

# Fargo-Moorhead Metropolitan Flood Risk Management Project

**Federal Construction**

**Southern Embankment and Associated  
Infrastructure**

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**and Gwen Davis,  
Contracting/Small Business**

St. Paul District

7 June 2016



***Design details are preliminary and may change. The information presented is provided for general overview purposes only.***



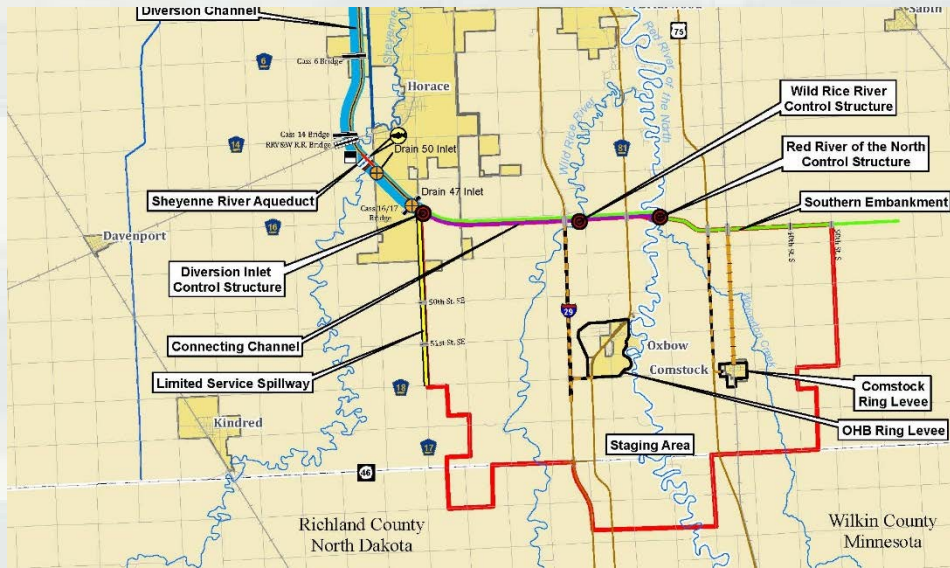
# Presentation Overview

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- Federal Components/Responsibilities
- Structural features
  - ▶ Diversion Inlet Control Structure
  - ▶ Wild Rice River Structure
  - ▶ Red River Structure
  - ▶ Southern Embankment and Limited Service Spillway
  - ▶ Road and Railroad Raises
- Mitigation Projects
- Federal Construction Schedule
- Contracting Information



# Southern Embankment Components



## ■ Federal Responsibilities

- ▶ Diversion Inlet Control Structure
- ▶ 6-mile connecting channel between the Inlet and Red River Control Structure
- ▶ Control structures on the Red & Wild Rice rivers
- ▶ 12 miles of embankments
- ▶ Limited Service Spillway
- ▶ Non-structural mitigation for impacts in the staging area
- ▶ Environmental Mitigation Projects not included in diversion channel
- ▶ Approximately 17 construction contracts



# Diversion Inlet Structure

## Project Information

- ▶ Gated control structure
- ▶ Site Preload
- ▶ Deep Mixing Method
- ▶ Pile foundation
- ▶ 3-4 year construction
- ▶ \$25 to 100 Million construction cost
- ▶ Anticipate advertise in July/August 2016
- ▶ RFP: Low Price/Technically Acceptable
- ▶ Full and Open/Unrestricted
- ▶ Organized site visit planned



View of Inlet Structure (Looking Downstream from the Embankment Area) - GATES DOWN



Inlet Structure - Aesthetic Treatments

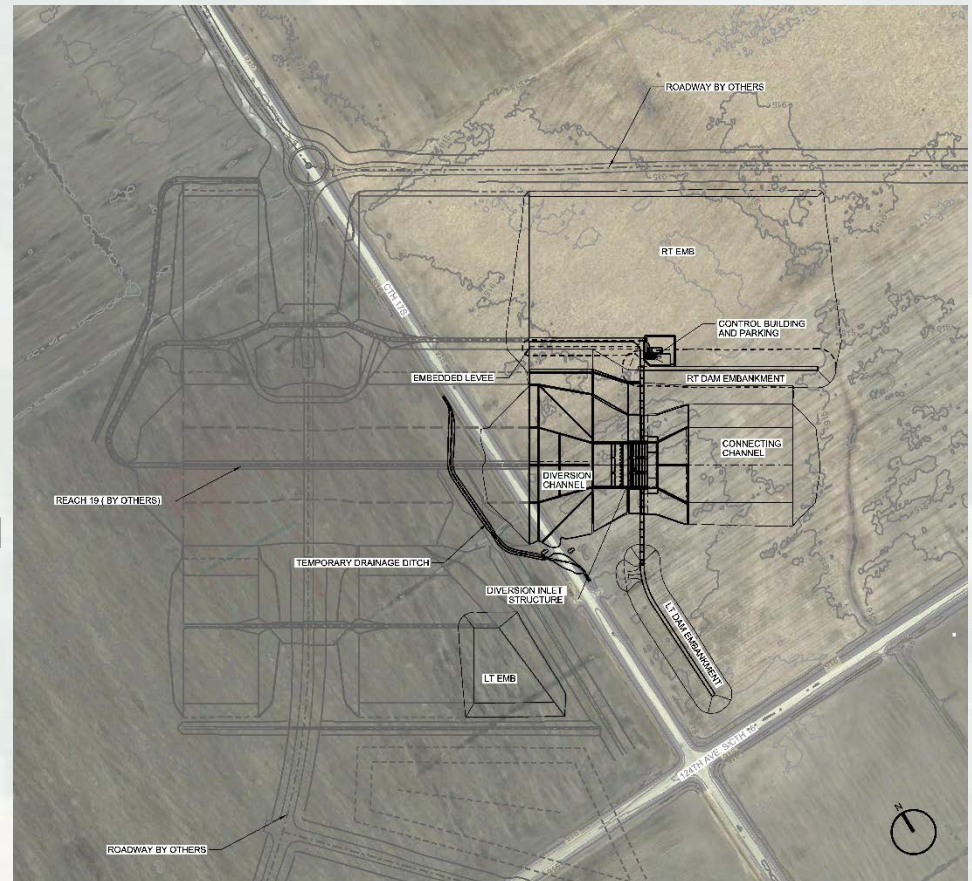
February 9, 2016



# Diversion Inlet Structure - Site Plan

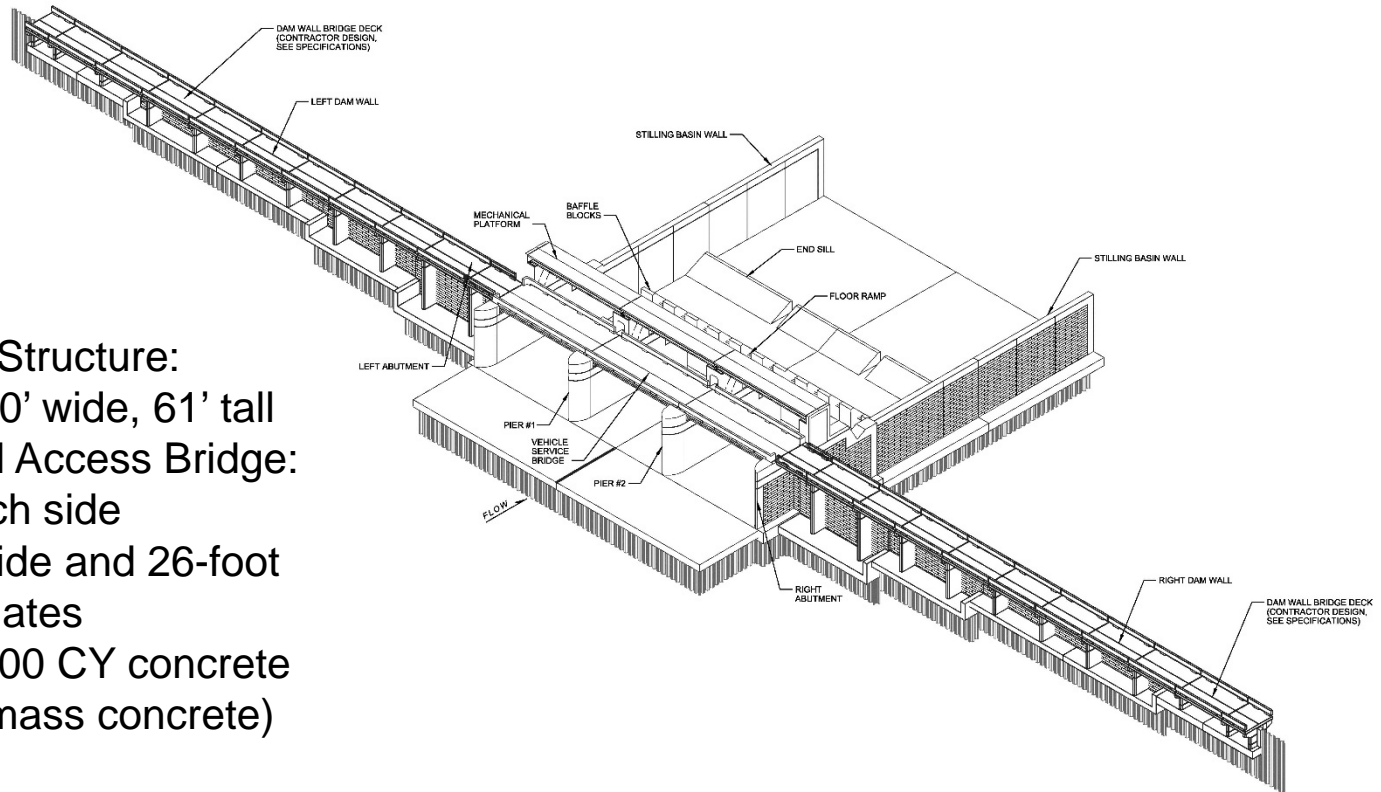
## Plan Components

- ▶ Gated control structure
- ▶ 3 Tainter gates
- ▶ Stilling basin
- ▶ Abutment walls
- ▶ T-wall type dam walls
- ▶ Separate mechanical platform and vehicle service bridge
- ▶ Control building with parking
- ▶ Approx. 1,050 feet of diversion and connecting channel
- ▶ Embedded levee within right bank EMB
- ▶ Earthen dam on right bank
- ▶ Earthen dam perpendicular to inlet structure on left bank
- ▶ Approx. 410,000 CY Excavation



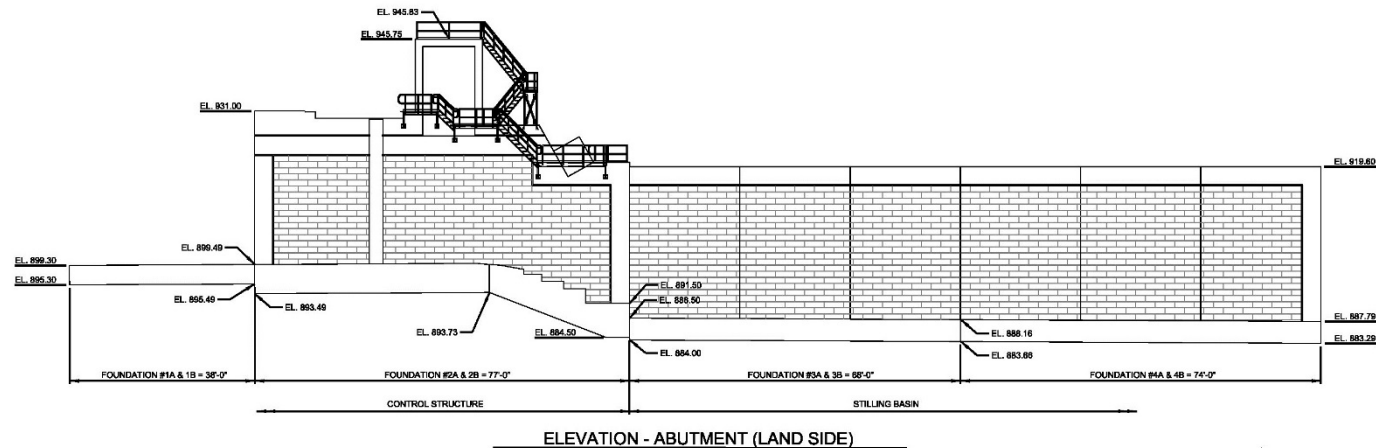
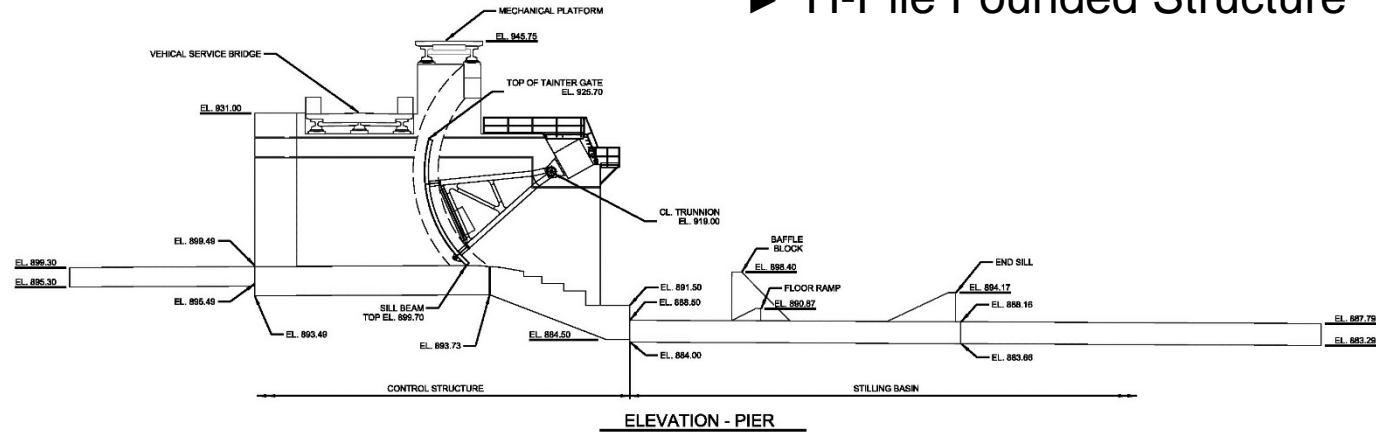
# Diversion Inlet Structure - Isometric

- ▶ Overall Inlet Structure:  
257' long, 190' wide, 61' tall
- ▶ Tie-walls and Access Bridge:  
299' long/each side
- ▶ (3) 50-foot wide and 26-foot high tainter gates
- ▶ Approx. 15,500 CY concrete  
(12,000 CY mass concrete)



# Diversion Inlet Structure Pier and Abutment Elevations

## ► H-Pile Founded Structure

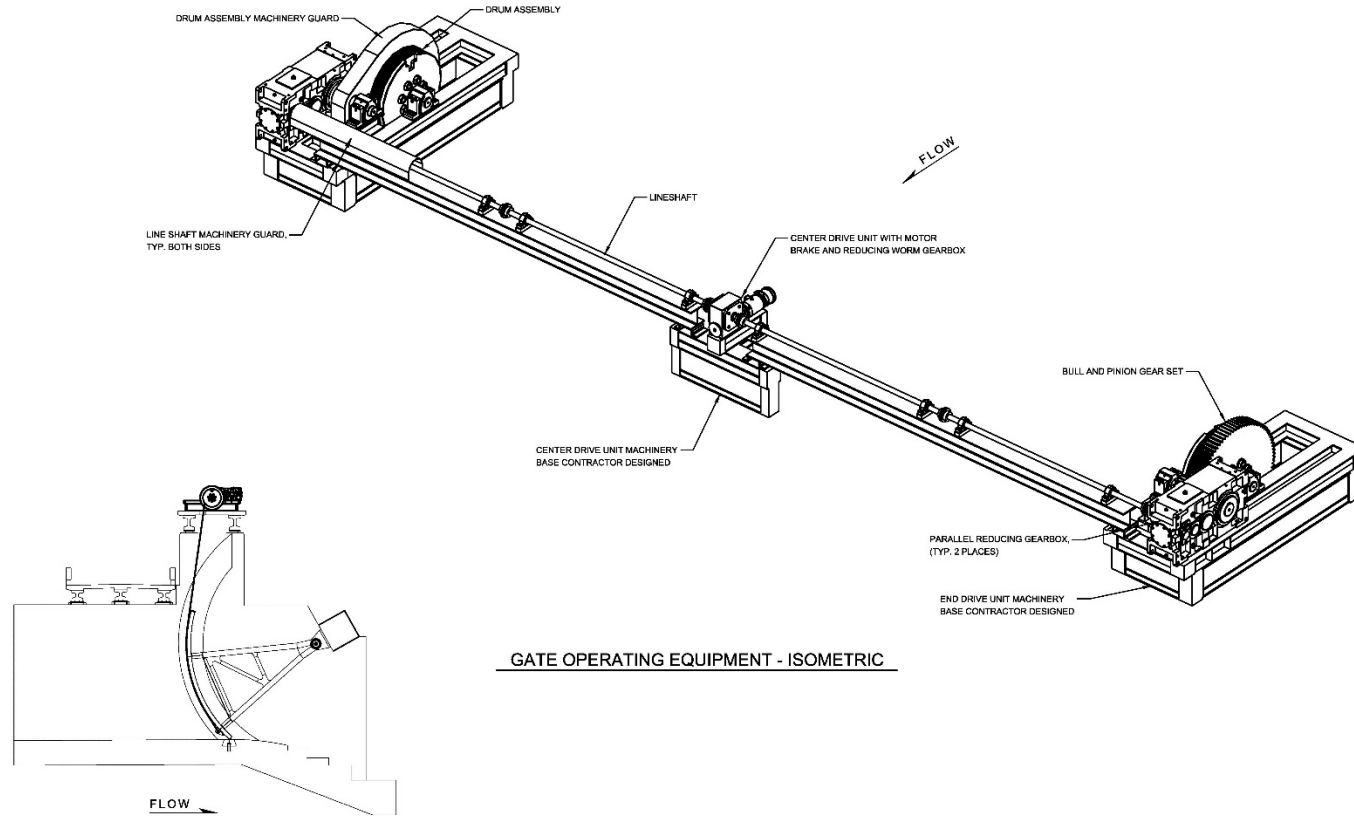


- ✓ Approx. 55,700 LF H-Pile
- ✓ Approx. 27,000 SF sheet pile
- ✓ Approx. 960 H-Piles





# Diversion Inlet Structure Tainter Gate Operating Machinery



GATE OPERATING EQUIPMENT - ISOMETRIC

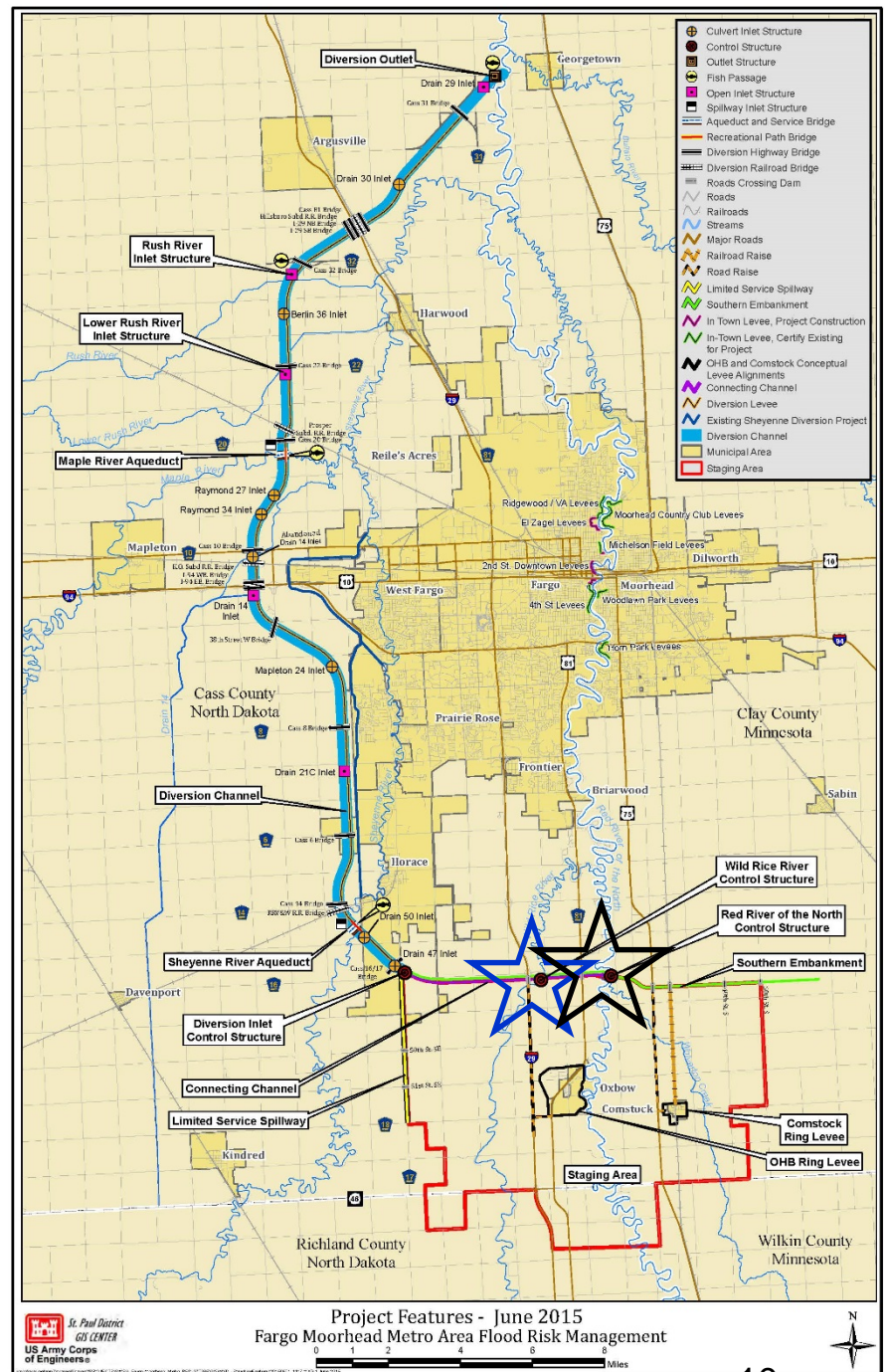
GATE OPERATING EQUIPMENT - SECTION



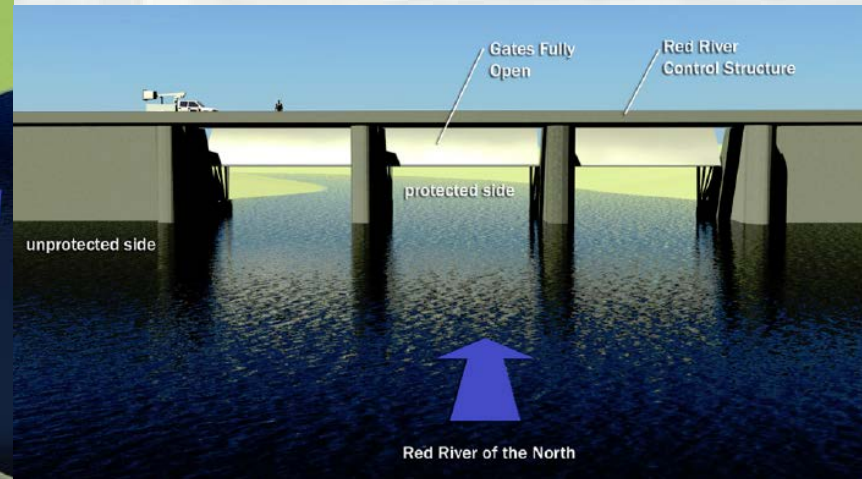
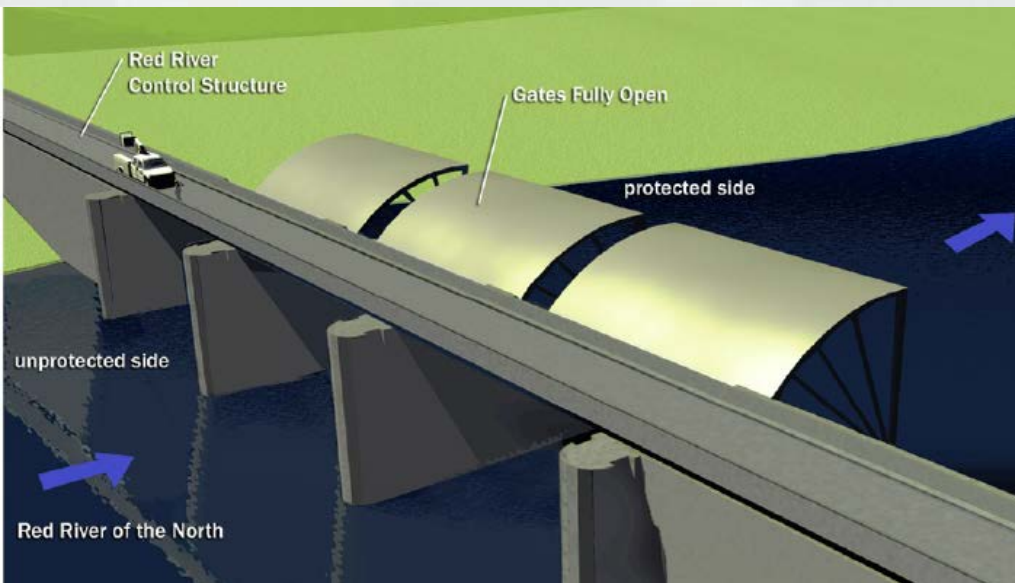
# Control Structures – Red and Wild Rice Rivers

- Wild Rice River Structure
- Red River Structure
- Similar to the Diversion Inlet Structure

- Operable gates
- Limit flow passing into the metro area



# Gated Control Structure – Wild Rice River

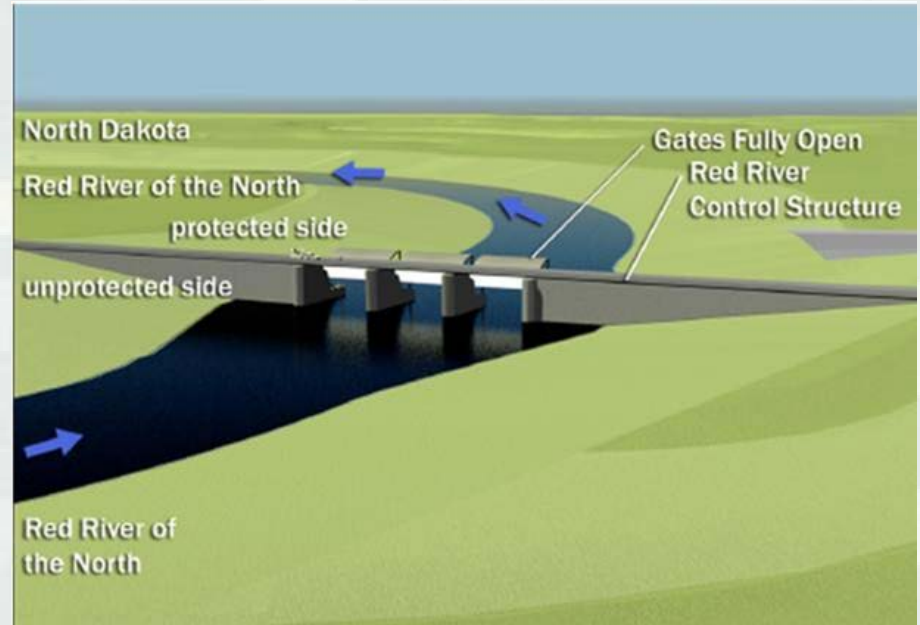
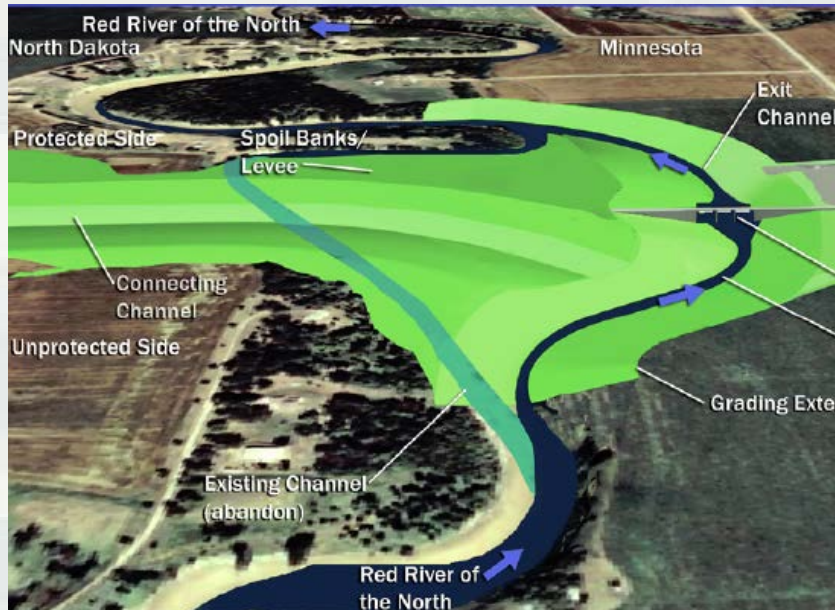


Red River Control Structure visualization (gates open-project not in operation)

- ▶ Started detailed design in May 2016
- ▶ 2 Tainter Gates: 30 ft x 30 ft
- ▶ 100-year flow: 6000 cfs
- ▶ \$25 to 100 Million approximate cost



# Gated Control Structure – Red River



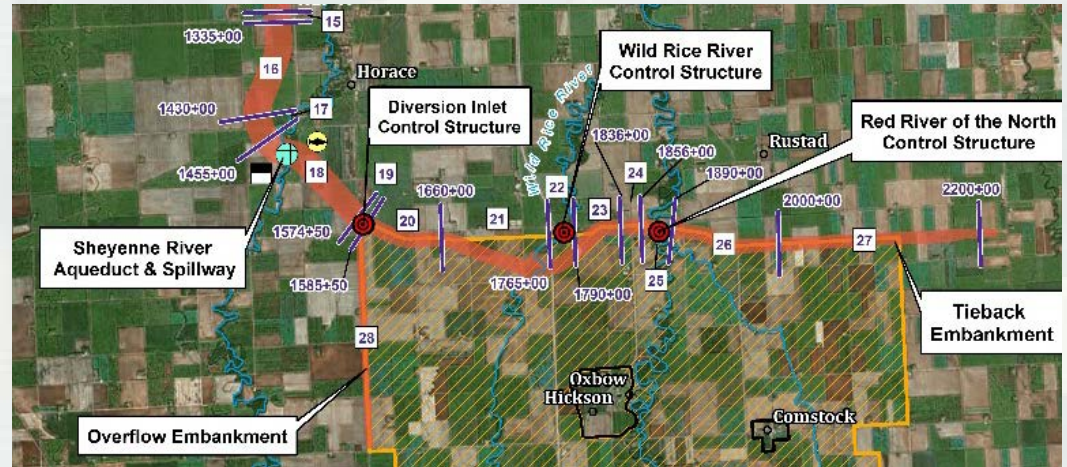
Red River Control Structure visualization (gates open – project not in operation)

- ▶ Conceptual design
- ▶ 3 Tainter Gates: 50 ft x 47 ft each
- ▶ 100-year Flow: 11,000 cfs
- ▶ \$25 to 100 Million approximate cost



# Embankment Reaches

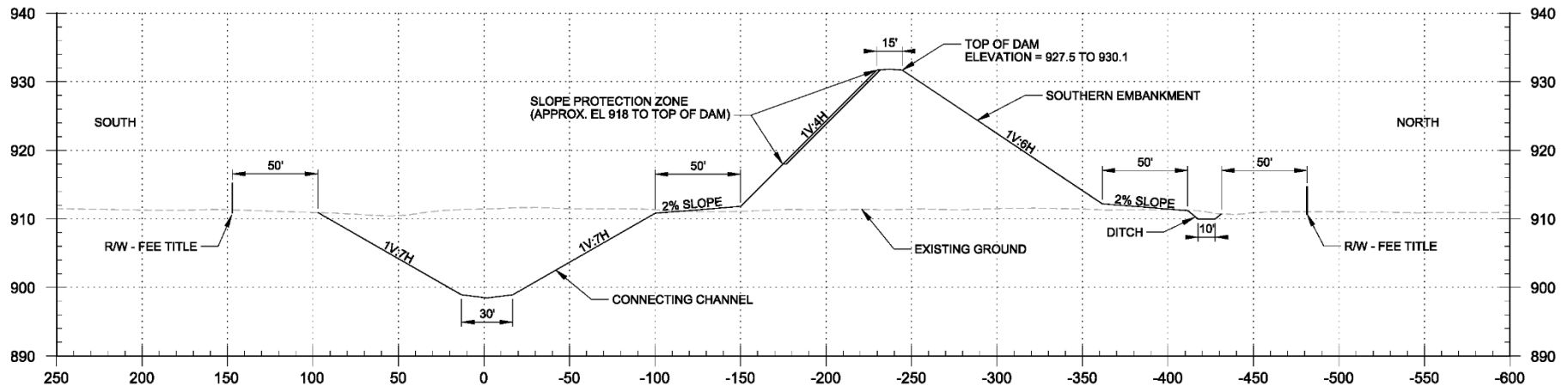
- ▶ Designed using Corps Criteria for Dams
- ▶ Likely bid as 6 separate construction contracts
- ▶ Construct embankments in Minnesota first
- ▶ Limited Service Spillway last



Embankment	Reach	Total Embankment Length (ft)
MN Embankment Reach 26 (MN)	Reach 26	11,000
MN Embankment Reach 27 (MN)	Reach 27	10,000
ND Embankment Reach 23 (ND)	Reach 23	6,000
ND Embankment Reach 20 (ND)	Reach 20	8,100
ND Embankment Reach 21 (ND)	Reach 21	10,500
ND Overflow Embankment Reach 28 (ND)	Reach 28	22,521



# Southern Embankment

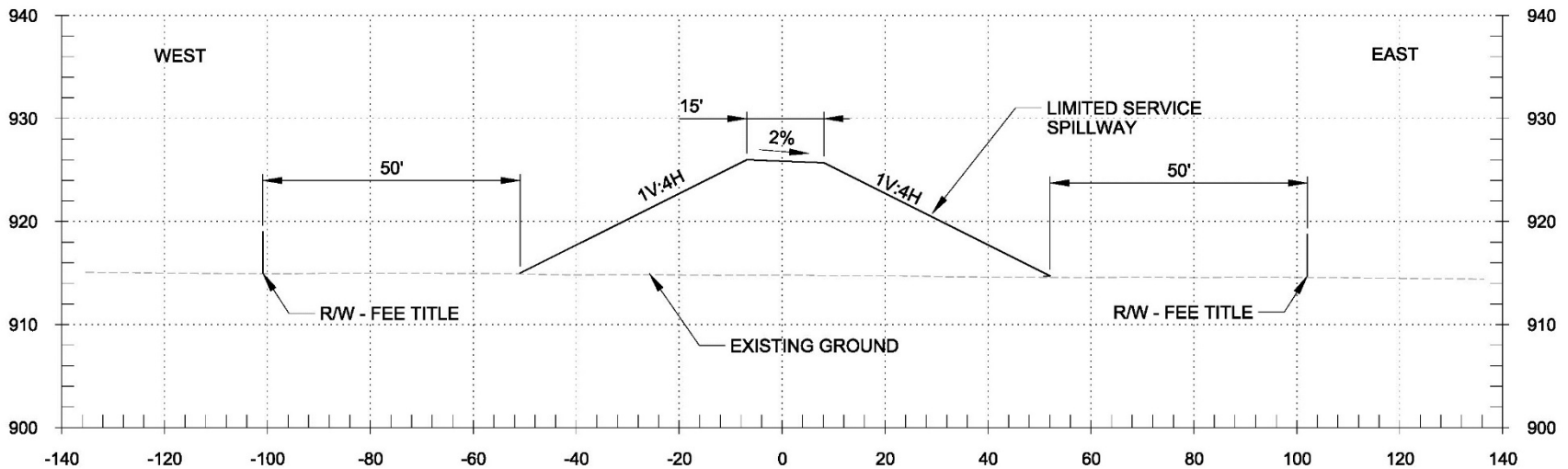


Inlet Structure to Wild Rice River  
<20' Dam Embankment Height

- ▶ Typical Cross sections between Inlet and Wild Rice Control Structure
- ▶ Includes Connecting Channel
- ▶ Approx. 3,800,000 CY impervious fill
- ▶ Approx. 500,000 CY topsoil



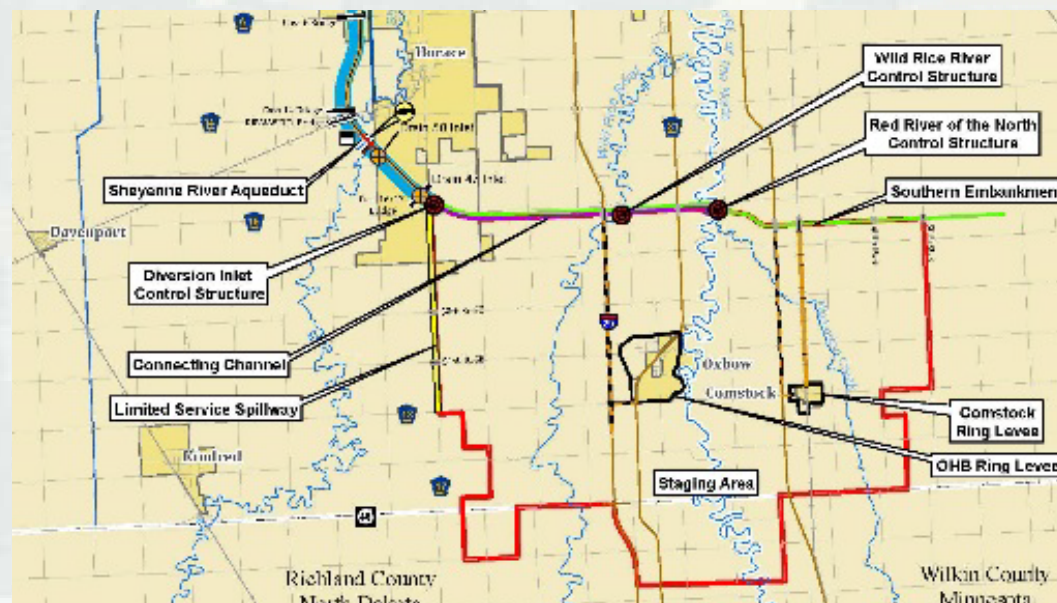
# Limited Service Spillway



- ▶ Typical Cross Section – Limited Service Spillway
- ▶ Also known as “Overflow Embankment”
- ▶ Located along County Road 17
- ▶ Height <math>< 10'</math>
- ▶ Approx. 100,500 CY impervious fill
- ▶ Approx. 18,000 CY topsoil



# Road and Railroad Raises



- ▶ Required to maintain connectivity across Southern Embankment and in Staging Area
- ▶ I-29 Bridges and Road Raise
- ▶ County Road 81 Bridge and Road Raise
- ▶ BNSF Moorhead Line Grade Raise
- ▶ Highway 75 Road Raise and Culvert
- ▶ \$25 to 100 Million in construction costs





# Environmental Mitigation Projects

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- Drayton Dam Fish Passage – Fish Passage/biotic connectivity
- Wild Rice Dam Fish Passage– Fish Passage/biotic connectivity
  
- Additional mitigation projects will be identified in the future to include
  - ▶ floodplain forest restoration
  - ▶ aquatic habitat
  - ▶ wetland mitigation

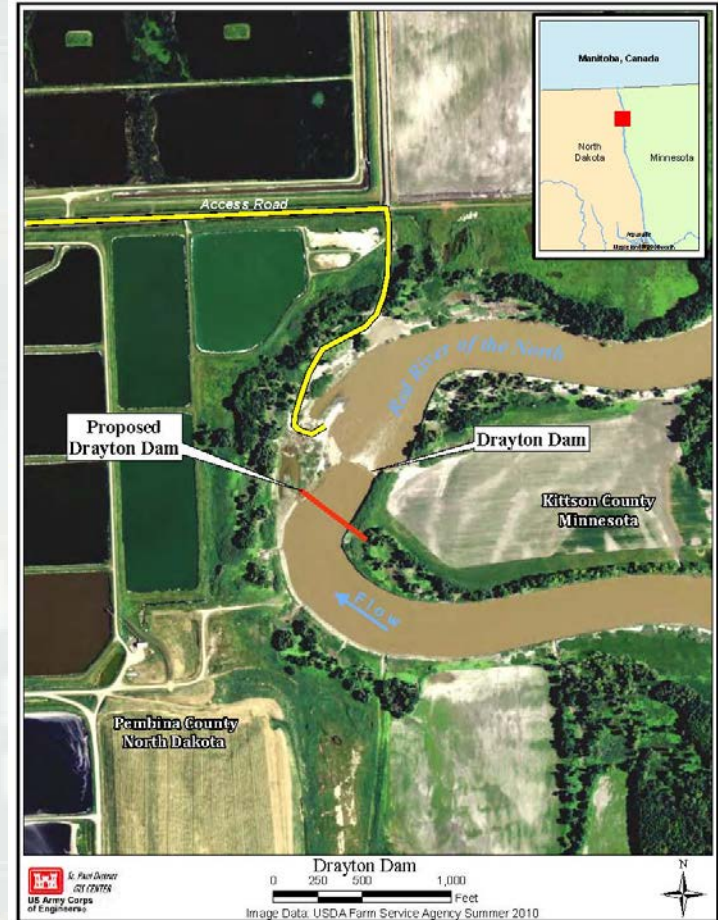


# Drayton Dam Fish Passage

- ▶ Construct new rock ramp fishway structure with sheetpile cutoff – 300 ft upstream of existing dam
- ▶ Approximate Construction Cost: \$5 to 10 Million



Drayton Dam, ND

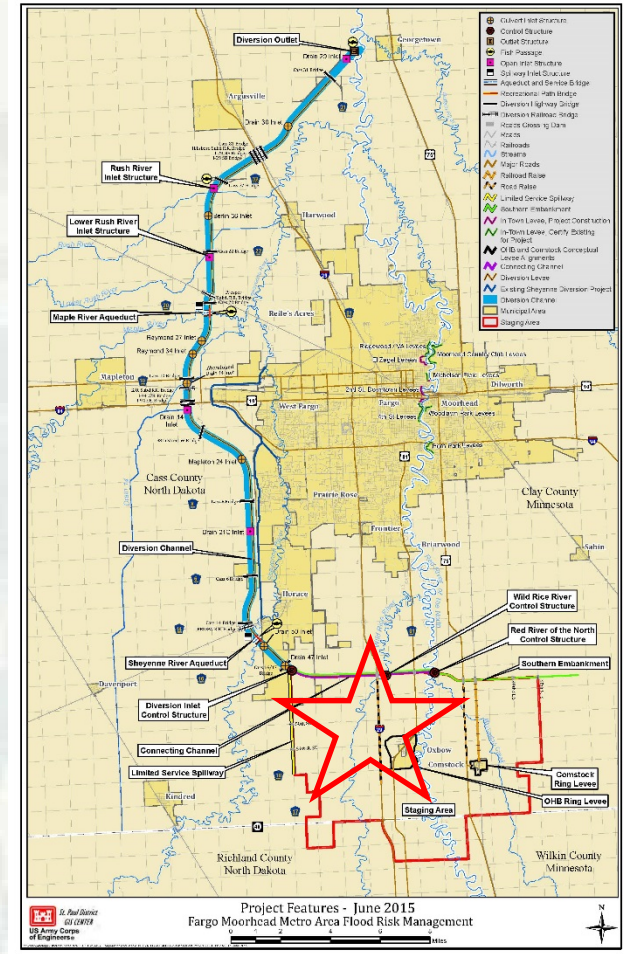


# Wild Rice Dam Fish Passage

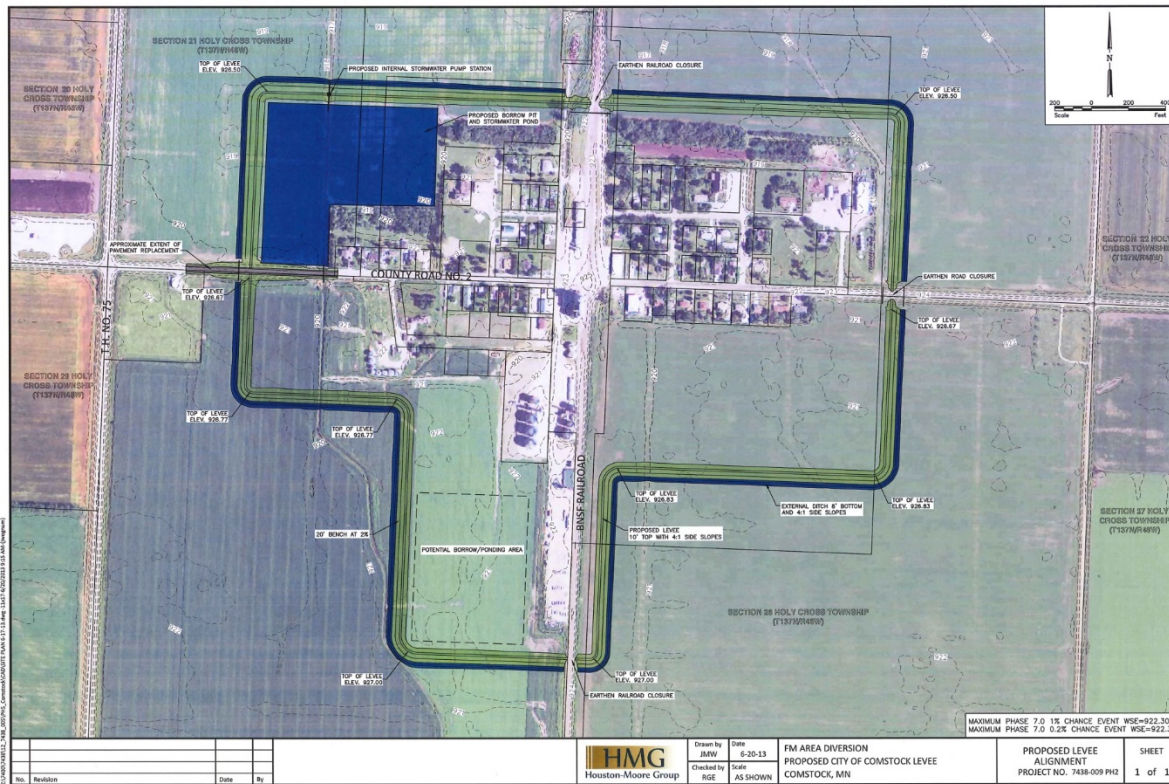
- ▶ Dam removal
- ▶ Existing dam: rock-filled, timber-crib, concrete capped. Spillway of 140 ft.
- ▶ Approximate Construction Cost: \$500k to 1 Million



Wild Rice Dam, ND



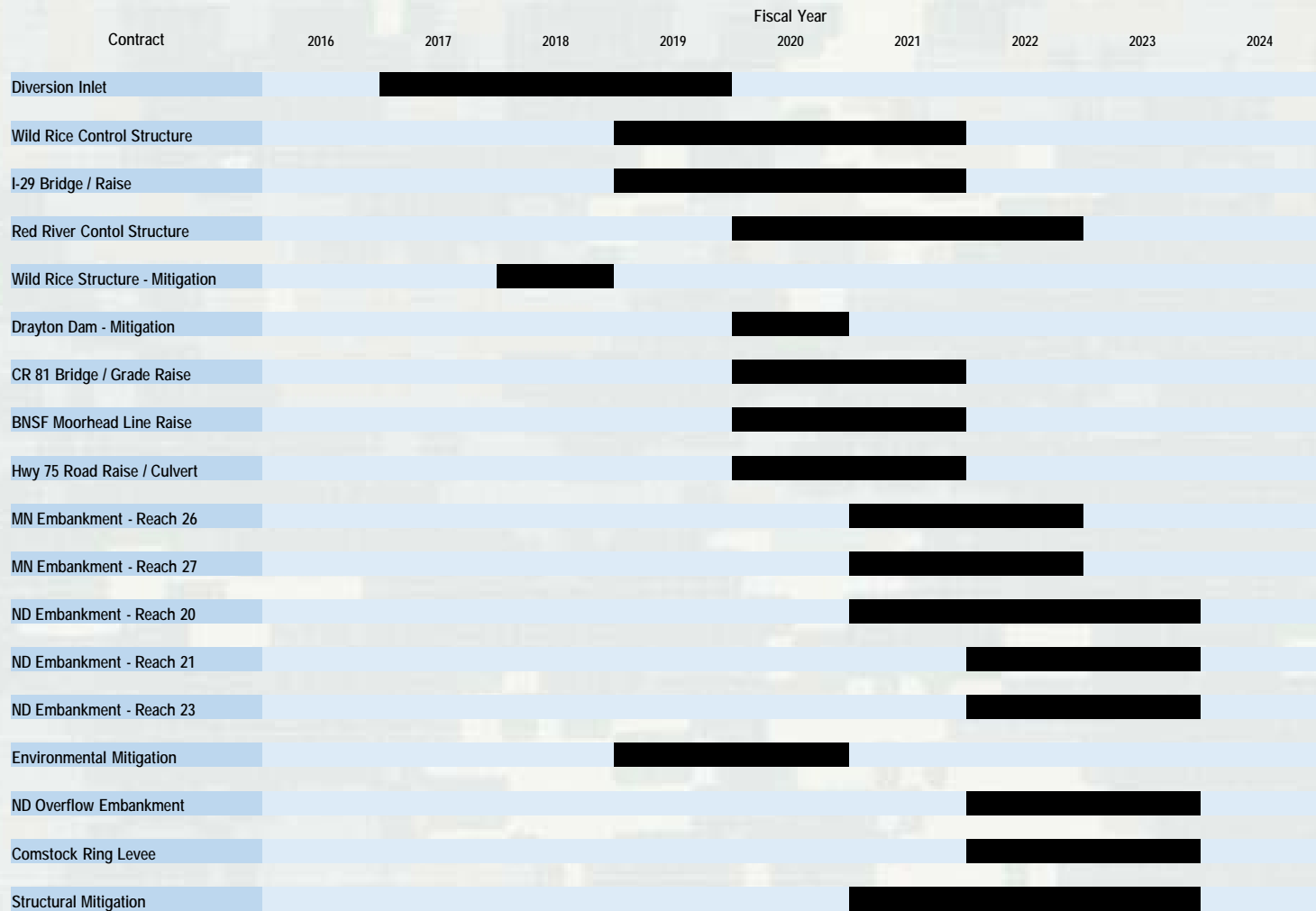
# Comstock, MN Ring Levee



- ▶ Required to mitigate upstream stage increases caused by Project
- ▶ Average levee height: 6 feet
- ▶ Interior drainage and pump station
- ▶ Estimated cost \$5 to 10 Million



# Federal Construction Schedule



■ Federal schedule assumes ideal funding stream – will change!



# Contracting with the Corps

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- Gwendolyn Davis  
Contracting Specialist/Small Business



# System for Award Management

- <https://www.sam.gov>.
- Must have DUNS and CAGE prior to establishing account
- Required for all federal contracts
- Free registration
- Reps and Certs and NAICS
- PTAC can provide assistance



# FedBizOpps

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## Different types of postings

- Sources Sought
- Pre-solicitation
- Solicitation
- Amendment
- Awards





 Search more than **29,500\*** active federal opportunities.


Posted Date:

Set-Aside Code:

Place of Performance:  Type:

Keyword / Solicitation #:  Agency:

Additional criteria and multiple selections are available on the [advanced search form](#).  
\* Notices posted within the last 90 days.

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Use [Adobe Acrobat Reader](#) to view files in PDF format.



# Solicitation Posted to FBO

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- ▶ [www.fbo.gov](http://www.fbo.gov) (Federal Business Opportunities)
- ▶ Pre-solicitation notices, solicitations, other announcements
- ▶ Search, Watched List, Interested Vendors
- ▶ If looking for St. Paul Corps Projects, use “W912ES” or USACE for Corps wide




### ALL FILES

#### [Solicitation 1](#)

Apr 13, 2012

 [12-B-0008 Velva Leve...](#)

 [VAL12 PLANS 11x17.pd...](#)


 [VAL12 PLANS 22x34.pd...](#)

 [VAL12 REFERENCE DRAW](#)

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#### [Amendment 1](#)

May 01, 2012

 [12 B-0008 Velva Amen...](#)

 [STORM DRAINAGE UTILI...](#)

 [FES Detail.pdf](#)

 [Revised CS304---.pdf...](#)

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#### [Bid Abstract](#)

May 16, 2012

 [Velva 12-B-0008 Bid ...](#)

### GENERAL INFORMATION

Notice Type:

Award



# Subcontracting Plan

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- Acceptance of subcontracting plan required prior to award (if contract value is greater than \$1.5 Million for Construction)
- Approved by the Small Business Administration and verified by the Contracting Officer

**Subcontracting Plans are not required for:**

**Personal Services**

**Small Business**



# Regulations

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- Federal Acquisition Regulation

<http://www.acquisition.gov/far/>

- DoD FAR Supplement
- Army FAR Supplement

- All can be found at <http://farsite.hill.af.mil>



# RECAP/Reminders

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- Make sure SAM is current
- Visit the work site
- Ask questions if you have them (Bidder Inquiry)
- Make sure bid/proposal is submitted on time
- Not by fax or electronically (unless expressly authorized - check the clauses)



# RECAP/Reminders

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Whether Bid or Proposal-

- Read through the requirements
- Acknowledge any Amendments and sign the SF1442 or SF1449
- Include the completed Bid/Pricing Schedule
- Make sure to include a bid bond (names match, proper entity identification)



# Questions

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- Corps staff available for questions after session
- Responses will be limited due to pending contracting actions

