

August 2024



THE FUTURE IS NOW

PERMITTING INNOVATIONS FOR P3 PROJECTS

Fargo-Moorhead Area Diversion Project | Aaron Carranza - Regulatory Division Director

DEPARTMENT OF WATER RESOURCES (DWR)



MISSION

To responsibly manage North Dakota's water needs and risks for the people's benefit.

DWR has the authority to investigate, plan, construct, and develop water-related projects and serves a regulatory role in the appropriation of the state's waters, permitting surface water infrastructure, and floodplain management.

6 DWR DIVISIONS

Administration

Atmospheric Resources

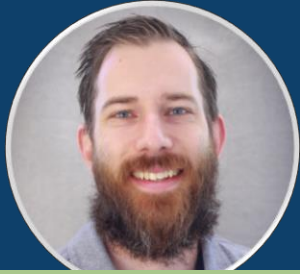
Planning & Education

Water Development

Permitting Authorities

Regulatory

Water Appropriation



MATT LINDSAY, P.E., CFM

Engineering & Permitting
Section Manager



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Water Resource Engineer



GARRETT LARSON

Water Resource Engineer



CHANCE NOLAN

Technical Specialist



COURTNEY ROGSTAD

Program Specialist



GERALD HEISER

Sovereign Land Manager



AMY JO WINKELMAN

Sovereign Land Specialist



KAREN GOFF, P.E.

Dam Safety Program
Manager



DAMON GRABOW

Water Resource Engineer



NICHOLAS BENDICKSON

Water Resource Engineer



MICHAEL HALL

Silver Jackets Program
Coordinator



LAURA HORNER, CFM

Risk MAP Program
Manager



TYLER SPOMER, CFM

National Flood Insurance
Program Coordinator



REGULATORY TEAM

Aaron Carranza, P.E., CFM | Regulatory Division Director

WHAT DO WE PERMIT?

Water Permits
(Water Use)

Floodplain Management
(State Coordinating Role)

Sovereign Lands Permits*
(Navigable Waters)

Surface Drainage Permits
(Emergency &
Statewide/Interdistrict)

Construction Permits*
(Dams, Dikes, Diversions, Flood Control Structures)

**Required For The Fargo Moorhead Metropolitan Area Flood Risk Management Project (FMM Project)*

FMM PROJECT

FMM Project is made up of several components each requiring various **CONSTRUCTION PERMITS** & **SOVEREIGN LANDS PERMITS** from our office

Southern Embankment

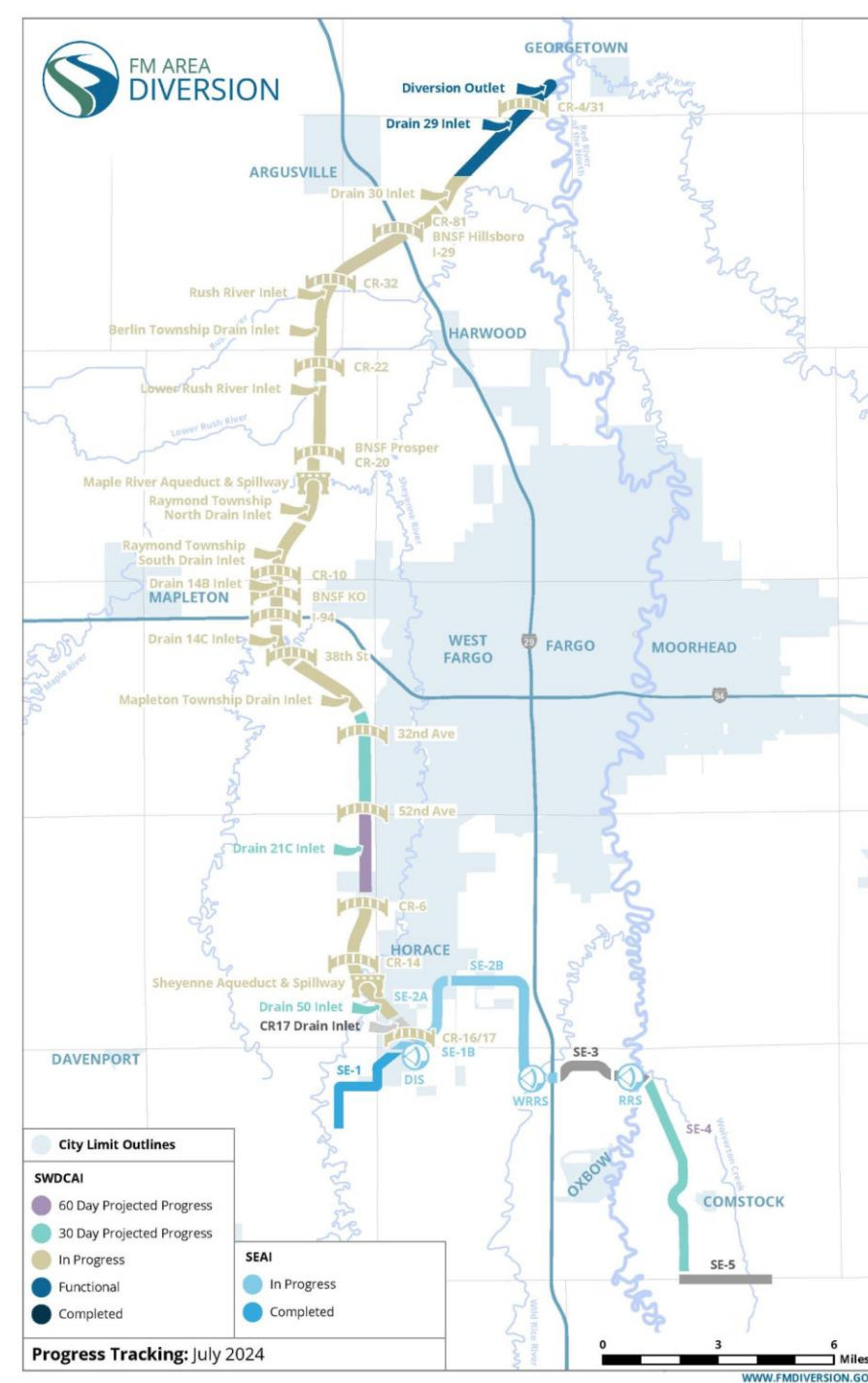
Stormwater Diversion Channel

Oxbow-Hickson-Bakke (OHB) Ring Dike

Drain 27 Wetland Mitigation Weir

I-29 Grade Raise

In-Town Dikes





PERMITTING CHALLENGES

Large, Phased Project

Crossed State Lines

Contracting

Design/Bid/Build (Traditional Permit)

Design/Build (New Territory Permitting)

Multiple Disciplines & Entities Involved

How To Address Effects From Massive Project

Oodles Of Documentation

PERMITTING FMM PROJECT

SOVEREIGN LANDS

Red River

Sheyenne River

Other Intercepted Rivers That Are
NOT Considered Navigable

Rush River

Maple River

Lower Rush River

Wild Rice River



CONSTRUCTION PERMITTING

Dams

Southern Embankment

Drain 27 Wetland Mitigation Weir

Drayton Dam

Diversions

Stormwater Diversion Channel

Dikes

OHB Ring Dike

In-Town Dikes

OVERVIEW OF PERMITTING CODES

APPLICABLE TO THE PROJECT

SOVEREIGN LANDS

- Per **N.D.C.C. § 61-33-01**, Sheyenne & Red Rivers Are Considered Navigable Waters
- Any Work Completed Within The Ordinary High Water Mark Of Either River Requires A Sovereign Lands Permit



CONSTRUCTION PERMITTING

- Per **N.D.C.C. § 61-16.1-38 And N.D.A.C. § 89-08-02-01**, Construction Or Modification Of A Dam, Dike, Diversion, Or Other Device Capable Of Retaining, Diverting, Or Obstructing More Than:
 - 50 Acre-Feet For Dikes, Diversions, Low-Hazard Dams, Or Other Devices, Or
 - 25 Acre-Feet For Medium-Hazard & High-Hazard Dams
- Dams, Dikes, & Other Devices In North Dakota Are Defined Under **N.D.A.C. § 89-08-01-01**

FMM PERMITTING CODE CONSIDERATIONS

SOVEREIGN LANDS

- Review Projects For The Benefit Of All Current And Future North Dakotans
- Impacts To The Public's Right To Use
- Public Trust Doctrine Guides DWR Management
- Aquatic And Biotic Connectivity
- Sheyenne River Aqueduct Coordination

CONSTRUCTION PERMITTING

- Construction Timeline - From 2-4 Years
- Property Rights - Evidence Of A Property Right
- Final Plans & Specs - Phased Approvals Under Umbrella
- Operation & Maintenance (O&M) Plan
- Memorandums Of Understanding (MOU's) With Local Water Resource Districts

OVERVIEW OF ANY APPLICABLE POLICIES

The Construction Permit considers hydraulic effects of project under N.D.A.C. § 89-08-02-02, including establishing a property right for the property that will be affected by the construction of a dam, dike, or other device

DWR developed state-specific guidelines to include in the Property Rights Acquisition & Mitigation (PRAM) Plan

DWR "Effects" Requirement High Points

Upstream Effects

Notification For Impacts >0.1 Feet

Mitigation For Impacts >0.5 Feet

Hydraulic Effects: Up To 1% Annual
Chance of Exceedance

Downstream Effects

Addressed By ND Legislature

ND CONSTRUCTION PERMITTING HISTORY

Late 2010s - Individual Project Phases Of Southern Embankment Were Permitted

- **Diversion Inlet Structure** - July 2016
- **Wild Rice Control Structure** - August 2019

2018 Through 2019 - Governor's Task Force - Plan B

Agency Pivoted On Permitting Methodology

Late 2019 Through 2020 - Discussions Regarding Permitting Efficiency

October 2020 - DWR Construction Permit Water Management Policy

November 2020 - Diversion Channel Umbrella Permit (CP No. 2626)

February 2021 - Southern Embankment Umbrella Permit (CP No. 2489)

CONSTRUCTION PERMIT SPECIAL CONDITIONS



Shared Special Conditions (Between Both Permits)

- PRAM Compliance
- Operation & Maintenance Plan
- Construction Within 4 Years
- Agreement Between WRDs

Permit No. 2489 - Southern Embankment

- Emergency Action Plan

Permit No. 2626 - Diversion Channel

- Technical Requirements Compliance
- Design Submittal Flowchart Compliance

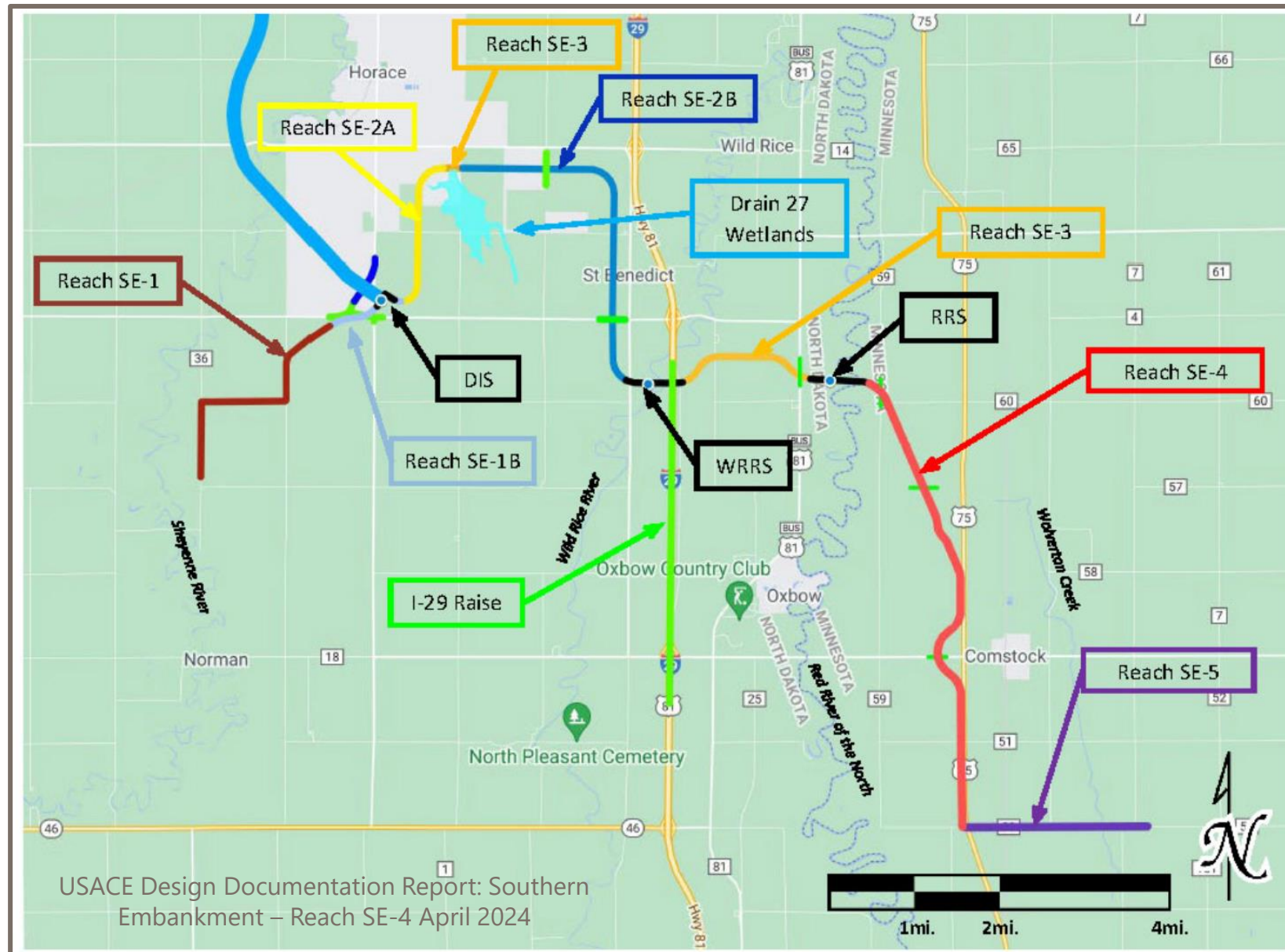
SOUTHERN EMBANKMENT

Constructed In Phases

8 Earthen
Embankment Phases

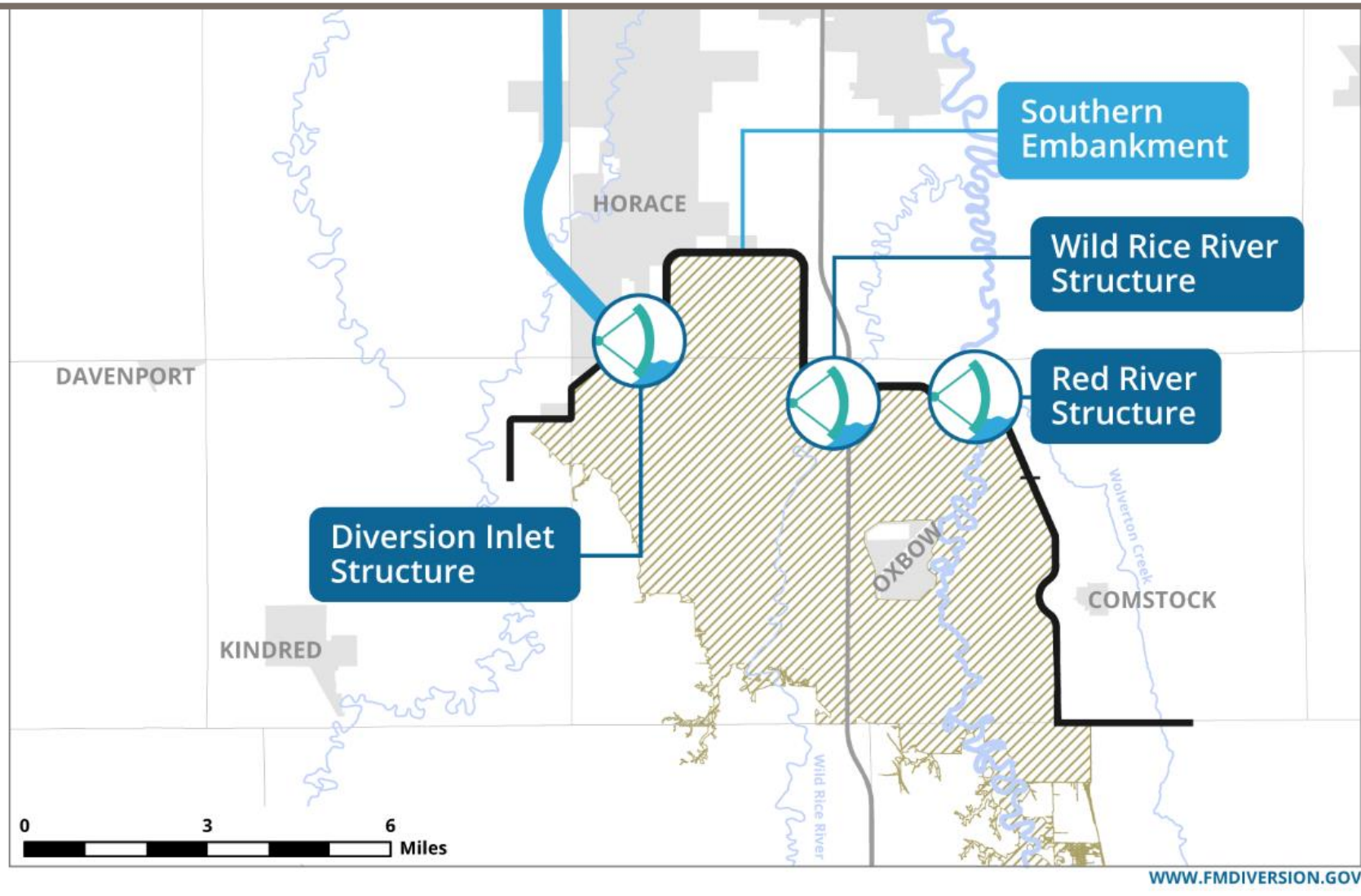
3 Gated Inlets

Each Phases Requires
DWR Approval



SOUTHERN EMBANKMENT

- Acts As A Dry Dam
- Upstream Reservoir Area Requires Mitigation Plan For Impacted Properties
- Property Rights Acquisition & Mitigation Plan (PRAM) Was Determined To Satisfy The Requirement For Evidence Of A Property Right For Property Affected By The Construction Of The FMM Project, Including The Upstream Reservoir Area (Tan)



DIVERSION CHANNEL



30-Mile Diversion Channel

- 2 Aqueducts (Maple & Sheyenne Rivers)
- 14 Drain Inlets
- 3 Railroad Crossings
- 2 Pairs Of Interstate Crossings
- 12 County Road Crossings

Public-Private Partnership (P3) Between MFDA & A Selected Developer

- Bid-Design-Build
- MFDA Selected Developer Designs, Constructs, Operates, & Maintains The Diversion
- MFDA (Applicant & Owner)
- USACE Supervisory Role

DIVERSION CHANNEL



Conditioned compliance with the Technical Requirements

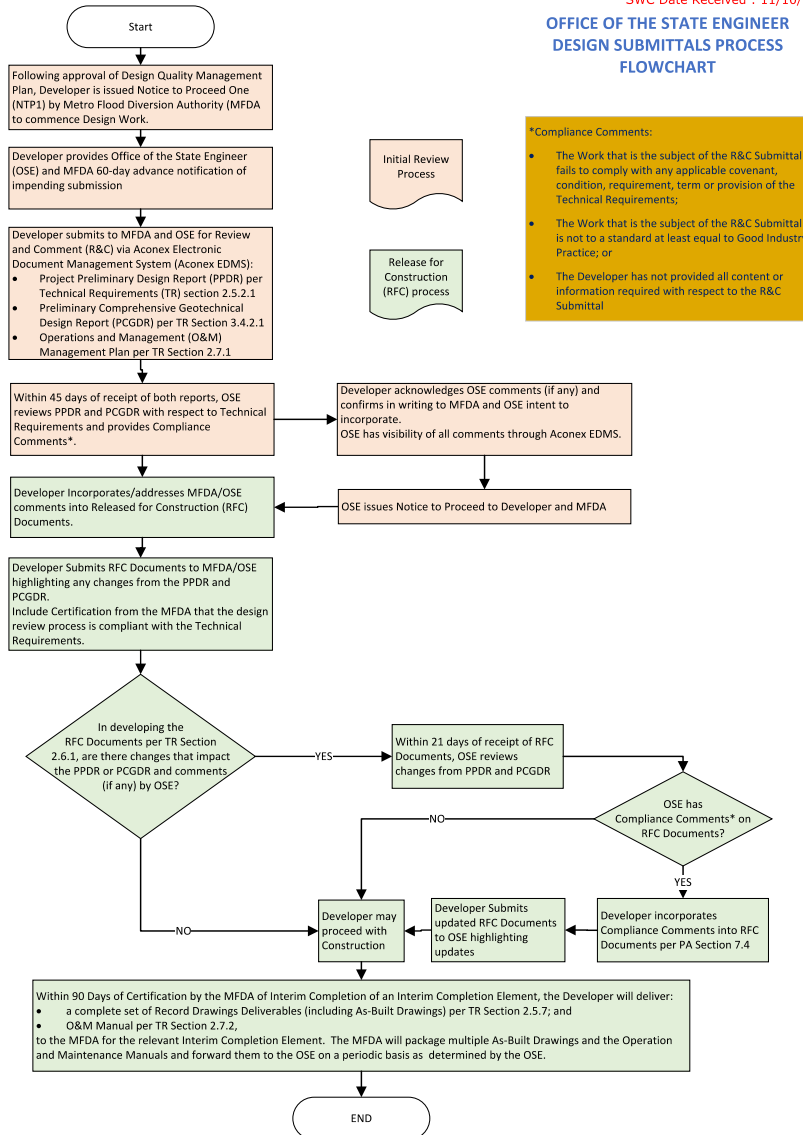
- Project Agreement – Exhibit 5 (Technical Requirements)
- Proscriptive suite of design, build, and operation requirements in place of plans and specifications.
- Contain the performance standards for the FM Diversion that a Developer will be obligated to be in compliance with when designing, constructing, inspecting, operating, and maintaining the FM Diversion.

The Department determined approval of the Technical Requirements satisfies the requirement for plans and specifications.

DIVERSION CHANNEL

SWC Date Received : 11/10/20

OFFICE OF THE STATE ENGINEER DESIGN SUBMITTALS PROCESS FLOWCHART



***Compliance Comments:**

- The Work that is the subject of the R&C Submittal fails to comply with any applicable covenant, condition, requirement, term or provision of the Technical Requirements;
- The Work that is the subject of the R&C Submittal is not to a standard at least equal to Good Industry Practice; or
- The Developer has not provided all content or information required with respect to the R&C Submittal

Conditioned compliance with the Design Submittals Process Flowchart

- Orange Boxes** – Approval process for overall design concept (PPDR, PCGDR)
- Green Boxes** – Approval process for phase approvals (Release For Construction, RFC, documents)
 - Ensure compliant with Technical Requirements (Project Agreement – Exhibit 5)
 - Ensure significant changes are highlighted for review.

MITIGATION FEATURES (PERMITTED SEPARATELY)

In-Town Levees (City Of Fargo)

Oxbow-Hickson-Bakke Ring Levee

I-29 Grade Raise

Drain 27 Weir

Drayton Dam Modification

IN-TOWN LEVEES (FARGO)

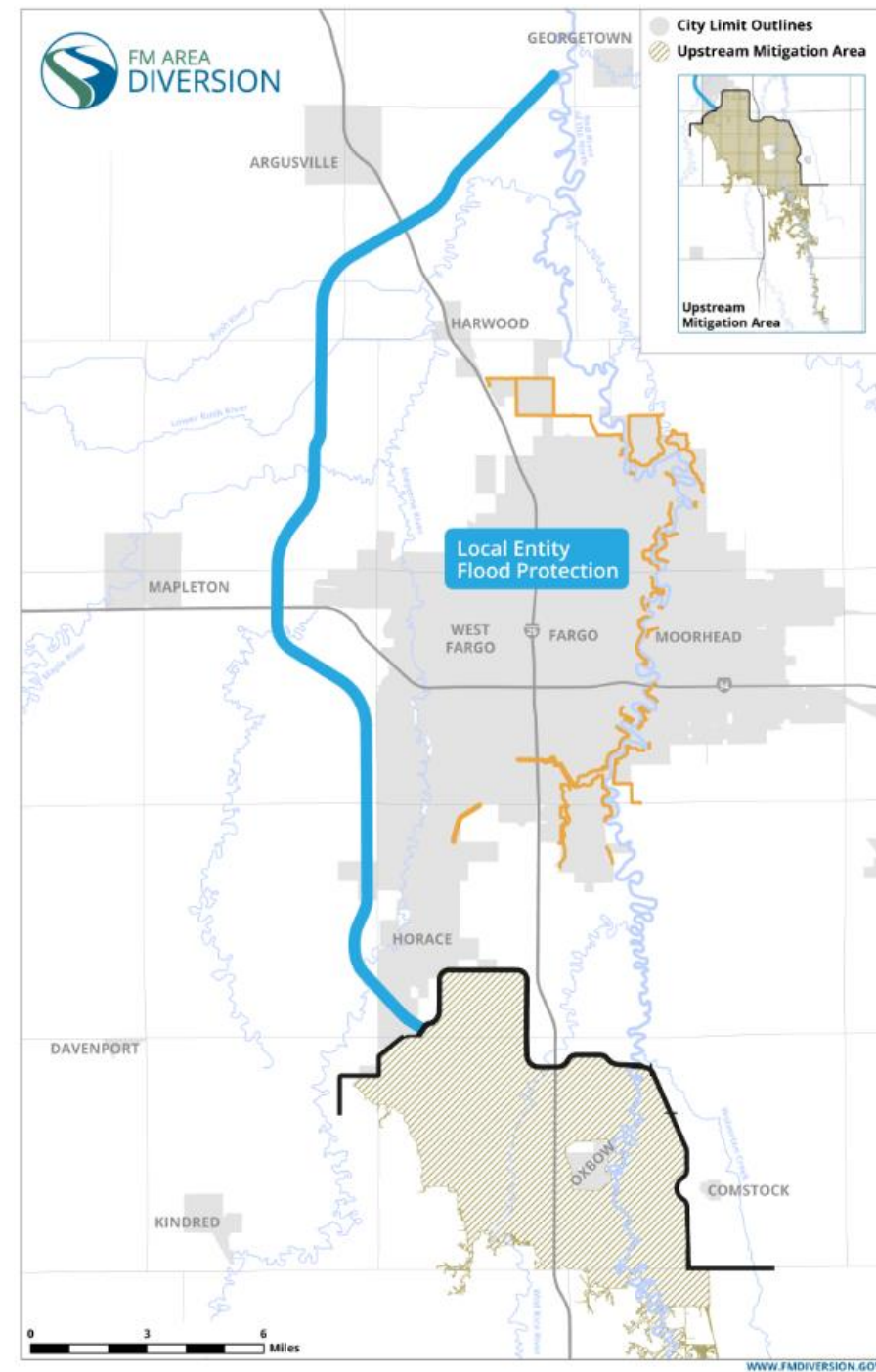
Multiple Construction Permits For In-Town Levees Shown With **Orange** Linework

Intended To Protect To A River Stage Of 37-Ft (USGS Fargo Gage) Or A 1% Annual Chance Flood Level With The FMM Project(*)

- No Emergency Flood Measures Needed At This Stage Once FMM Project Complete
- Over 28 Miles Of Levees & Floodwalls As Of May 2024

No Umbrella Permit -
Each Levee Segment Permitted Individually

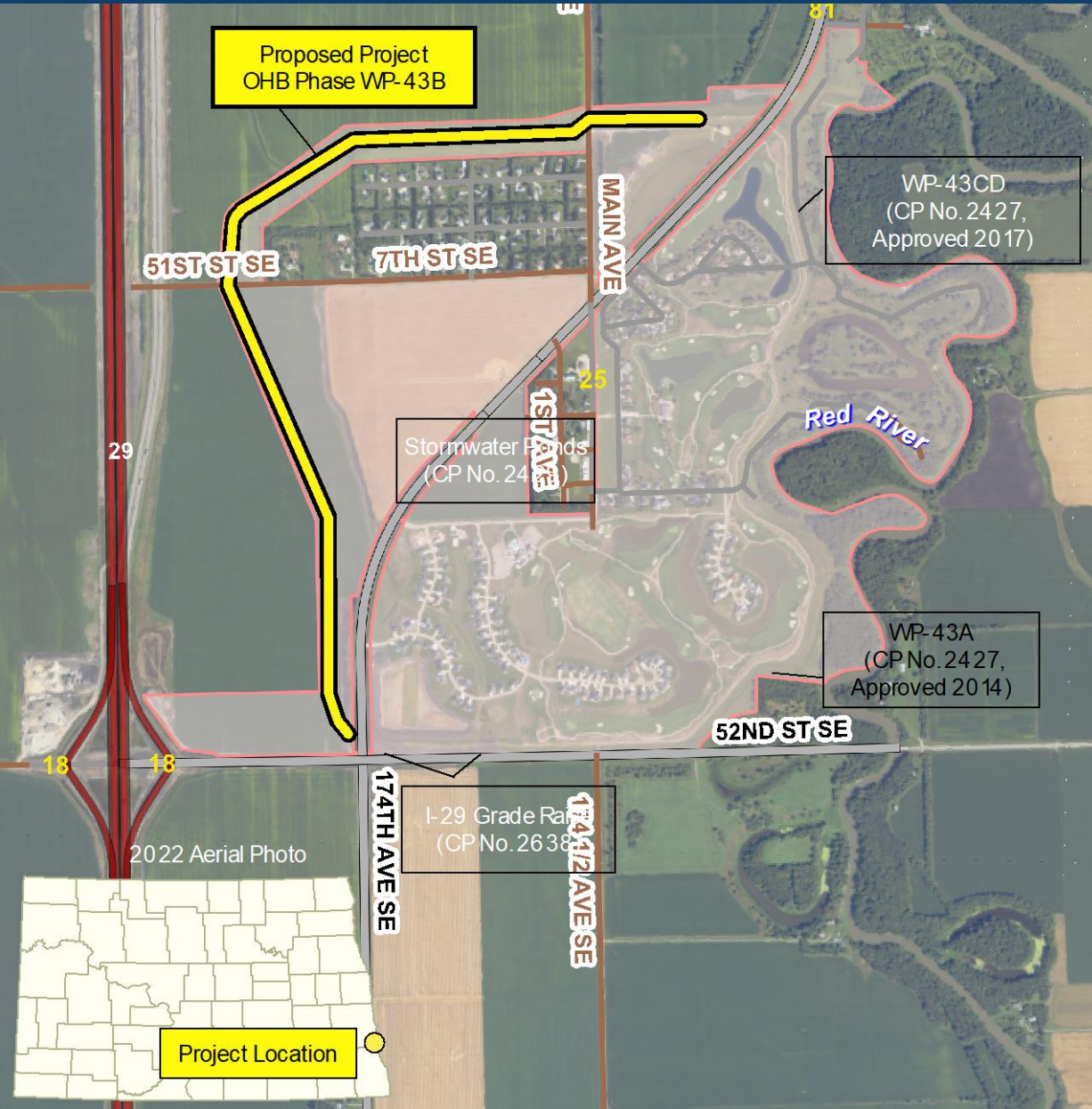
Considered By MFDA To Be Covered Under The PRAM



*City of Fargo Webpage: <https://fargond.gov/city-government/departments/engineering/flooding-flood-control/citywide-comprehensive-plan>

*Map Credit: MFDA Webpage <https://fmdiversion.gov/about/project-components>

OXBOW-HICKSON-BAKKE RING DIKE



Permitting Timeline (CP No. 2427)

Stormwater Ponds - 2014

WP-43CD (Green) - 2017

WP-43A (Orange) - 2014

WP-43B (Yellow) - 2024

Portion Permitted Under Separate Permit (Due To Timeliness)

I-29 Grade Raise (Blue) - 2021

USACE Designed & Constructed I-29 Grade Raise & WP-43B, Moore-Houston Group Designed Other Phases

MFDA (Applicant & Owner) Operates & Maintains Entirety Of OHB Ring Dike

I-29 (SOUTHERN EMBANKMENT & OHB)

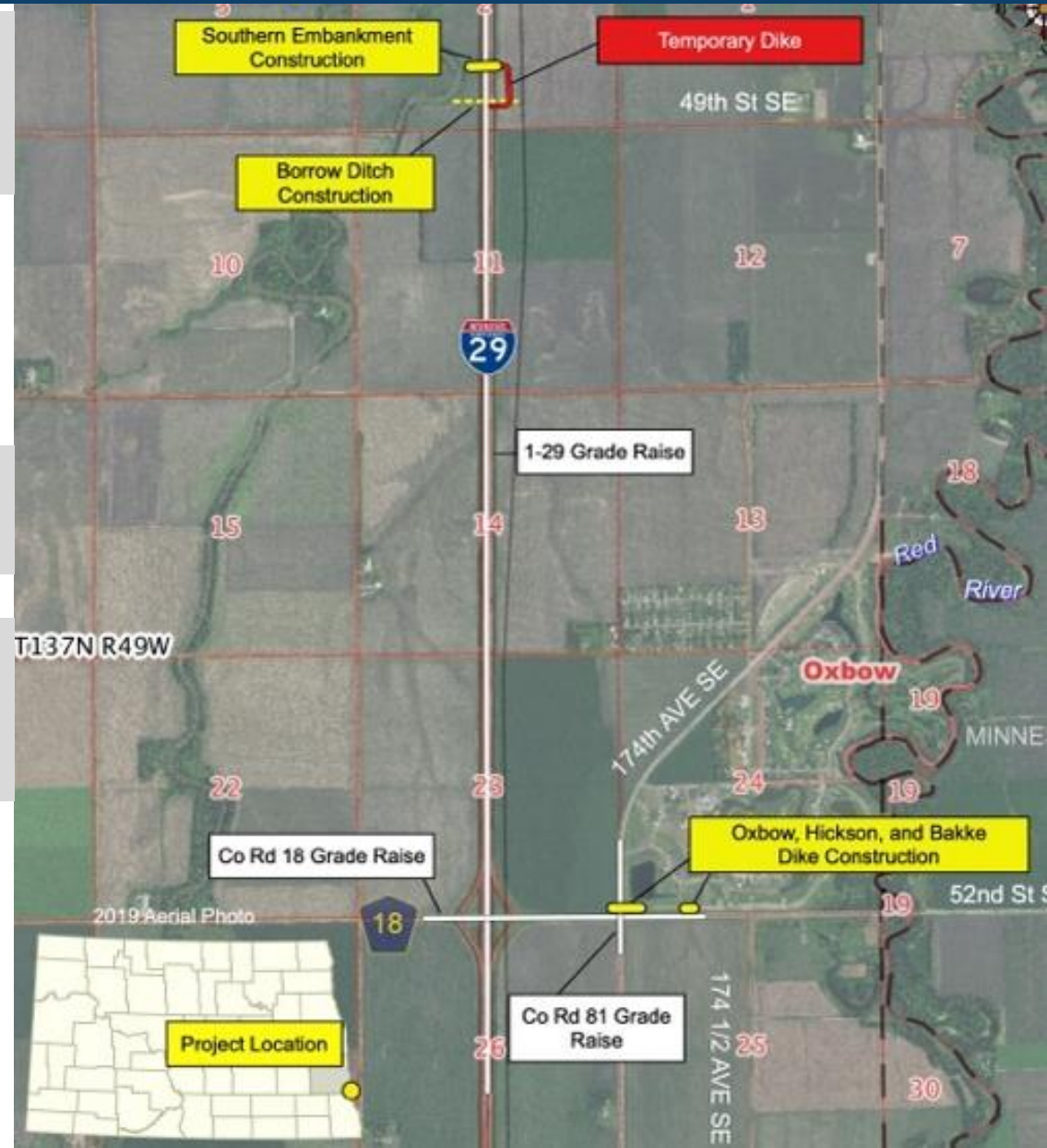
I-29 Grade Raise (White) Impacted Two Aspects Of The FMM Project (Yellow)

Southern Embankment (650 Ft)

OHB Ring Dike (240 & 600 Ft)

USACE Design & Constructs

MFDA (Applicant & Owner)
Operates & Maintains



DRAIN 27 – WETLAND MITIGATION WEIR



- Wetland Mitigation Weir - Acts As A Dam
- Purpose Is To Mitigate Wetland Impacts Caused By Construction Of FMM Projects Southern Embankment
- Reservoir Capacity To Top Of Structure - 636.5 Acre-Feet
- Max Height 6.8 Feet
- Approximately 816 Feet In Length

DRAYTON DAM MODIFICATION

- 1964 Low-head Dam For City Water Supply
- Public Safety And Biologic Connectivity Concerns
 - Over A Dozen Drownings Since Construction
- Replaced With Rock Rapids Fishway
- Construction Completion Fall 2024



ONGOING ENGAGEMENT



- P3 Technical Requirement Changes
 - Developer Requested Changes
 - MFDA Requested Changes
 - Reviewed Separately By DWR
- Release For Construction Submittals
 - Part Of The Permit No. 2626 Flow Chart
 - DWR Access To MFDA's Document Submittal Program/Process
- Mitigation Plan Compliance
 - PRAM Compliance From ND's Perspective
- In-Town Levee Permit Applications



THANK YOU



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