

# Goose Prairie WMA Enhancement Project

Preliminary Resolution Hearing  
April 11 2018



Houston Engineering Inc.

Fargo, ND | HEI No. 1432\_354  
February 13, 2018



PRELIMINARY RESOLUTION REPORT  
GOOSE PRAIRIE WMA  
ENHANCEMENT PROJECT  
Wild Rice Watershed District

# Goose Prairie WMA Enhancement Project

- \* **Initiation** - Project being initiated under Minnesota Statutes 103D.601
  - \* The preliminary resolution hearing notice must contain:
    - \* (1) the date, time, and place of hearing;
    - \* (2) the substance of the proposed project resolution;
    - \* (3) the means of financing the project; and
    - \* (4) a statement that all persons who might be affected by the proposed project or who may be interested in the proposed project may appear and be heard.
- \* **Final resolution.** If, after the hearing, the managers determine that the proposed project promotes the public interest and welfare and is practicable and in conformity with the watershed management plan of the watershed district, the managers must adopt a final resolution approving the project and identify the proceeding by name and number. When a final resolution is adopted, the proceeding must continue as provided for a project initiated by a petition.

Preliminary  
Resolution  
Hearing (Now)

Preliminary  
Design (2018)

Final Project  
Hearing (2018)

Plans/  
Specifications/  
Land Acquisition  
(2018-19)

Construction  
(2019)

# LOCATION

Figure 1

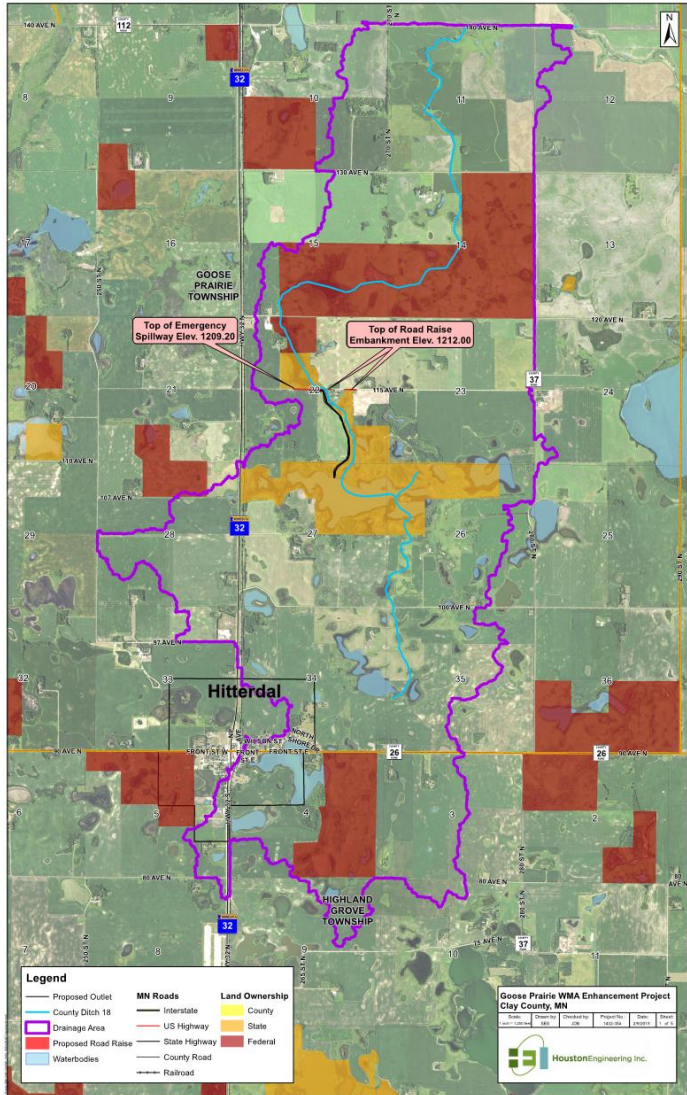
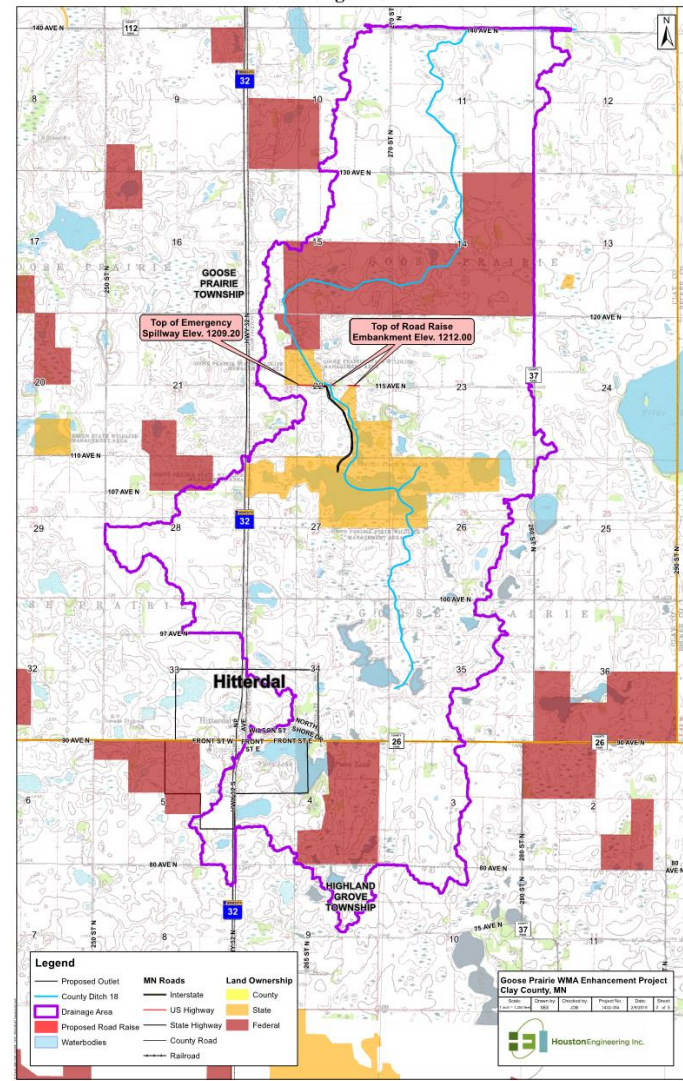


Figure 2



# PURPOSE/FUNCTION

## Background Issues

- \* High water levels – surrounding drainage issues
- \* High water levels – reduced habitat quality
- \* Downstream flooding

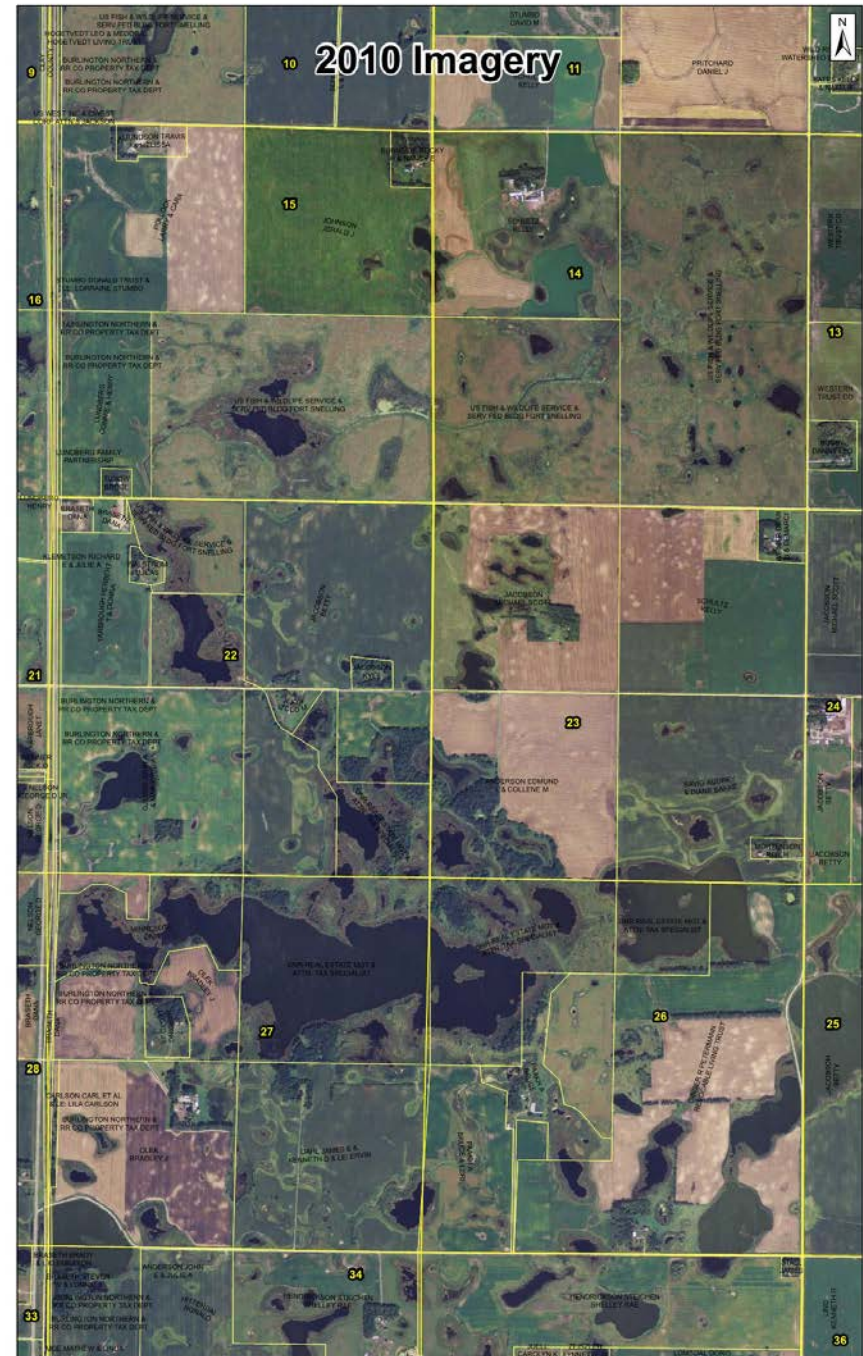
## From Report

- \* “primary purpose for the project is to improve wildlife habitat conditions in Goose Prairie Marsh”
- \* “reducing the risk of downstream local and regional flooding damage”
- \* “and maintaining an adequate outlet for upstream landowners”

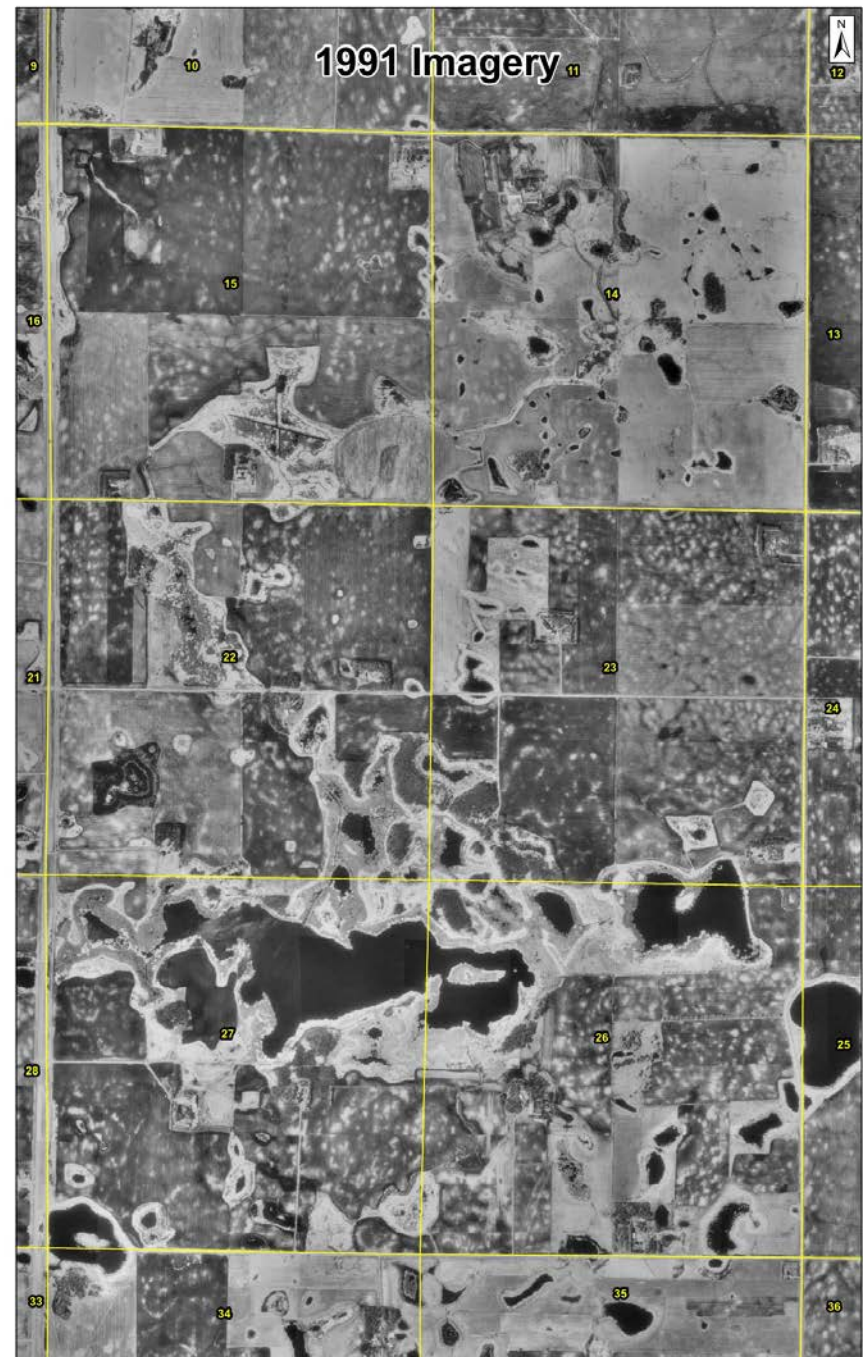
# Past Lake Levels

## DNR Survey Information Notes:

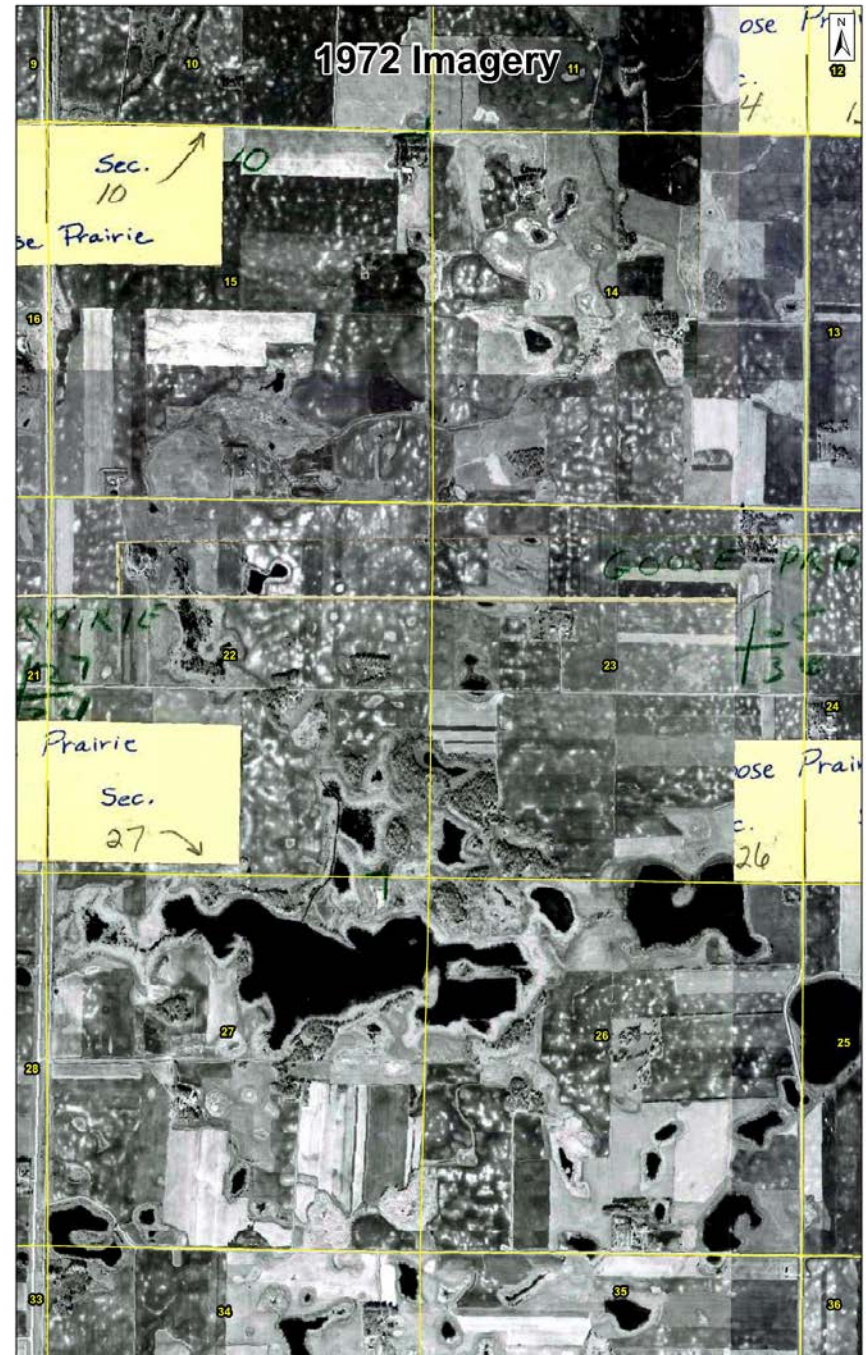
Date of Survey	Water Surface Elevation	Survey Max Depth	Survey Mean Depth
July 2009	1206.91	7.0 feet	4.8 feet
July 2012	1205.23	5.5 feet	3.5 feet



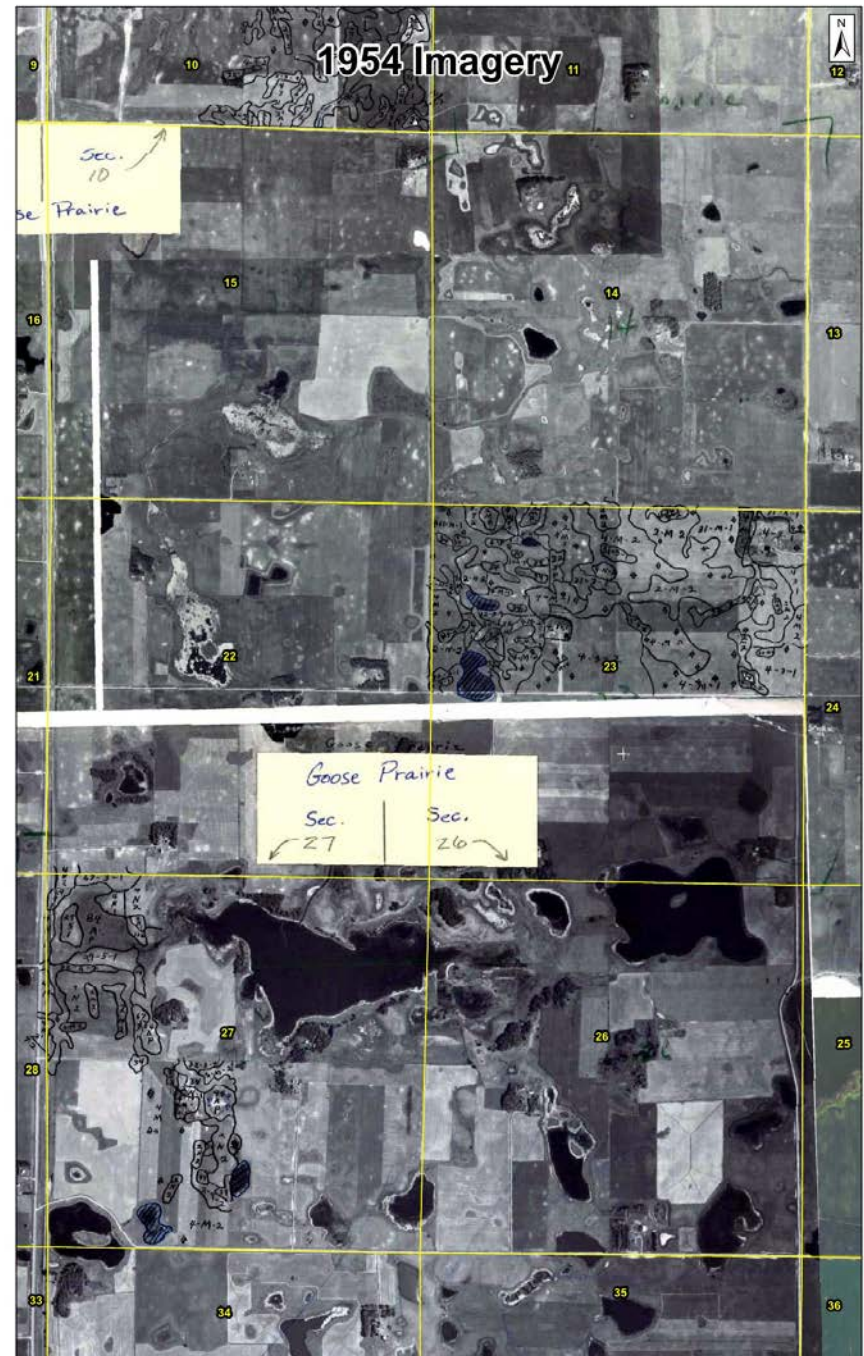
# Past Lake Levels



# Past Lake Levels



# Past Lake Levels



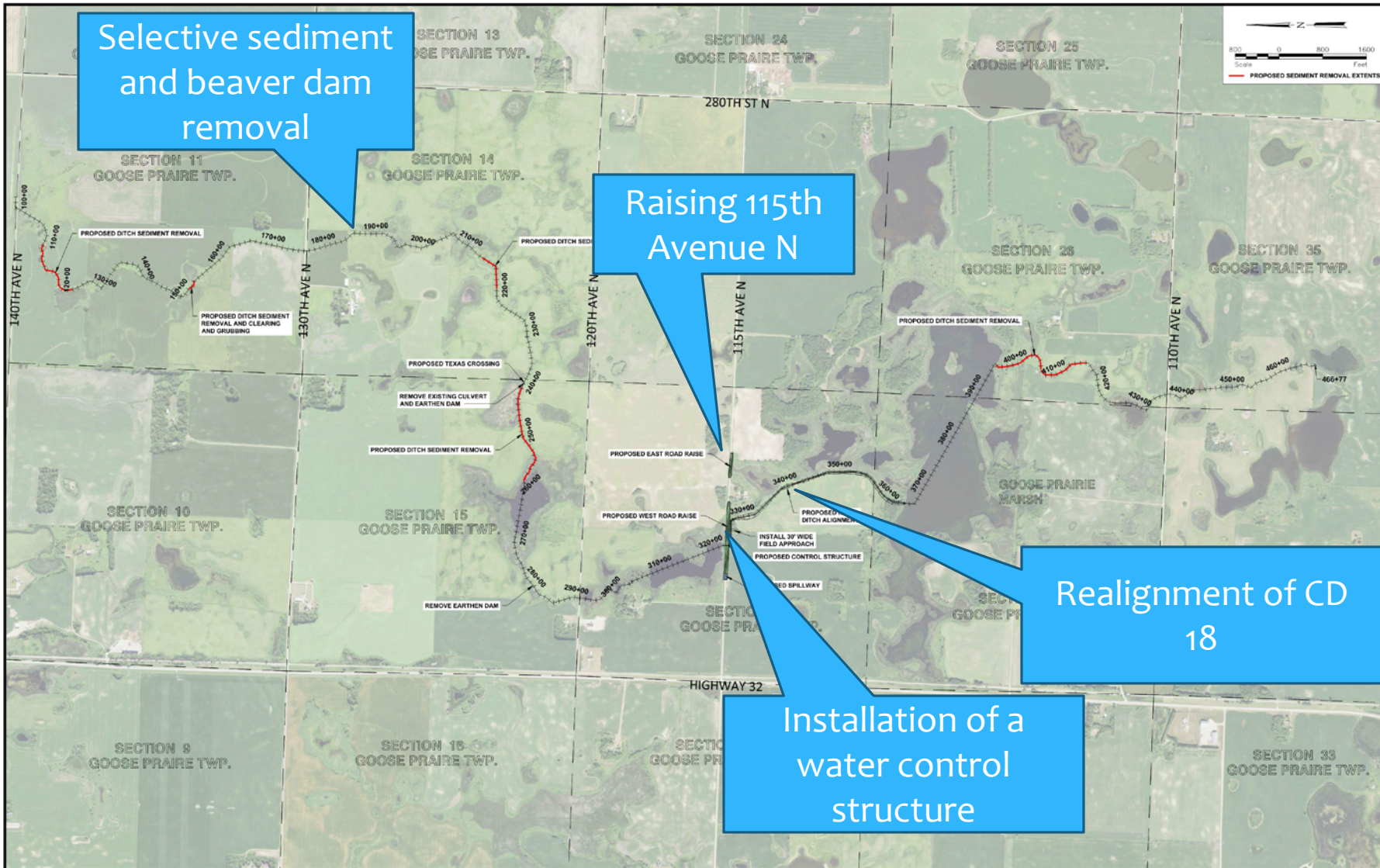


# PROJECT DESCRIPTION

Four major components:

1. Installation of a water control structure,
2. Raising 115th Avenue N,
3. Realignment of CD 18 from the Goose Prairie Marsh to the water control structure,
4. Selective sediment and beaver dam removal areas of CD 18 downstream of the new control structure as well as in the channel above the marsh.

# PROJECT DESCRIPTION



Selective sediment and beaver dam removal

Raising 115th Avenue N

Realignment of CD 18

Installation of a water control structure

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No.	Revision	Date	By

**PRELIMINARY**  
Not for Construction



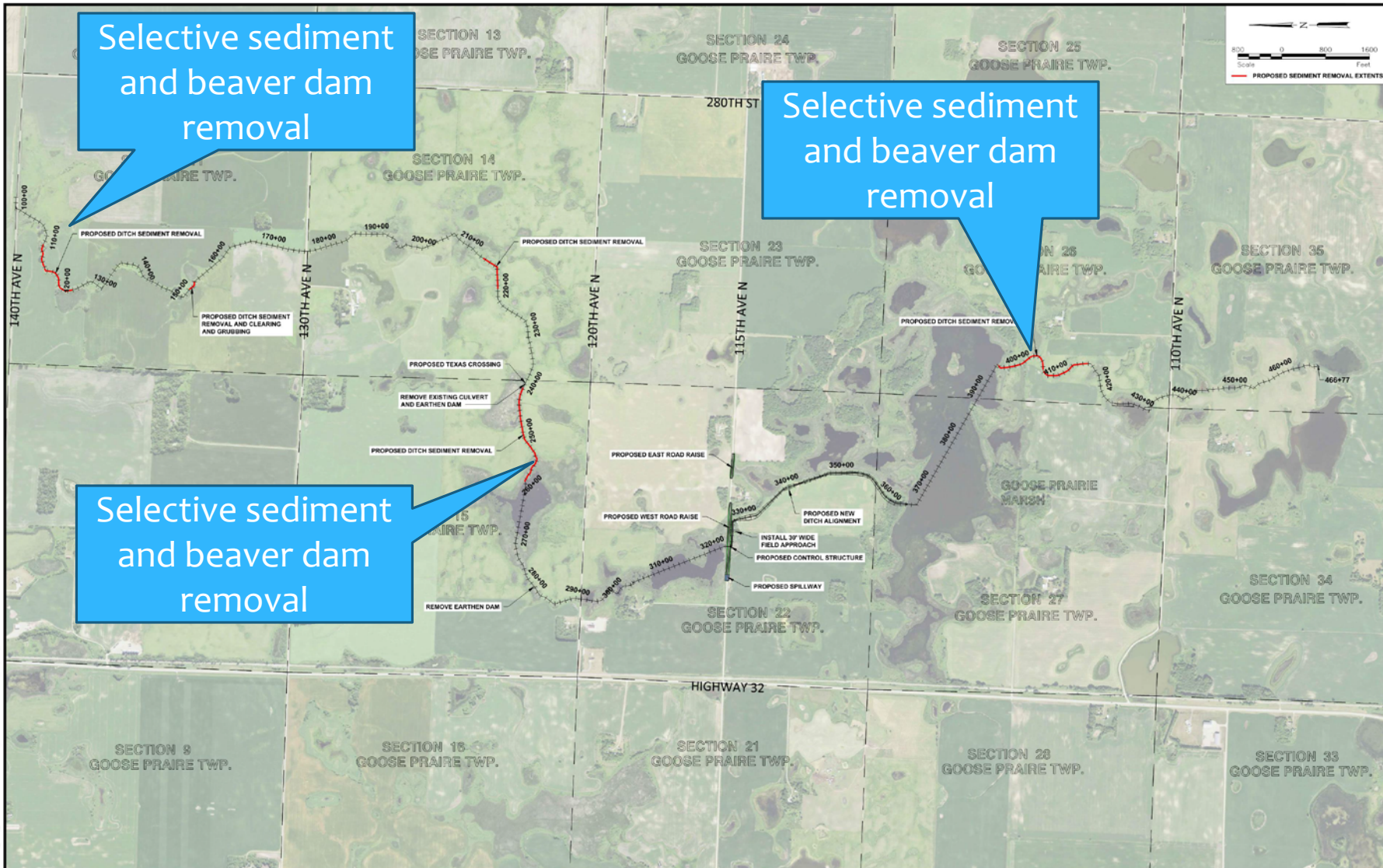
Fargo  
 P: 701.237.5065  
 F: 701.237.5101  
 Drawn by: JMW  
 Checked by: JDB  
 Date: 2-7-2018  
 Scale: AS SHOWN

GOOSE PRAIRIE WMA ENHANCEMENT PROJECT  
 WILD RICE WATERSHED DISTRICT  
 ADA, MINNESOTA

OVERALL SITE PLAN  
 PROJECT NO. 1432-354

SHEET  
 2 of 18

# PROJECT DESCRIPTION



Selective sediment and beaver dam removal

Selective sediment and beaver dam removal

Selective sediment and beaver dam removal



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No.	Revision	Date	By

**PRELIMINARY**  
Not for Construction



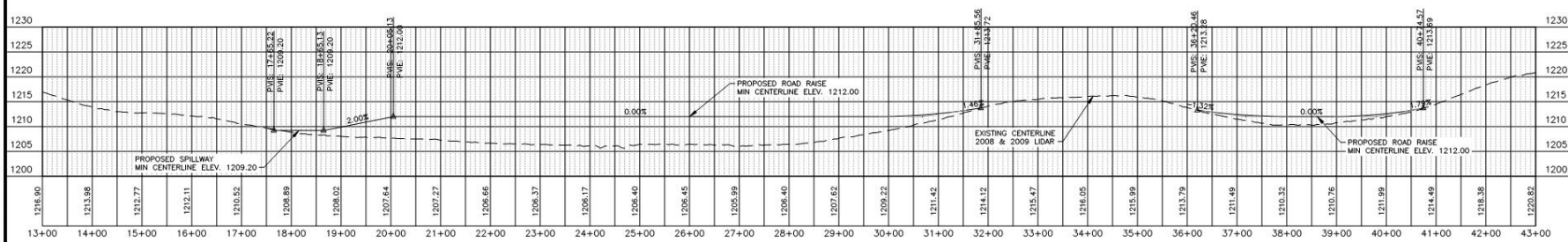
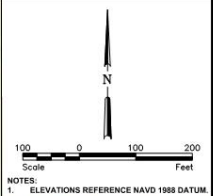
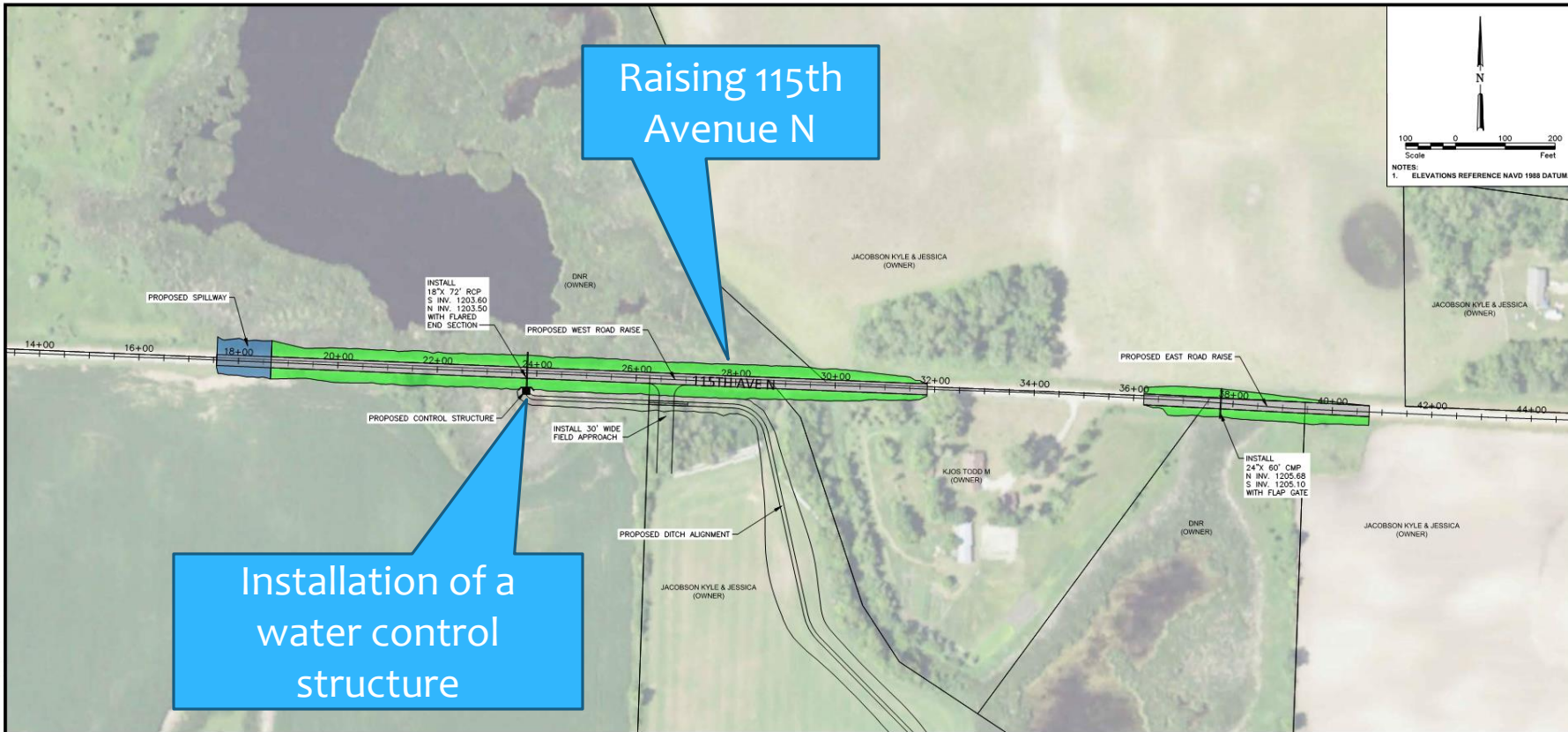
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GOOSE PRAIRIE WMA ENHANCEMENT PROJECT  
WILD RICE WATERSHED DISTRICT  
ADA, MINNESOTA

OVERALL SITE PLAN  
PROJECT NO. 1432-354

SHEET  
2 of 18

# PROJECT DESCRIPTION



No.	Revision	Date	By

**PRELIMINARY**  
 Not for Construction



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Date 2-7-2018  
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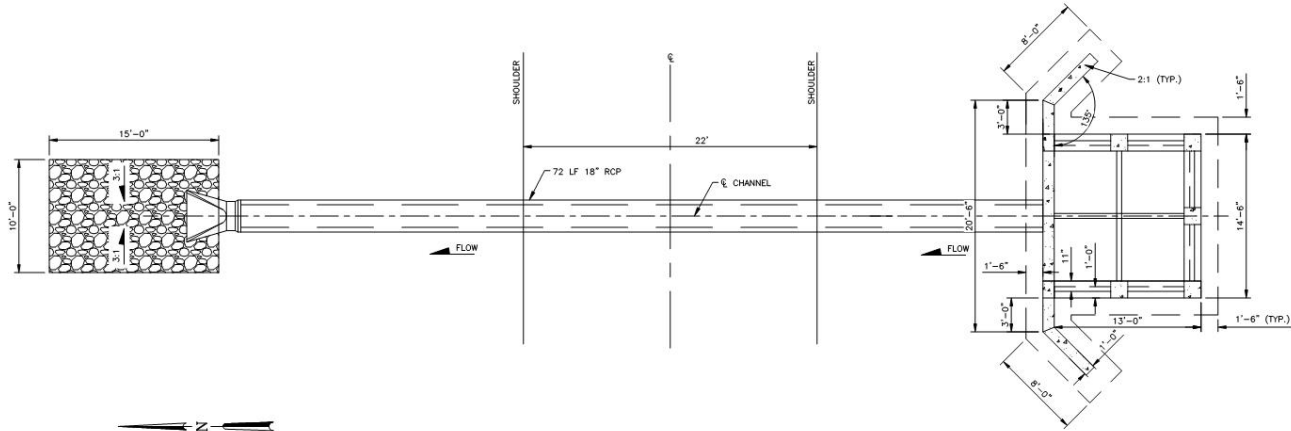
GOOSE PRAIRIE WMA ENHANCEMENT PROJECT  
 WILD RICE WATERSHED DISTRICT  
 ADA, MINNESOTA

PLAN AND PROFILE  
 ROAD RAISE  
 PROJECT NO. 1432-354

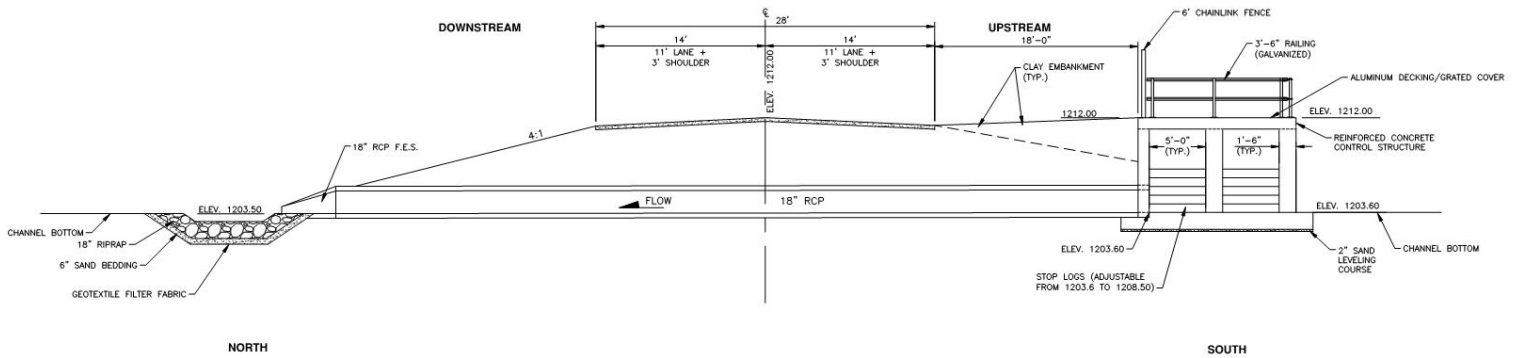
SHEET  
 11 of 18

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# PROJECT DESCRIPTION



**PLAN ALONG  $\phi$  OF GOOSE PRAIRIE CONTROL STRUCTURE**  
NOT TO SCALE



**PROFILE ALONG  $\phi$  OF GOOSE PRAIRIE CONTROL STRUCTURE**  
NOT TO SCALE

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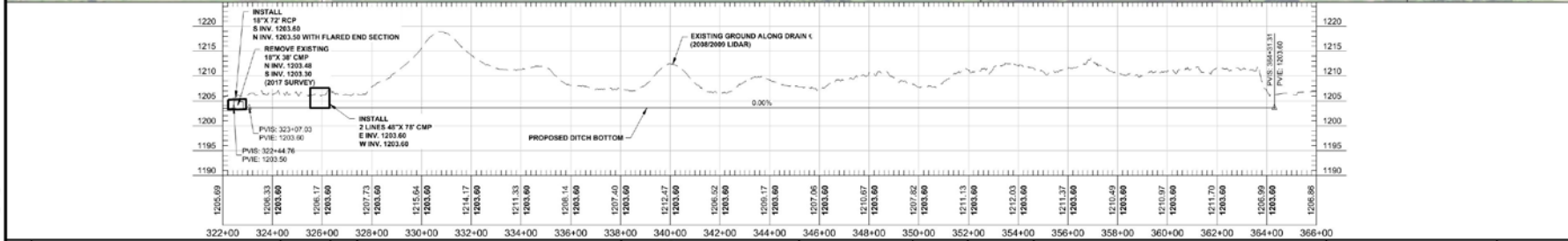
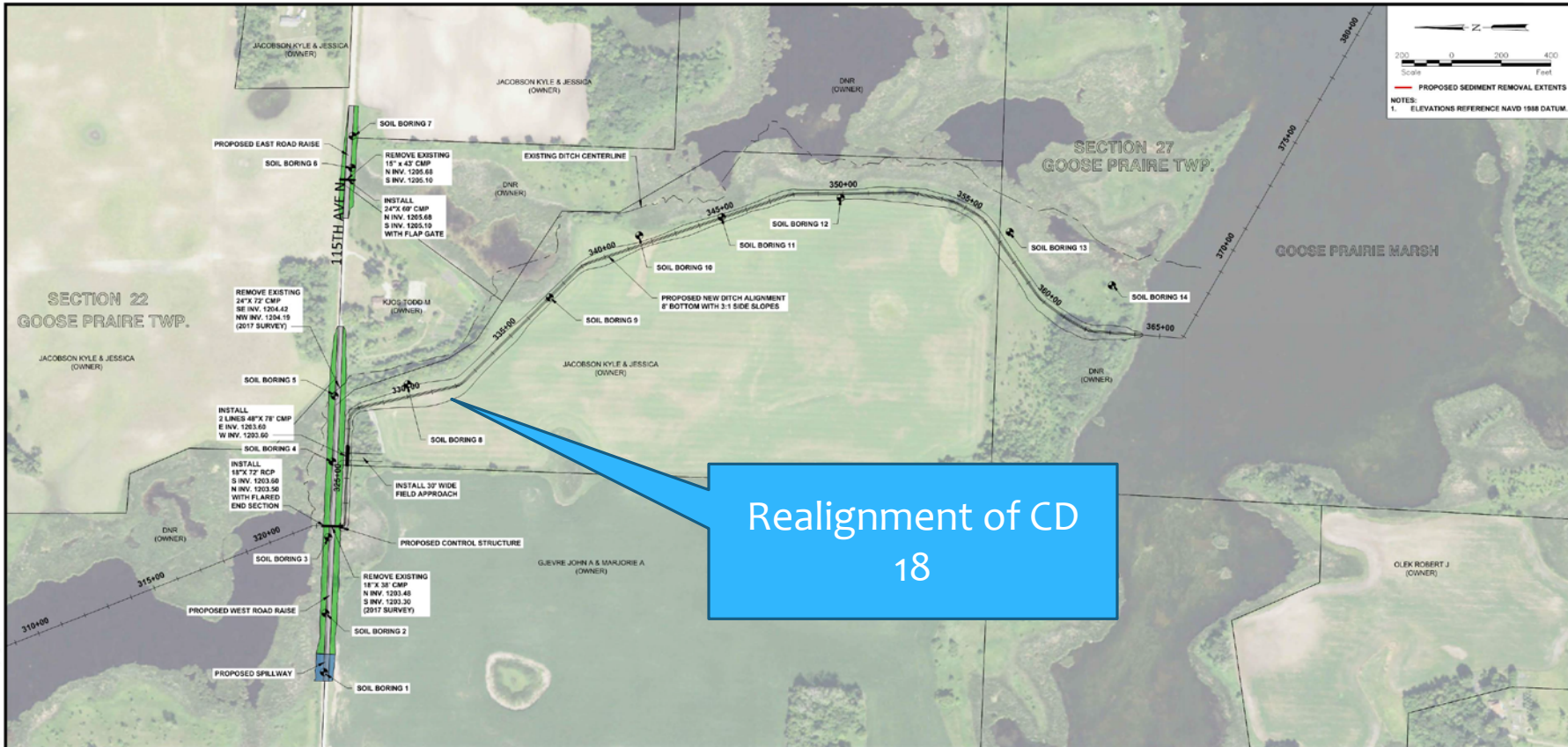
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GOOSE PRAIRIE WMA ENHANCEMENT PROJECT WILD RICE WATERSHED DISTRICT ADA, MINNESOTA	PRINCIPAL SPILLWAY DETAIL
PROJECT NO. 1432-354	SHEET

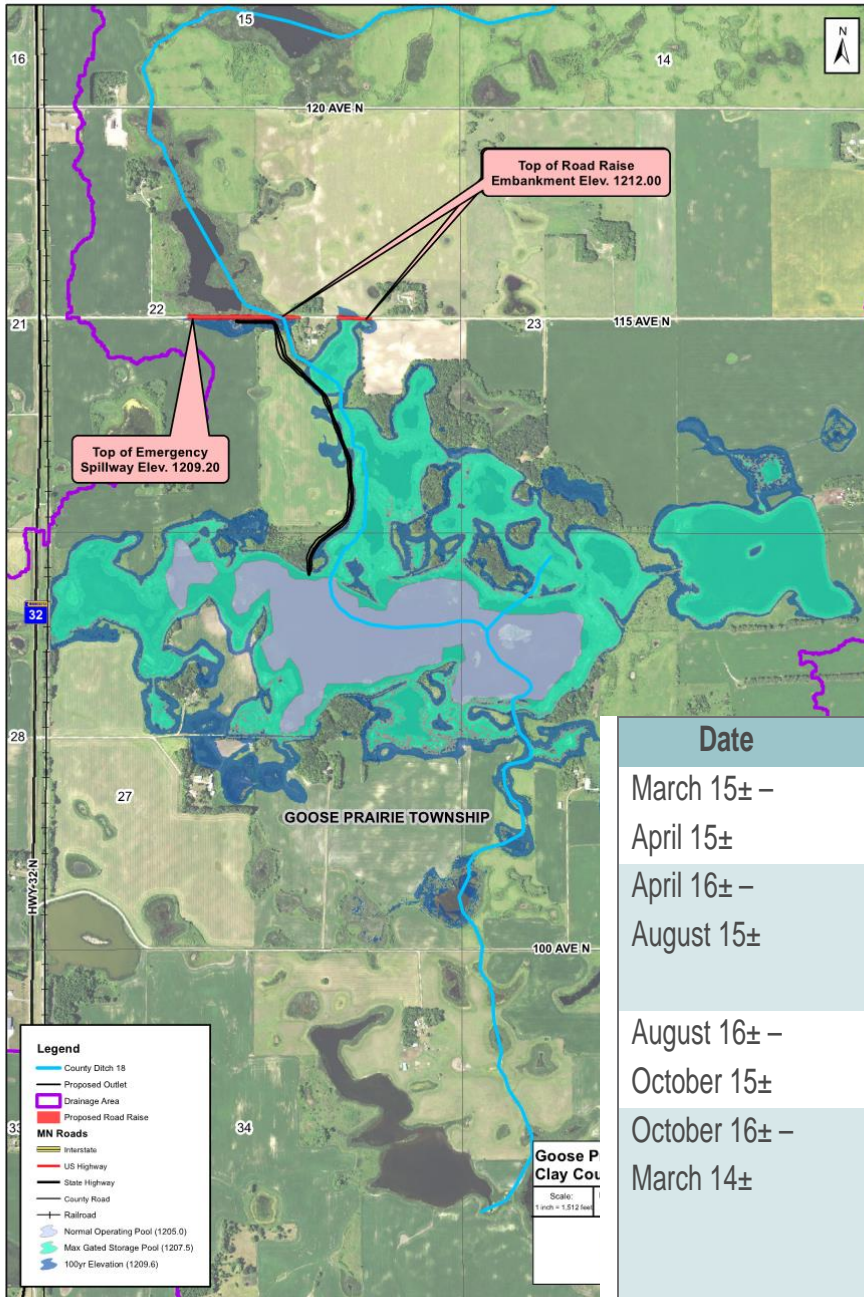
# PROJECT DESCRIPTION



<b>PRELIMINARY</b> Not for Construction				Fargo P: 701.237.5065 F: 701.237.5101		Drawn by: JMW Date: 2-7-2018 Checked by: JDB Scale: AS SHOWN		GOOSE PRAIRE WMA ENHANCEMENT PROJECT WILD RICE WATERSHED DISTRICT ADA, MINNESOTA		PLAN AND PROFILE DITCH PROJECT NO. 1432-354		SHEET 8 of 18	
No.	Revision	Date	By										

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Figure 3



# Preliminary Annual Water Level Management Plan

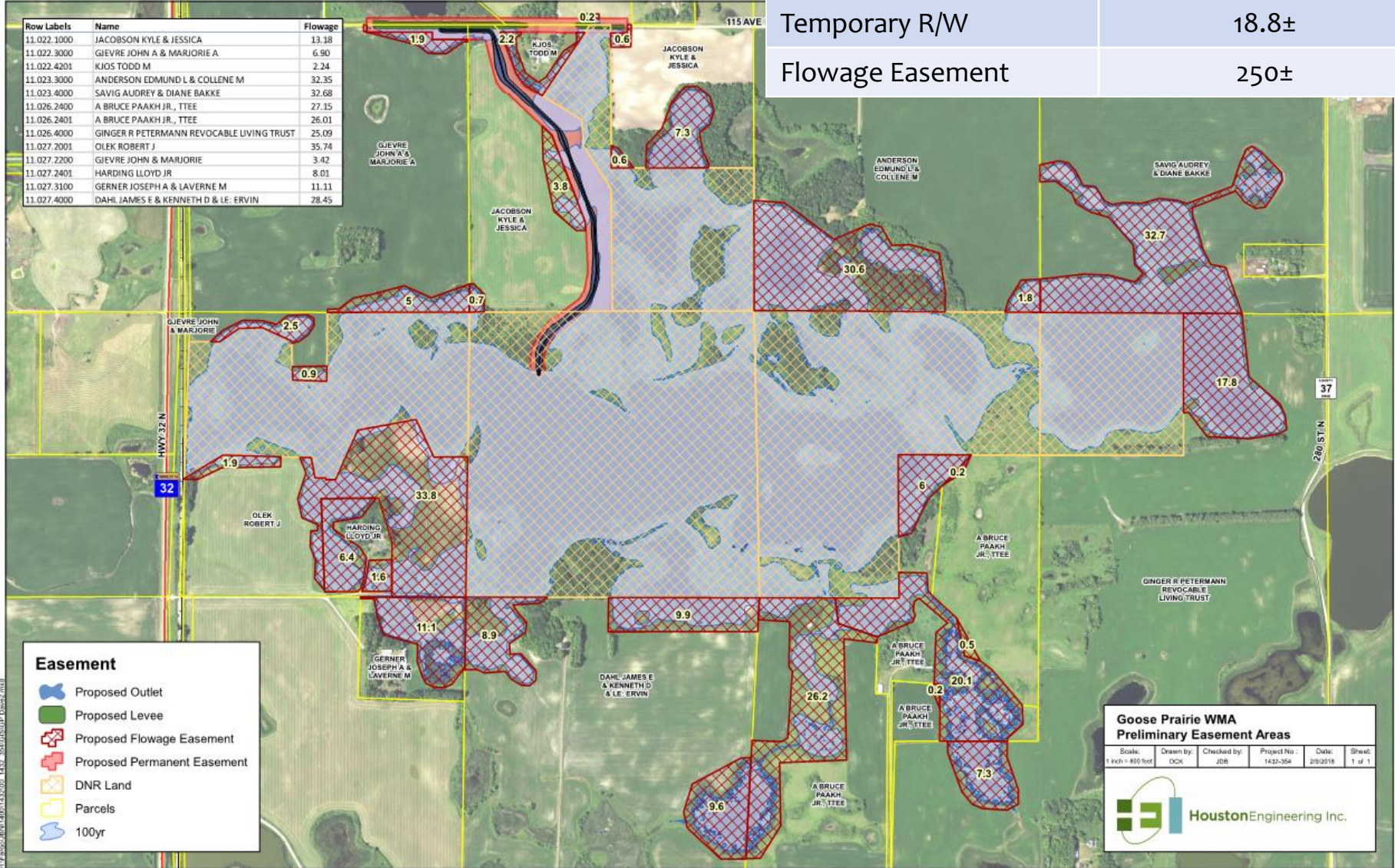
- Pool was 1205.5 (12/27/2017 – top of ice)
- 1206.91 – July 2009
- Periodic drawdowns to 1203.6 would be possible post project.

Date	Target Water Elevation	Objective
March 15± – April 15±	Gated up to 1207.50	Minimize downstream flood damage.
April 16± – August 15±	Drawdown to 1205.00 would be completed by May 1±	Minimize bounce for nesting birds and provide adequate water level for aquatic plants.
August 16± – October 15±	1205.00	Maintain normal pool unless flood conditions occur.
October 16± – March 14±	Drawdown to 1204.50 by freeze-up	Allow water depth for waterfowl hunting access but complete or nearly complete drawdown by freeze up for spring storage. Periodically this will be drawn down to 1203.60.

# RIGHT-OF-WAY

Figure 11

Type	Acres
Permanent R/W (Till)	8±
Permanent R/W (Non-till)	14.3±
Temporary R/W	18.8±
Flowage Easement	250±





# OPINION OF PROBABLE COST

## Goose Prairie WMA Enhancement Project

### Preliminary Opinion of Probable Costs

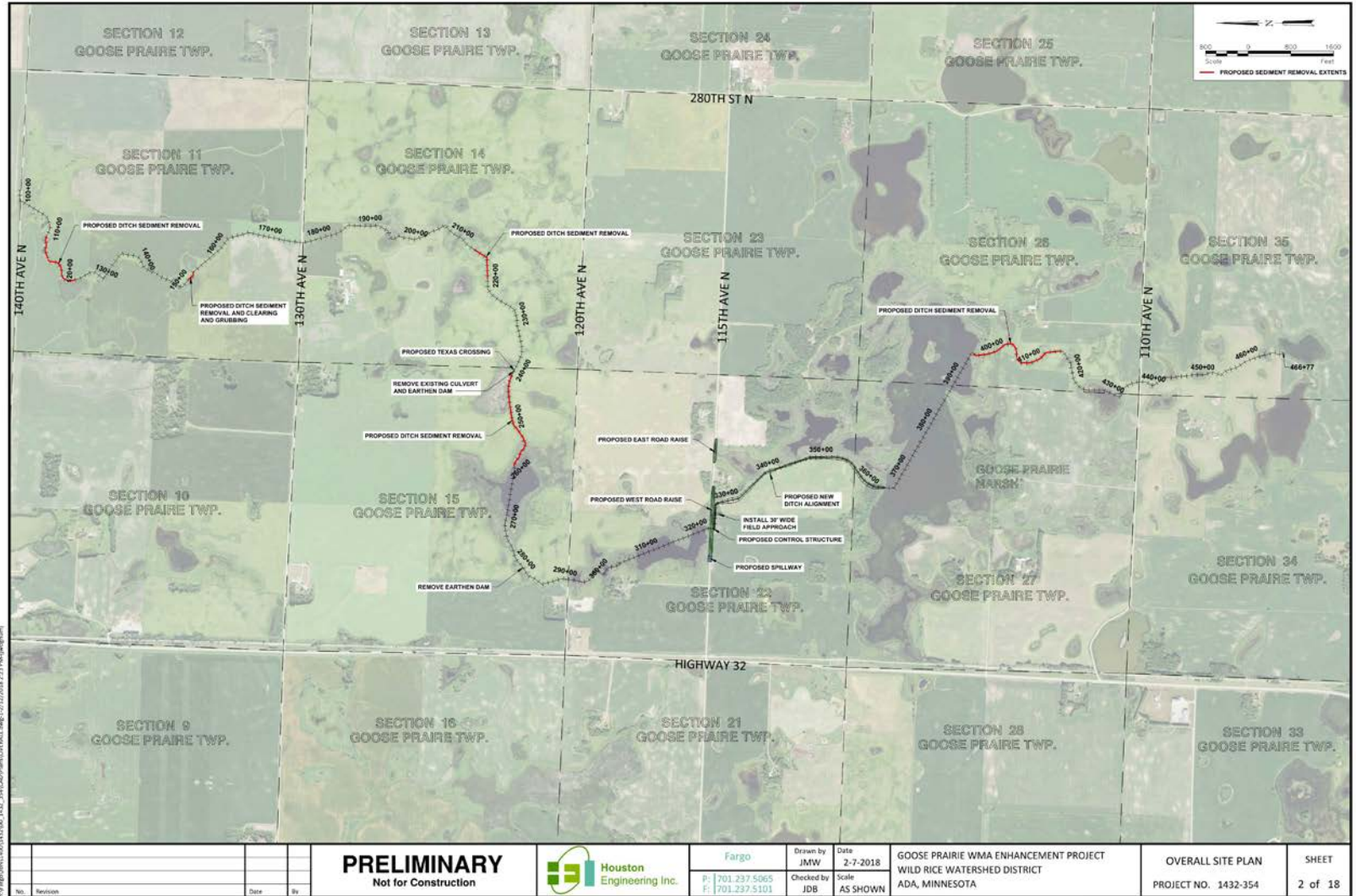
February 13, 2018

No.	Item	Unit	Quantity	Unit Price	Total Price
1	Clearing and Grubbing	LS	1	\$ 15,000.00	\$15,000
2	Remove and Salvage Aggregate Roadway (6" Assumed)	CY	675	\$ 7.00	\$4,725
3	Import and Install MNDOT CL5 Aggregate Roadway (6" Assumed)	CY	130	\$ 30.00	\$3,900
4	Install Salvaged Aggregate Roadway (6" Assumed)	CY	675	\$ 15.00	\$10,125
5	Filter Fabric (Road)	SY	4,600	\$ 3.00	\$13,800
6	Stripping - Roadway Slopes (6" Assumed)	CY	1,400	\$ 2.00	\$2,800
7	Topsoiling - Roadway Slopes (6" Assumed)	CY	1,400	\$ 3.00	\$4,200
8	Common Excavation (New Ditch)	CY	30,400	\$ 5.00	\$152,000
9	Ditch Cleanout	LF	5,960	\$ 10.00	\$59,600
10	Inspection Trench (Road)	CY	4,200	\$ 7.00	\$29,400
11	Impervious Fill (Road)	CY	12,000	\$ 7.00	\$84,000
12	18" Reinforced Concrete Pipe (RCP) CL3	LF	72	\$ 75.00	\$5,400
13	18" Reinforced Concrete Flared End Section	EA	1	\$ 600.00	\$600
14	24" Corrugated Metal Pipe (CMP) 16 Gage	LF	60	\$ 45.00	\$2,700
15	24" Steel Flap Gate	EA	1	\$ 550.00	\$550
16	48" Corrugated Metal Pipe (CMP) 12 Gage	LF	156	\$ 90.00	\$14,040
17	Seeding and Mulching	AC	30.8	\$ 700.00	\$21,560
18	Riprap MN DOT CL2 (Includes Bedding and Fabric)	CY	65	\$ 90.00	\$5,850
19	Erosion Control	LS	1	\$ 5,000.00	\$5,000
20	Water Management	LS	1	\$ 10,000.00	\$10,000
21	Control Structure	LS	1	\$ 125,000.00	\$125,000
22	Utility Relocation Allowance	LS	1	\$ 25,000.00	\$25,000
23	Wetland/Ecological Mitigation	LS	1	\$ 50,000.00	\$50,000
				Construction Subtotal	\$645,250
				Contingencies (25%)	\$161,313
				<b>Total Estimated Construction Cost</b>	<b>\$807,000</b>
				<b>Total Estimated Real Estate Cost</b>	<b>\$292,000</b>
				<b>Project Development and Related Costs (Eng/Legal/Admin/Construction Services,...)</b>	<b>\$380,000</b>
				<b>Total Opinion of Probable Project Cost</b>	<b>\$1,479,000</b>

# PROPOSED FINANCING

40%	Lessard-Sams Outdoor Heritage Council (LSOHC) (\$600,000)
13%	Red River Watershed Management Board (RRWMB) (\$200,000)
13%	Wild Rice Watershed District (WRWD) (\$200,000)
13%	State of Minnesota - Flood Hazard Mitigation Program (FDR) (\$200,000)
20%	Other Outside Habitat Programs - DNR/USFWS/Other (TBD) (\$300,000)

# Purposes



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No.	Revision	Date	By	<b>PRELIMINARY</b> Not for Construction	Houston Engineering Inc.	Fargo	Drawn by JMW	Date 2-7-2018	GOOSE PRAIRIE WMA ENHANCEMENT PROJECT WILD RICE WATERSHED DISTRICT ADA, MINNESOTA	OVERALL SITE PLAN PROJECT NO. 1432-354	SHEET 2 of 18
						P: 701.237.5065 F: 701.237.5101	Checked by JDB	Scale AS SHOWN			

# “Improve wildlife habitat conditions”

- \* Factors likely contributing to the poor conditions in Goose Prairie Marsh include:

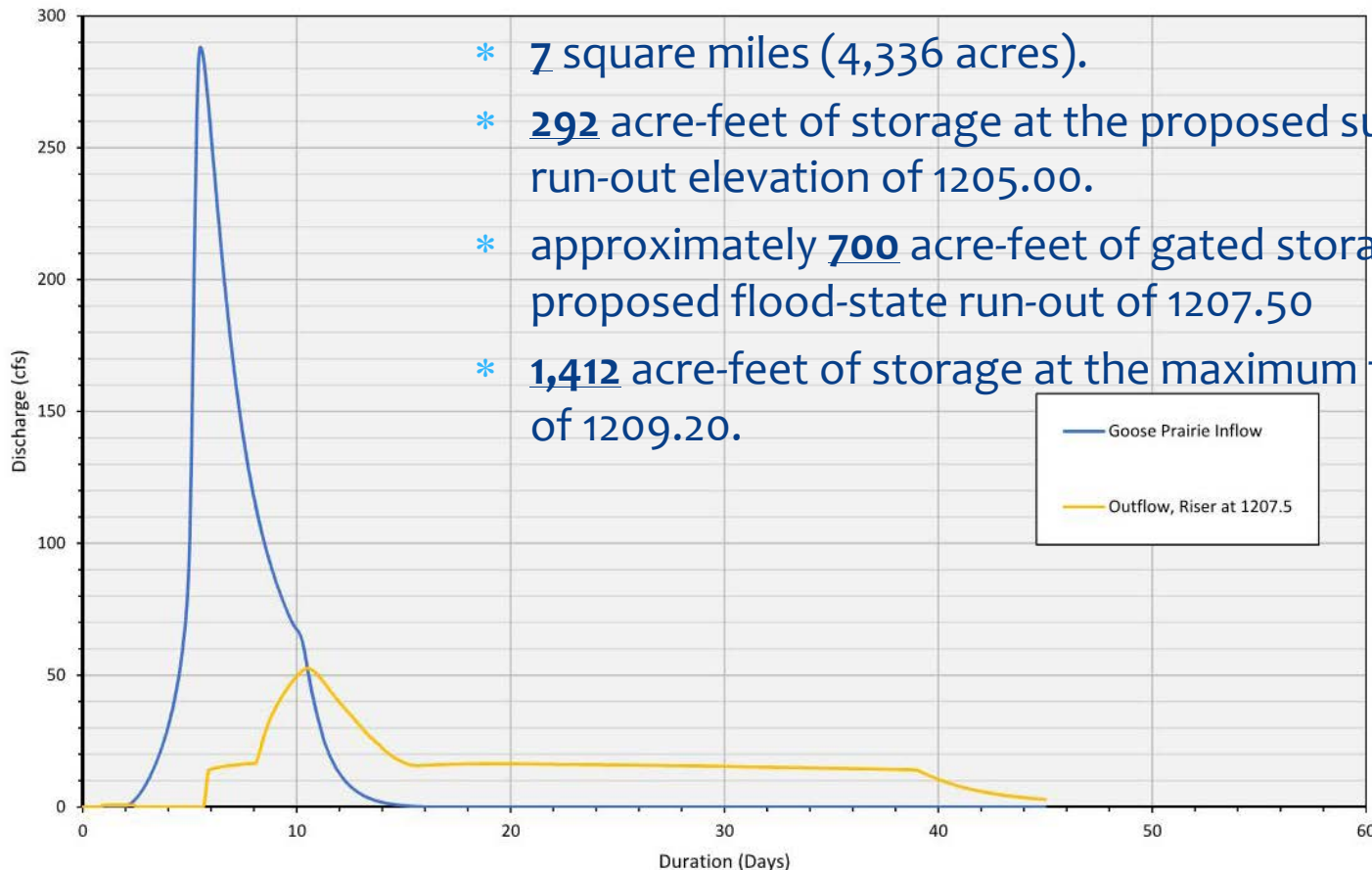
- \* increased nutrient loading,
- \* altered hydrology,
- \* high water levels,
- \* undesirable fish,
- \* and changing climatic conditions.

- \* Objectives of this project are

- \* to manage water levels to promote growth and increase diversity of native aquatic vegetation,
- \* reduce water level fluctuations during the waterfowl nesting season,
- \* and improve water quality within the lake.

# “reducing the risk of downstream local and regional flooding damage”

Goose Prairie Marsh  
100 Year, 10 Day Runoff Event  
Discharge vs. Duration



- \* 7 square miles (4,336 acres).
- \* 292 acre-feet of storage at the proposed summer pool run-out elevation of 1205.00.
- \* approximately 700 acre-feet of gated storage at the proposed flood-state run-out of 1207.50
- \* 1,412 acre-feet of storage at the maximum flood pool of 1209.20.

# “and maintaining an adequate outlet for upstream landowners”

Date	Target Water Elevation	Objective
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April 16± – August 15±	Drawdown to 1205.00 would be completed by May 1±	Minimize bounce for nesting birds and provide adequate water level for aquatic plants.
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- *Pool was 1205.5 (12/27/2017 – top of ice)*
- *1206.91 – July 2009*
- *Periodic drawdowns to 1203.6 would be possible post project.*

# Questions



HoustonEngineering Inc.

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February 13, 2018



**PRELIMINARY RESOLUTION REPORT**  
**GOOSE PRAIRIE WMA**  
**ENHANCEMENT PROJECT**  
Wild Rice Watershed District