window at the 100-Year Flood Event.
- If the Mitigation Zone impacted Structure meets the elevation requirements of the Mitigation Zone and has Vehicular Access, that Structure does not need to be mitigated.
- If the Structure does not meet the elevation requirements of the Mitigation Zone and/or does not have Vehicular Access, the Structure needs to be mitigated.

**Step 3:** Obtain a before and after project appraisal of each impacted parcel identified above as well as the value of each Structure/building on the impacted Structure site.

**Step 4:** Identify whether Structure site will have Vehicular Access (see Table 1 for a list of Structure sites without vehicular access).

- Structure sites that do not have Vehicular Access will require a buyout or road raise.
- Roads will be raised if the cost of the road raise is not greater than the value of the Structure site.
- Roads will be raised to six-inches above the 100-Year Flood Event.
- Driveways that are impacted by the 100-Year Flood Event will also be raised in a like manner.
- A hydraulic analysis will be conducted before the road raise to determine what effects the road raise may have.
  - Coordinate with Authority's Design Engineer and USACE to determine the hydraulic effect of raising the road.
- Maps are currently available that indicate roadway inundation of one (1)-foot or greater during 100-Year Flood Event. Refer to Exhibit 2 for a Comprehensive Project Roadway Inundation Map.
- Raising one strategically placed road may provide Vehicle Access to multiple parcels.
  - Coordinate with Authority's Design Engineer to estimate cost of raising the affected road.
  - If the estimated cost of raising the road is less than the estimated cost of buying and removing the impacted structure(s), raise the road for mitigation.
  - If the estimated cost of raising the road is more than the estimated cost of buying and removing the impacted structures(s), but still considered a feasible mitigation approach based on engineering judgement, gather input from the Authority for acceptance to finalize mitigation approach.

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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**Step 5:** Prepare Structure Mitigation Matrices to determine structure mitigation options.

- Land Management Consultant reviews the topographic surveys and compares the Mitigation Zone impacted Structures elevations to the different flood levels and determines the appropriate mitigation options for the site and Structures.
- Land Management Consultant prepares cost estimates for each evaluated mitigation option and compares the mitigation cost(s) to the Structure appraisal(s). If the estimated cost of mitigation is less than the estimated cost to buy and remove the Structure(s) and/or Structure site, then the mitigation will be offered as an acceptable option for the impacted Structure site.
- After the Structure mitigation matrices are prepared, Land Management Consultant meets with the Land Agent(s) to discuss the options they can offer to the property owners.

**Step 6:** Land agent meets with Owner to discuss options.

**Step 7:** Offer to buy any impacted structure(s)

- If offer based on appraisal is accepted, the Structure(s) would be demolished and removed by the Authority via a contractor.

**Step 8:** If landowner would prefer to keep the Structure, then mitigation options would be reviewed.

- Land Management Consultant to review preferred mitigation options and present feasible mitigation options to the Authority staff for review and input.
  - Overall mitigation costs must be less than the overall estimated cost of a structure buyout, relocation costs, structure demolition costs, and site clean-up/restoration costs.
  - Mitigation on each parcel will be unique as well as the associated costs.
    - Earthen levee will likely be the most common and desired form of mitigation. Coordinate with Authority's Design Engineer to design and estimate cost of levee.
    - Work with contractor that specializes in elevating structures/houses to determine cost.
    - Work with contractor that specializes in moving structures/houses to determine cost.
    - Work with contractor that specializes in dry/wet-proofing to determine cost.

## POTENTIAL MITIGATION ACTIONS

The FEMA/USACE Coordination Plan, dated April 14, 2015 and updated June 26, 2018 states, "The impacts caused by the Comprehensive Project on all Insurable Structures within the revision reach will be mitigated through agreed methods consistent with those specified by the National Flood Insurance Program (NFIP)." Mitigation shall be performed in accordance with FEMA guidance and may include the following:

1. Buyout
  - Will offer buyout of any Structure that is impacted by the Comprehensive Project.
  - Impacted Structures are those that are in or touching Mitigation Zones 2, 3, or 4.

## Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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2. Wet floodproofing (wet-proofing) – allow floodwaters to enter Structure in such a way that damage to the Structure and its contents is minimized. Post-flood cleanup will be required. Wet floodproofing must require automatic entry of floodwaters into Structures without human intervention. (Refer to FEMA’s Paragraph 1.3.4 of “ENGINEERING PRINCIPLES AND PRACTICES for Retrofitting Flood-Prone Residential Structures”)
  - Wet-proofing will only be considered for non-residential structures.
3. Dry floodproofing (dry-proofing) – portion of the Structure that is below the 100-Year Flood Event + one (1)-foot elevation is sealed to make it watertight and substantially impermeable to floodwaters. Dry-proofing is listed in the Coordination Plan as an approved means of mitigation for non-residential structures. (Refer to Paragraph 1.3.3 of “ENGINEERING PRINCIPLES AND PRACTICES for Retrofitting Flood-Prone Residential Structures”)
  - In practice, dry-proofing will most likely only consist of concrete retaining walls.
  - Dry-proofing basements requires an engineered stamped design.
  - Floodproofing typically only applies to non-residential structures unless a residential basement exception by FEMA has been adopted by the governmental entity jurisdiction. Dry-proofing may then be allowed, but is typically only used for new construction.
  - Clay County has a residential basement exception. Wilkin County is not listed. Pleasant Township and Stanley Township in Cass County are listed. No Richland County townships are listed.
4. Raising Elevation
5. Uncertified or Non- Accredited Earthen Levees
  - 8-foot Top Width (Min.)
  - 4:1 Side Slopes (Max.)
  - Top elevation @ 500-year Flood level for Zone 2 and 4B
  - Top elevation @ PMF Flood level for Zone 4A
  - Property owner will be responsible for maintenance after completion of earthen levee construction.
  - Property owner will retain sole ownership of earthen levee after completion of levee construction.
6. Relocation (to dry area onsite, if available, or another parcel location)

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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## **PRIVATE UTILITIES**

If one of the private utilities listed below is impacted, it will be mitigated per FEMA, NFIP, and local public health official guidance since they directly affect the function and livability of the associated structure.

- Septic
  - Septic tank
  - Holding tank
  - Drainfield
- Tanks
  - Fuel
  - Underground storage tanks
  - Propane
- Well
- Solar panels



## Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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**Table 1 – Structure Sites Impacted by Zones 2, 3, 4A, 4B, and 4C**

#	OIN (State)	Impacted Residential Structure	Impacted Non-Residential	No Vehicular Access	Impacting Zone
1	176 (ND)			X	3
2	867 (ND)	1	2		3
3	1237 (MN)	1	6		4A
4	1238 (MN)	1	8		4A
5	1252 (MN)	1	1		4A
6	1267 (MN)	1	4		4A
7	1294 (MN)	1	6		2 & 4C
8	1305 (MN)	1	2	X	2 & 4C
9	1307 (MN)		2	X	2 & 4C
10	1312 (MN)			X	2 & 4C
11	1314 (MN)	1			2 & 4C
12	1318 (MN)		3		4C
13	1328 (ND)			X	3
14	1329 (ND)			X	3
15	1349 (ND)		4		3
16	1356 (ND)		2		3
17	1411 (ND)		4	X	2 & 3
18	1412 (ND)		1	X	3
19	1473 (ND)	1	1	X	2
20	1485 (ND)		1	X	3
21	1542 (ND)			X	2 & 3
22	1544 (ND)		1	X	2 & 3
23	1545 (ND)			X	2 & 3
24	1548 (ND)		2		3
25	1583 (ND)		2		2 & 3
26	2024 (ND)			X	3
27	2033 (ND)		3	X	3
28	7102 (MN)		2		4C
29	8360 (ND)		1	X	3
30	8466 (ND)		2		3
31	8528 (MN)	1	4		4A
32	8786 (ND)	1			3
33	8798 (MN)	1	8		4C
34	9153 (MN)			X	4C
35	9258 (ND)		2	X	2 & 3

# Guidance Document for Mitigation of Partially Impacted Structure Sites in the UMA

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**Table 2 – Zone 1 Carve-Out Sites**

	OIN	Parcel Type	Owner
1	1826	Farmstead	Larry & Judith Ness
2	1968	RES	Stuart D Boyer
3	2044 & 2045	COM And RES	Paul S & Margaret R Cose
4	2046, 2183, 2184	RES And COM	John L & Kathleen J Luecke LE
5	5028	RES	Scott E & Vicki J Turner
6	1837	CEM	Clara Cemetery
7	819 & 7003	GOV	Cass Rural Water Treatment Plant & Wells

**Table 3 – Anticipated Structure Types to Receive Mitigation**

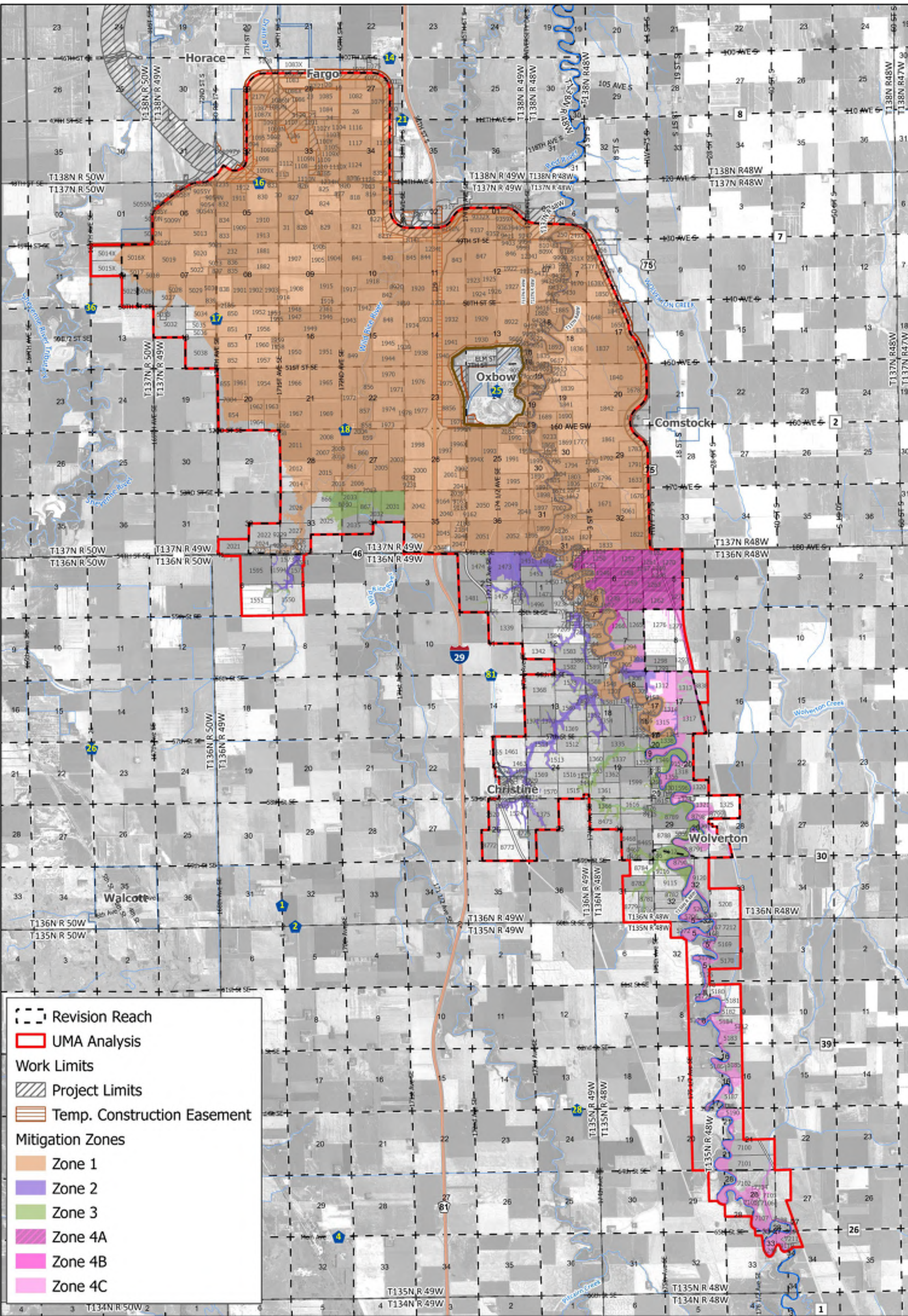
Structure Types	
<b>Residential</b>	<ul style="list-style-type: none"> <li>• Slab-On-Grade Houses</li> <li>• Split Level Homes</li> <li>• House w/ Full Basement</li> <li>• House w/ Attached Garage</li> <li>• Trailer Homes</li> </ul>
<b>Non-Residential</b>	<ul style="list-style-type: none"> <li>• Barns</li> <li>• Sheds</li> <li>• Storage Buildings</li> <li>• Detached Garages</li> <li>• Lean-To for Hay/Wood (Might not be an Insurable Structure.)</li> <li>• Grain Bins (Considered Personal Property. Under this designation, the owners of the grain bins will be reimbursed for the lesser of the cost to move the existing grain bin or the cost to purchase new grain bins. Refer to the PRAM for further details.)</li> </ul>

**Exhibit 1 – UMA and Mitigation Zones Map**

**Exhibit 2 – UMA Impacted Roadways Map**

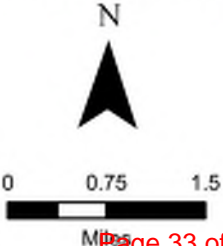
# EXHIBIT 1





Information depicted may include data unverified by AE2S. Any reliance upon such data is at the user's own risk. AE2S does not warrant this map or its features are either spatially or temporally accurate.

Edited by: hrcrcs | C:\Data\Projects\GIS Projects\FM Area Diversion\UMA\_CLOMRS.aprx | UMA Area with FE Zones 11x17



## Upstream Mitigation Area

FM AREA DIVERSION PROJECT  
Map Date: 4/26/2022





# EXHIBIT 2

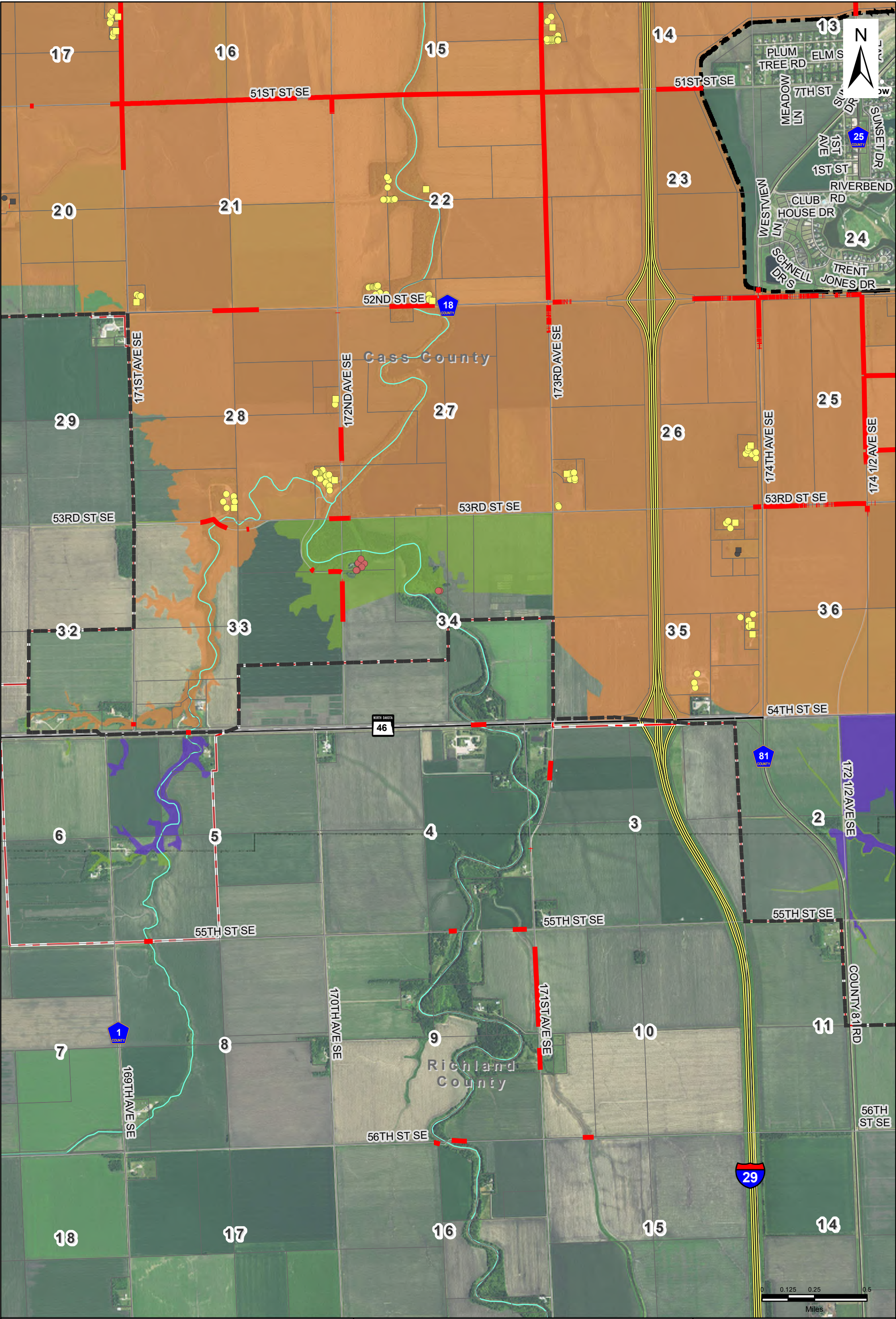












**Upstream Roadway Inundation  
(1 Foot or Greater)  
100 - Year Floodplain With Project**

Created By: enelson Date Created: 11/18/2020 Date Exported: 5/2/2022 Image: NAIP 2019 Elevation Data: -  
Coordinate System: NAD 1983 UTM Zone 14N Datum: NAVD88  
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- |                            |                         |                            |
|----------------------------|-------------------------|----------------------------|
| Road Impact 1ft or Greater | Diversion Channel       | Non-Residential, Zone 2    |
| UMA Analysis Boundary      | Southern Embankment     | Residential, Zone 3        |
| Federal Mitigation Zone 1  | Protection Levee        | Non-Residential, Zone 3    |
| Federal Mitigation Zone 2  | CLOMR Revision Reach    | Residential, Zone 4        |
| NDSWC Mitigation Zone 3    | Counties                | Non-Residential, Zone 4    |
| MNDNR Mitigation Zone 4A   | Residential, Zone 1     | Residential, Mitigated     |
| MNDNR Mitigation Zone 4B   | Non-Residential, Zone 1 | Non-Residential, Mitigated |
| MNDNR Mitigation Zone 4C   | Residential, Zone 2     |                            |



**FM AREA  
DIVERSION**

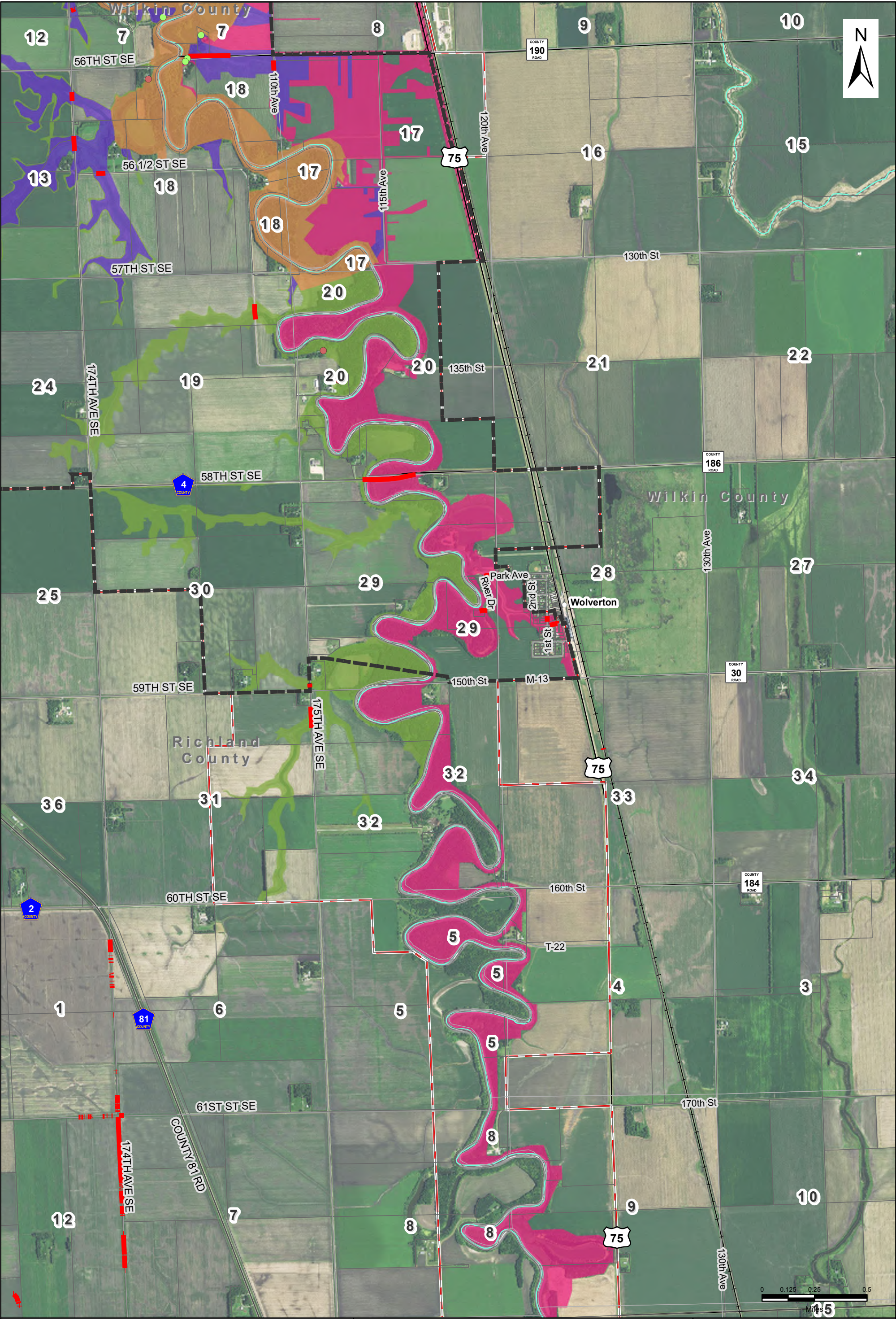












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- |                            |                         |                            |
|----------------------------|-------------------------|----------------------------|
| Road Impact 1ft or Greater | Diversion Channel       | Non-Residential, Zone 2    |
| UMA Analysis Boundary      | Southern Embankment     | Residential, Zone 3        |
| Federal Mitigation Zone 1  | CLOMR Revision Reach    | Non-Residential, Zone 3    |
| Federal Mitigation Zone 2  | Counties                | Residential, Zone 4        |
| NDSWC Mitigation Zone 3    | Residential, Zone 1     | Non-Residential, Zone 4    |
| MNDNR Mitigation Zone 4A   | Non-Residential, Zone 1 | Residential, Mitigated     |
| MNDNR Mitigation Zone 4B   | Residential, Zone 2     | Non-Residential, Mitigated |
| MNDNR Mitigation Zone 4C   |                         |                            |



**FM AREA  
DIVERSION**









# Diversion Authority Board Meeting

**Land Management Committee Update  
May 25, 2022**



# Activities and Achievements

## Land Acquisition and Property Mitigation Status



- **Acquisitions**

- Negotiations are continuing for flowage easements on the tillable farmland parcels and building sites in the UMA
- Acquired property interests on over 769 parcels (Added 13 acquisitions and resolved 8 eminent domain parcels)  
(including those acquired via last resort eminent domain, and including split parcels)

- **Appraisal Work**

- Appraisal services Task Orders for all remaining upstream structures are ready for MCCJPA and CCJWRD approval this month
- Appraisal work for SE-2B has started

- **Other Key Focus Areas**

- Supporting current eminent domain actions and settlement solutions
- Relocations and farmstead re-establishment planning (RIMP Loan Program)
- Finalized guidance document for structures sites on fringe of the UMA