

WATER TOPICS OVERVIEW COMMITTEE

Wednesday, November 5, 2015

Burleigh County Water Resource District

Greg Larson, District Manager

Missouri River Correctional Center Flood Control Project

- 1.2 Million Dollars appropriated by ND Legislature HB 2020
- Public hearing of the assessment district and vote to approve held summer of 2015.
- Request was made to the State Water Commission for the 1.2 million and has been received.
- After approval, the project is in final design phase and private easements are being obtained.
- The intent is to put the project out to bid early 2016 with anticipated completion in the fall of 2016

Lincoln Township – Fox Island Flood Control Project

- 2.8 Million Dollars appropriated by ND Legislature HB 2020
- Preliminary design completed.
- Meetings with Fox Island Homeowners Association executive committee have been held with a positive outcome.
- Lincoln Township/Burleigh County have authorized \$920,456.00 to the project, Oct 19, 2015.
- Burleigh County Water Resource District will be requesting the 2.8 million dollars at it's November 10, 2015 regular board meeting.
- There will be a public hearing on the project in late November or early December with a vote to approve held 30 days later.
- Assuming a positive outcome on the assessment district vote, final design and easements will be obtained with the intent of going to bid mid 2016 with construction to begin late 2016 or early 2017 with completion in 2017.



Burleigh County Water Resource District

**1811 East Thayer Avenue
Bismarck, North Dakota 58501
(701) 222-3499
www.bcwrdd.org**

Fox Island Flood Control Project Water Topics Policy Committee Briefing Document

The Burleigh County Water Resource District (BCWRD) is proceeding with developing the Fox Island Flood Control Project in cooperation with Lincoln Township, an unincorporated township represented by the Burleigh County Commission. This project has progressed through the development process from its beginning after the record 2009 ice jam event, and expanded after the historic 2011 Missouri River flood. The following is a summary illustrating the project's history, along with project overview maps.

1. The Fox Island Flood Control Project was initiated by a petition from flooded residents following the 2009 Missouri River ice jam. The project was evaluated by the BCWRD and a draft preliminary engineering report was being prepared, with cost share assistance through the North Dakota State Water Commission (NDSWC), when the 2011 Missouri River flood occurred.
2. The 2011 Missouri River flood reset the evaluation process and the resulting flood protection scope and mission was expanded. In 2012 the BCWRD in consultation and discussion with the Burleigh County Highway Department evaluated a greater protection area. It now included the Harbor Drive area north of Mills Avenue and rural residential development around the perimeter of the island along the river and oxbow. The selected county-wide flood protection criteria is based on a control elevation 0.7 feet above the actual 2011 flood elevation.
3. After extensive evaluation, discussion and public informational meetings the Harbor Drive residents, those residents located along the river and on the south side of the island along the oxbow petitioned the BCWRD to be removed from the project. Their principal concerns were related to property impacts (e.g., tree removal, grading, aesthetics, etc.), as well as costs, individual apathy, and blaming the USACE for the flood. Subsequently, the BCWRD removed these properties from further project consideration, notifying them it was their decision not to be provided protection.
4. The *Fox Island Flood Control Feasibility Assessment, February 19, 2014* contained a review of the 2009 and 2011 flood events, their impacts and the alternative protection measures considered based on known risks and public input from the benefited residents.
5. In 2013 the City of Bismarck (City) completed grade raises on Riverwood Drive and Mills Avenue to protect the City. These projects also provided flood protection against flows through the Fox Island area. The County designed and constructed the Tavis Road pump station and flood control gates, with funding assistance from the City and NDSWC. During this project development Burleigh County committed to the City that they would close the flood control gap between Tavis Road and Mills Avenue. This closure to provide protection for the City's sewage treatment plant and a limited number of residences on Fox Island.
6. On November 18, 2013 the Burleigh County Highway Department requested the Burleigh County Commission differ on their commitment to the Fox Island Project until 2017, due to limited Township funding. Subsequently, following the allocation of legislative funding for the project, the BCWRD requested the Burleigh County Commission formally recommit to funding in 2017. This to facilitate project implementation during the 2015-2017 biennium, and to assist the County in meeting their commitment to the City and some Fox Island residents.

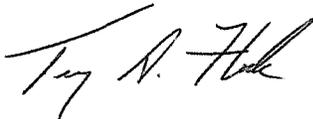
Current Board Members:

Terry Fleck, Chairman, Bismarck 223-9768 Dennis Reep, Vice Chairman, Bismarck 557-9621 Gordon Weixel, Secretary/Treasurer, Bismarck 258-5390
Greg Larson, Manager, Bismarck 400-7217 Rick Detwiller, Manager, Bismarck 223-8782

7. The expanded Fox Island Flood Control Project will provide flood protection against another 2009 level ice jam event or a 2011 flood to 116 rural residential properties. It will also provide the necessary corridor and easements for greater emergency flood protection, should that be necessary. The Fox Island Homeowners Association, who represent the largest constituency on the island, recently renewed its project support.
8. The residential damages occurring from the 2009 ice jam event were just over \$1 million. The temporary flood protection measures during the 2011 event costing over \$1.3 Million, which does not include damages to residential structures.
9. The BCWRD has established the following development schedule for the project:
 - a. County Commission commitment on behalf of Lincoln Township
 - i. \$920,456 - Authorized October 19, 2015
 - b. Request appropriated legislative funding – November 10th
 - c. Public Informational Meeting (December 2015/January 2016)
 - i. Update residents on allocated funding, costs, vote and implementation timeline
 - ii. Prepare assessment district summary
 - d. Public Hearing and Assessment District Vote (Early 2016)
 - e. After a favorable project vote
 - i. Survey/Easements and Design – Spring and Summer 2016
 - ii. Advertisement for Bids – Fall 2016
 - iii. Construction – Spring 2017

The \$2.8 Million allocated by the North Dakota Legislature in HB 2020 will be formally requested for transfer by the BCWRD at their meeting on November 10th regular meeting. The BCWRD will place these funds into a separate project account and upon project completion, or as requested, will provide an accounting for use of these funds. It is our intent to provide updates on project status and expenditures as the BCWRD proceeds with design, bidding and construction. The current opinion of probable project cost is approximately \$3.8 Million. The final cost is dependent on market conditions in 2017.

Respectfully,



Terry Fleck, Chairman

Slides/Overview

- ✓ 2009 Ice Jam Flood - Missouri Aerial
- ✓ 2009 Ice Jam Flood - Fox Island Aerial
- ✓ 2011 Flood Extents without protection
- ✓ Project Feature and Flood Protection Area



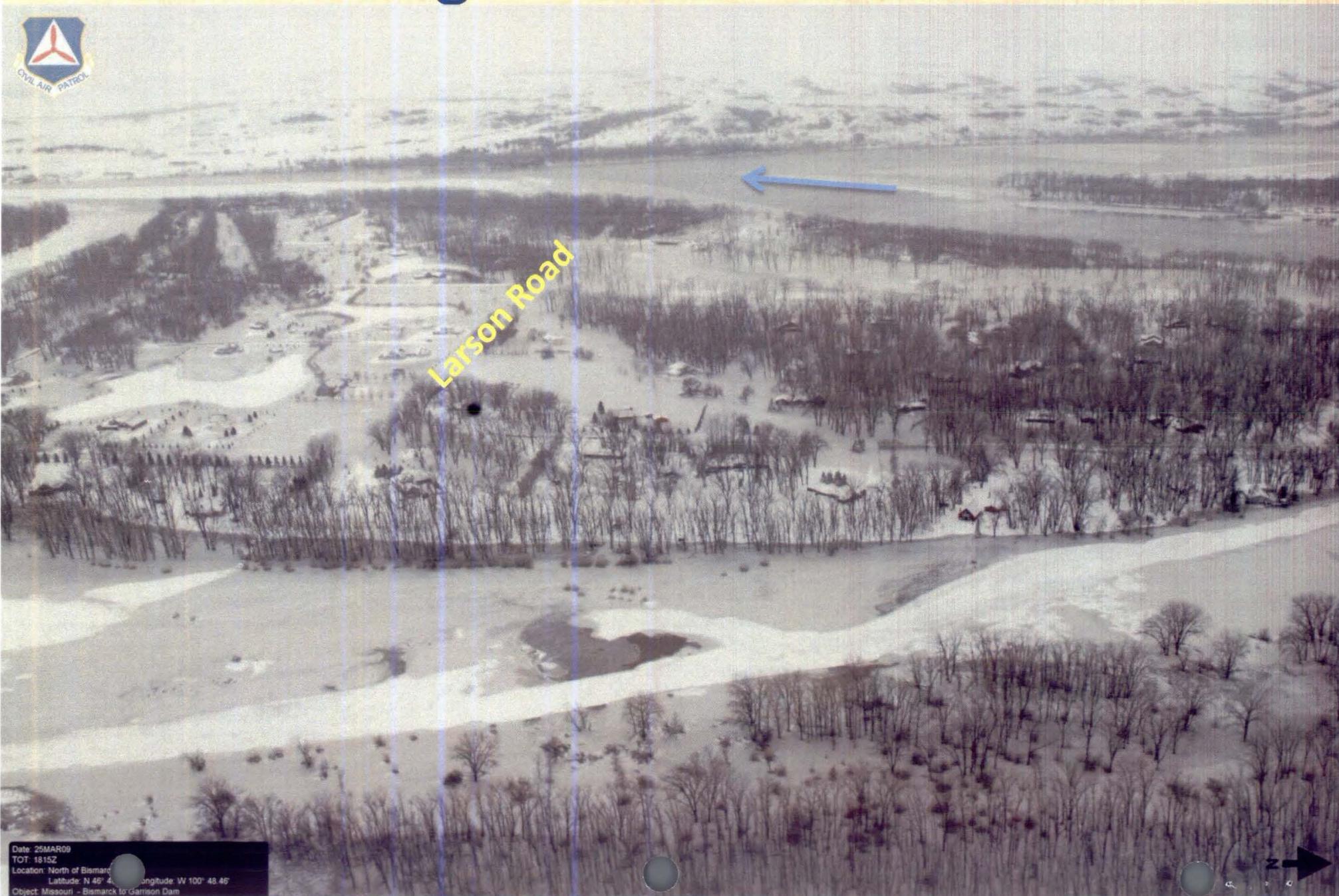
Fox Island

2009 Ice Jam Flood Event



Date: 25MAR09
TOT: 1341Z
Location: South of Bismarck ND
Latitude: N 46° 45' 82" / Longitude: W 100° 50' 91"
Object: Missouri River

Looking west over Fox Island



Date: 25MAR09
TOT: 1815Z
Location: North of Bismarck
Latitude: N 46° 4' Longitude: W 100° 48' 46"
Object: Missouri - Bismarck to Garrison Dam



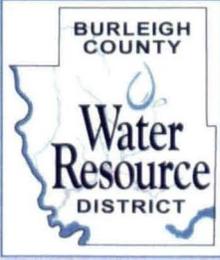


Unprotected Flood Limits Existing Conditions

19.5 foot stage

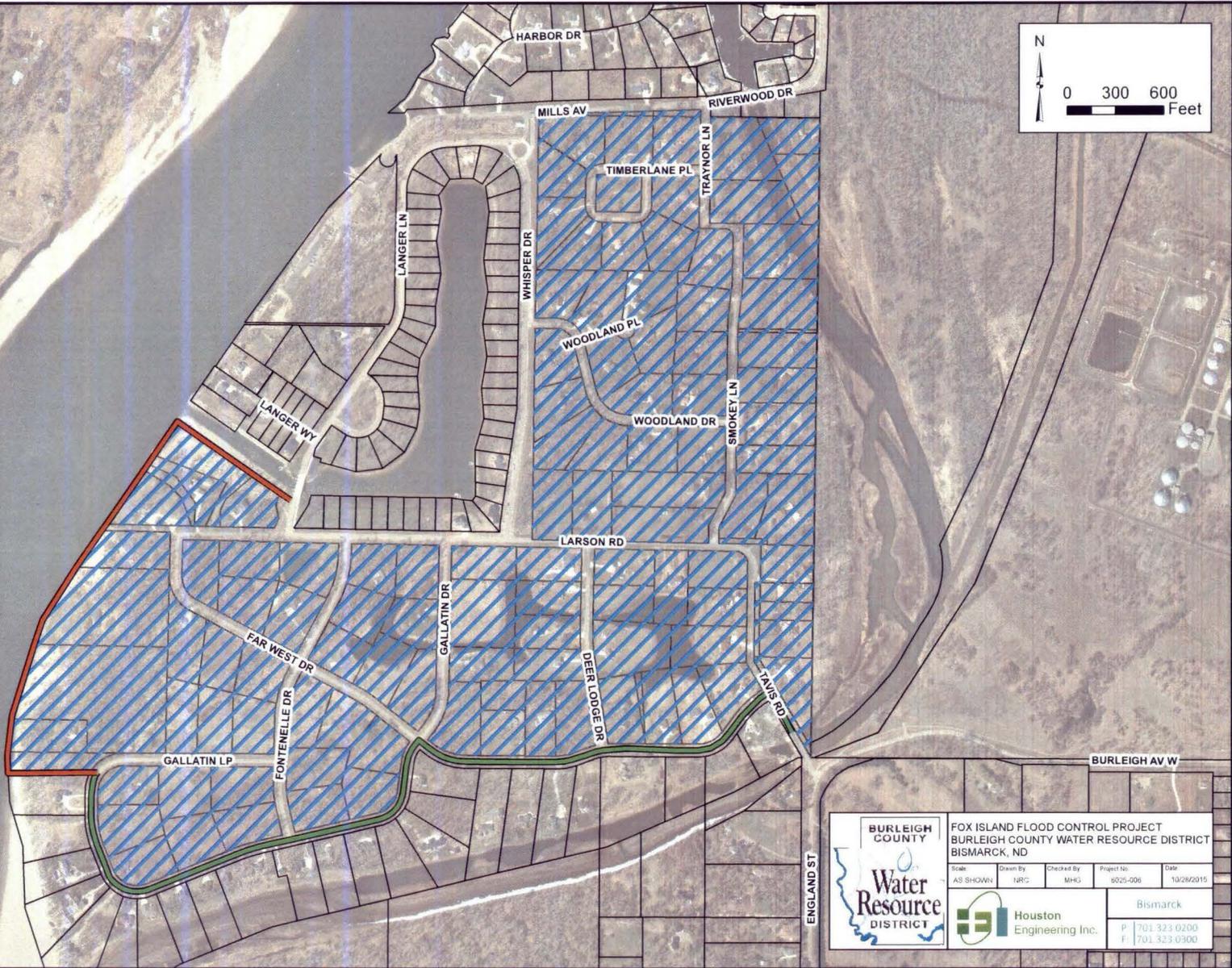
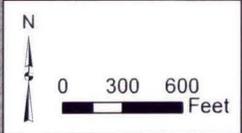
**FIGURE 5
UNPROTECTED FLOOD LIMITS
EXISTING CONDITIONS**
19.5 ft stage at the USGS Bismarck Gage

Scale	Drawn By	Checked By	Project No.	Date
AS SHOWN	MJF	MBG	6025-006	4/3/2012
Houston Engineering Inc.			Bismarck	
P		701.323.0200		
F		701.323.0300		



Legend

-  Earthen Levee
-  Grade Raise
-  Protected Properties



Data: H:\Bismarck\2015\20150225_Burleigh_Co_WRC\2015_0225_Fox_Island_Flood_Control_Plan\Map\150416_Visual_Planet_Coastal_Flood_Control_Download.mxd

	BURLEIGH COUNTY FOX ISLAND FLOOD CONTROL PROJECT BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND			
	Scale: AS SHOWN	Drawn By: NRC	Checked By: MHK	Project No: 1025-006
			Date: 10/28/2015	
Bismarck			P: 701.323.0200 F: 701.323.0300	



Burleigh County Water Resource District

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Missouri River Correctional Center Flood Control Project Water Topics Policy Committee Briefing Document

The Burleigh County Water Resource District (BCWRD) is proceeding with the design and construction of the Missouri River Correctional Center Flood Control Project (MRCC Project). This project has been progressing through the development process since the Missouri River Flood of 2011. The following is a summary of project events that have occurred.

1. The North Dakota State Engineer's office approved cost share fund to evaluate project alternatives and feasibility evaluation for the MRCC Flood Control Project after the request was submitted on August 15, 2012. The local cost for temporary flood control measures implemented in this area during the 2011 event was approximately \$2 Million.
2. This flood control project was established by action of the BCWRD November 12, 2013, as part of the Burleigh County Flood Control Plan (BCFCP), and is an extension of the 48th Avenue grade raise that is part of that plan. The BCFFCP was prepared by the Burleigh County Highway Department, after consultation with the BCWRD, and approved by the Burleigh County Commission.
3. Several public informational meetings related to the project were held prior to the Board's resolution, including discussion on the Burleigh County Highway Department's 48th Avenue grade raise, which was completed as part of the overall BCFCP. The MRCC Flood Control Project Preliminary Engineering Report was prepared in accordance with NDCC 61-16.1 and noted its location, project costs and anticipated assessment district. This report was approved by the BCWRD on November 18, 2013 and notice of its completion mailed to the residents on November 20, 2013.
4. The 2013 North Dakota Legislature, recognizing the value of this project in providing flood protection to the Missouri River Correctional Center allocated \$349,950 toward project implementation and their share of the roadway grade raise into the facility. These funds remain available and will be requested and utilized for its completion.
5. A Public Hearing was held December 13, 2013 for the benefited landowners. The landowners were then given until January 13, 2014 to cast their votes. The vote failed with 46% in favor and 54% opposed – representing 68% of the total eligible votes. Discussions after the conclusion of this process determined that the vote failed in part due to unknowns associated with state cost participation levels and unrelated local issues. Notice was provided to the landowners on January 26, 2014 that the vote had failed and the project was de-authorized by the BCWRD.
6. The landowners subsequently discussed the project and joined together to file a petition with the BCWRD, received September 9, 2014, to re-establish this project. The signatory's on the petition represented 63% of the benefited properties within the original assessment district. The petition submittal occurred after following the receipt of a conditional cost share assistance letter from the North Dakota State Engineer.

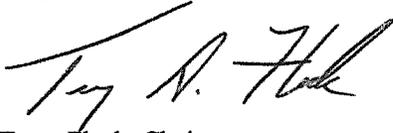
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Greg Larson, Manager, Bismarck 400-7217 Rick Detwiller, Manager, Bismarck 223-8782

7. The BCWRD reauthorized the MRCC Flood Control Project on December 9, 2014, followed by the Public Hearing May 19, 2015. The 2013 Preliminary Engineering Report was updated and published April 28, 2015, primarily to reflect changes since its original completion related to costs increasing. This second project vote was closed on July 19, 2015, with 62% voting in favor and 38% opposed – representing 78% of the total benefited properties. There are 154 parcels and rural residential properties (154) in the assessment district. The Missouri River Correctional Center is not included in this total and was not part of the assessment district voting process as they have a direct contribution to its construction.
8. The BCWRD has authorized Houston Engineering, Inc. to proceed with project design with the intent to advertise for bids in early 2016, followed by a spring construction start and fall completion.

The \$1.2 Million in funding allocated by the North Dakota Legislature in HB 2020 for the Missouri River Correctional Center Flood Control Project has been requested and received by the BCWRD. The BCWRD has placed these funds into a separate project account and upon project completion, or as requested, will provide an accounting for the use of these funds. The current opinion of probable project cost is \$1.7 million, and is subject to market and bidding conditions in 2016.

Respectfully,



Terry Fleck, Chairman

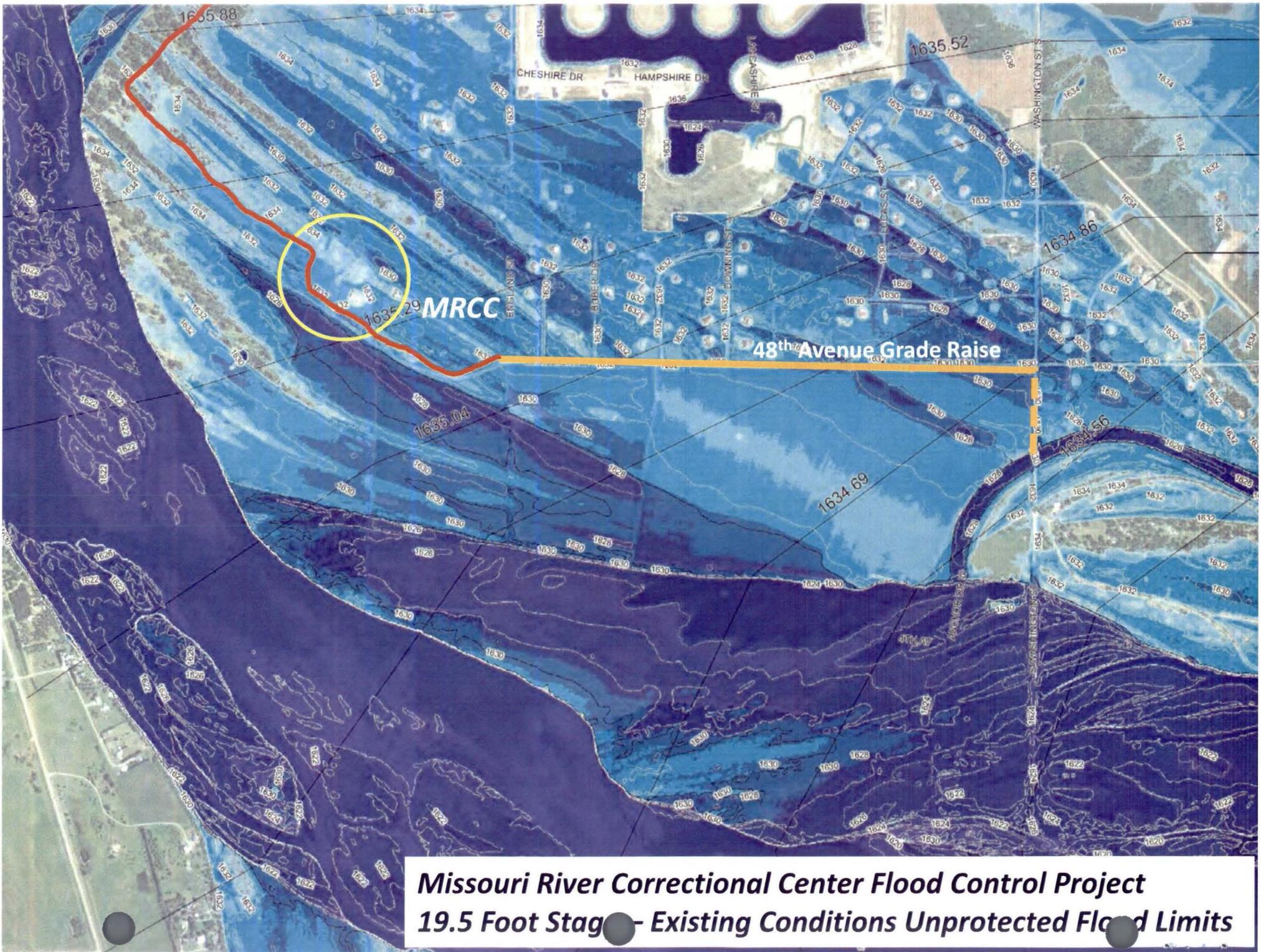
- ✓ 2009 Ice Jam Flood Aerial
- ✓ 2011 Flood Extents without protection
- ✓ 2011 Project Limits and protected area
- ✓ 2011 Assessment District Area

MRCC – Department of Corrections Property

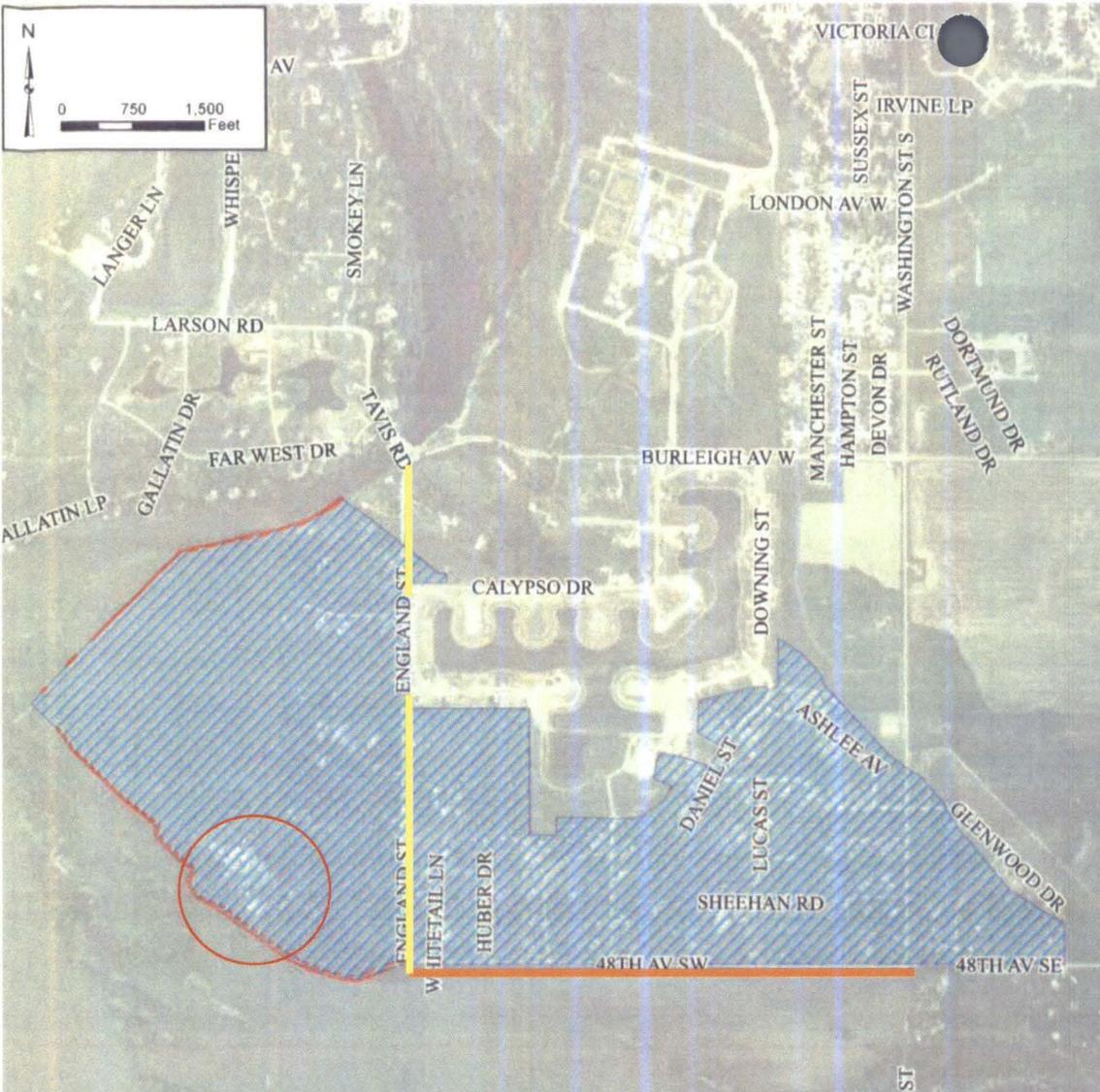


Date: 25MAR09
TOT: 1341Z
Location: South of Bismarck, ND
Latitude: N 46° 44.87' / Longitude: W 100° 50.59'
Object: Missouri River





Missouri River Correctional Center Flood Control Project
19.5 Foot Stag - Existing Conditions Unprotected Flood Limits



Missouri River Correctional Center Protection Area

*Assessed Properties based on
extent of 2011 Flood Boundary
and Benefit.*

- 2011 Temporary Levee
- #24 - 48th Avenue Grade Raise (2014)

Legend

Protected Area 1635.65

MRCC Levee

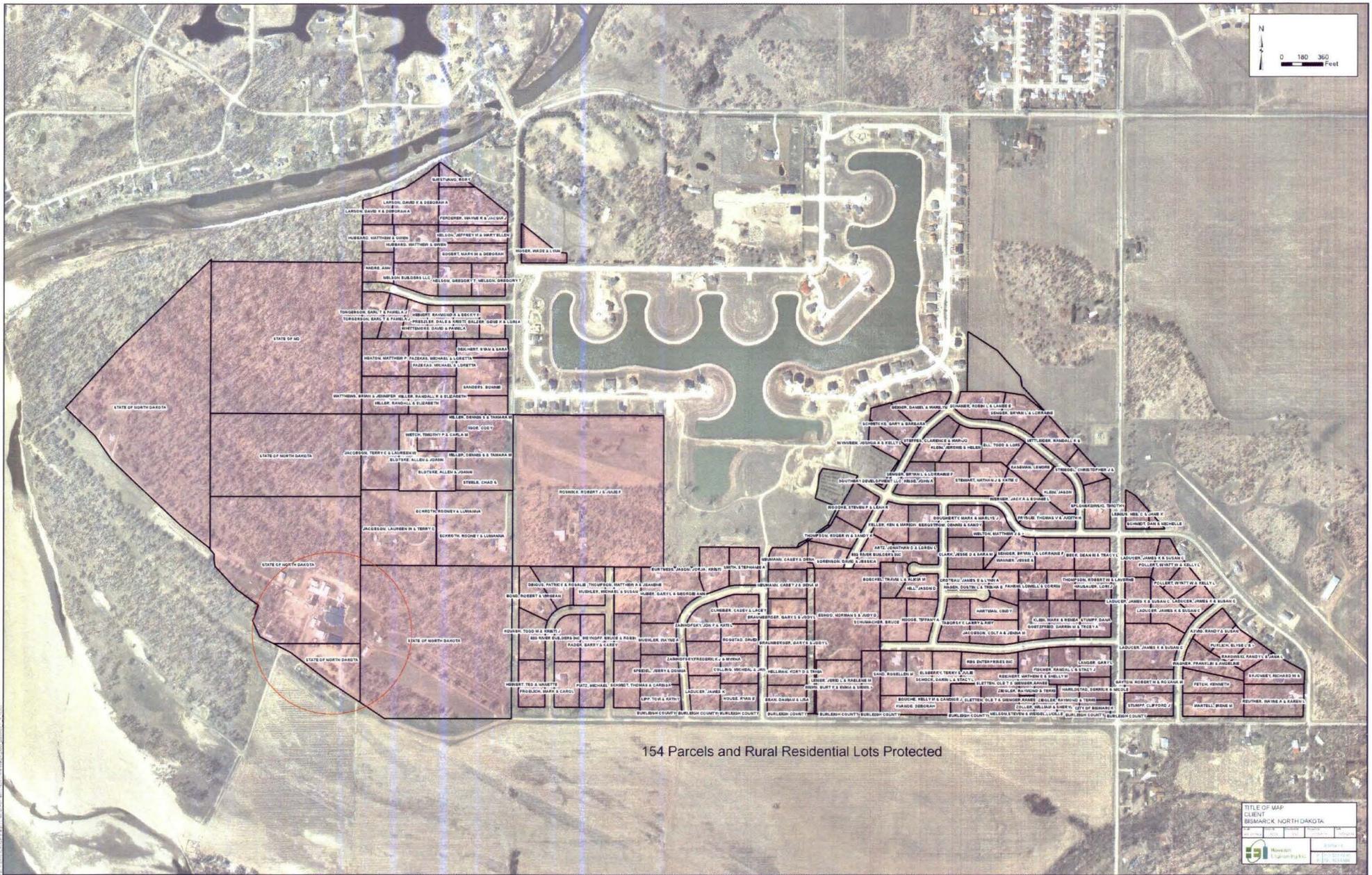
FIGURE 5 - MRCC LEVEE PROTECTION AREA

Scale	Drawn By	Checked By	Project No.	Date
As Shown	NRC	MHG	6025-012	7/18/2013

Houston Engineering, Inc.

Bismarck

P: 701.423.0200
F: 701.423.0300



154 Parcels and Rural Residential Lots Protected

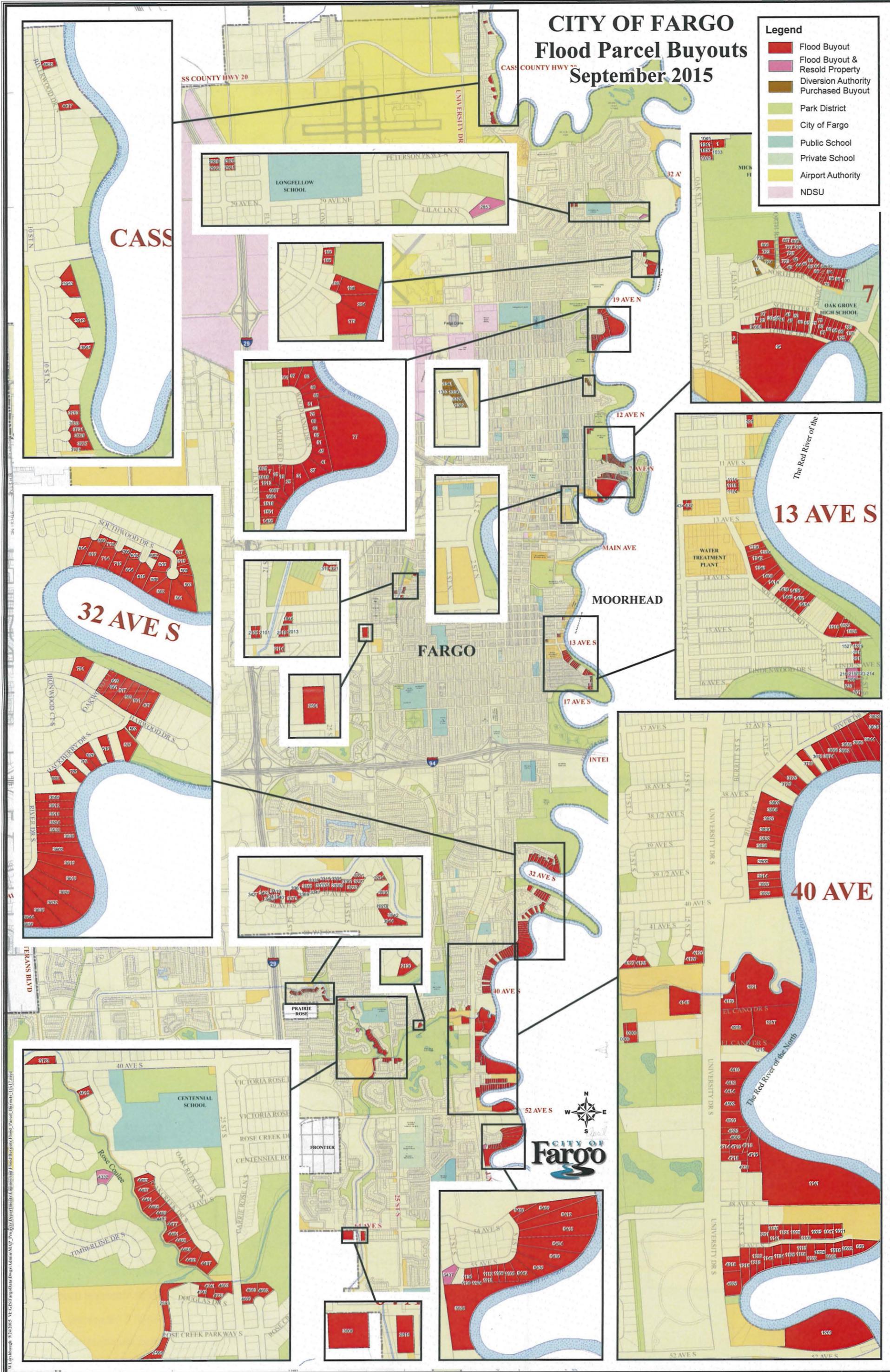
TITLE OF MAP
 CLIENT
 BISMARCK, NORTH DAKOTA

DATE	SCALE	PROJECT	DRAWN BY

Harrison
 Engineering

CITY OF FARGO Flood Parcel Buyouts September 2015

Legend	
	Flood Buyout
	Flood Buyout & Resold Property
	Diversion Authority Purchased Buyout
	Park District
	City of Fargo
	Public School
	Private School
	Airport Authority
	NDSU

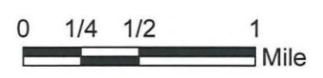
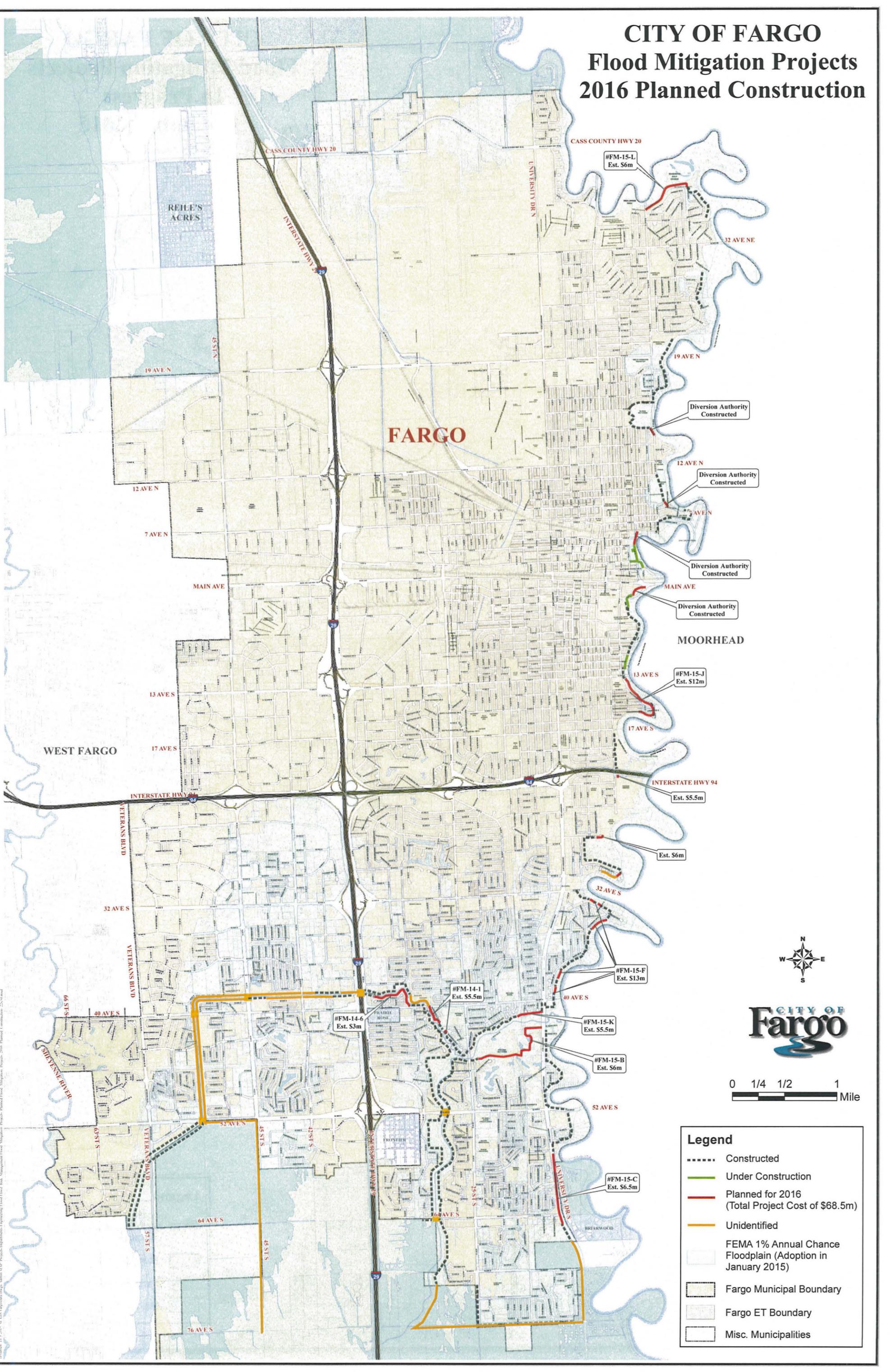


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CITY OF FARGO

Flood Mitigation Projects

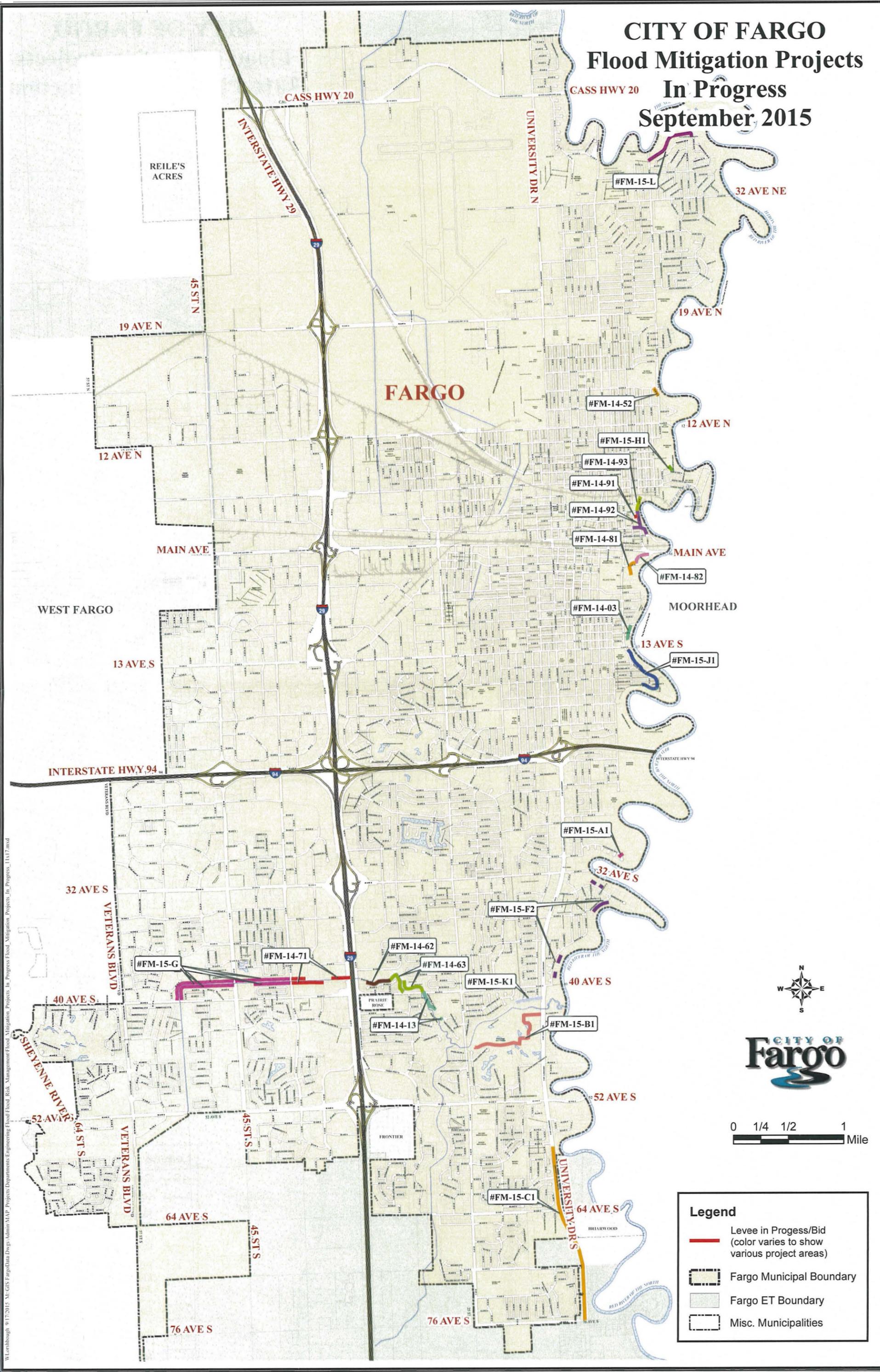
2016 Planned Construction



Legend	
-----	Constructed
-----	Under Construction
-----	Planned for 2016 (Total Project Cost of \$68.5m)
-----	Unidentified
-----	FEMA 1% Annual Chance Floodplain (Adoption in January 2015)
-----	Fargo Municipal Boundary
-----	Fargo ET Boundary
-----	Misc. Municipalities

11/13/2014 11:00 AM GIS Department, Engineering Department, Flood Mitigation Project, Planned Flood Mitigation Project, 2016 Planned Construction, 25x17.mxd

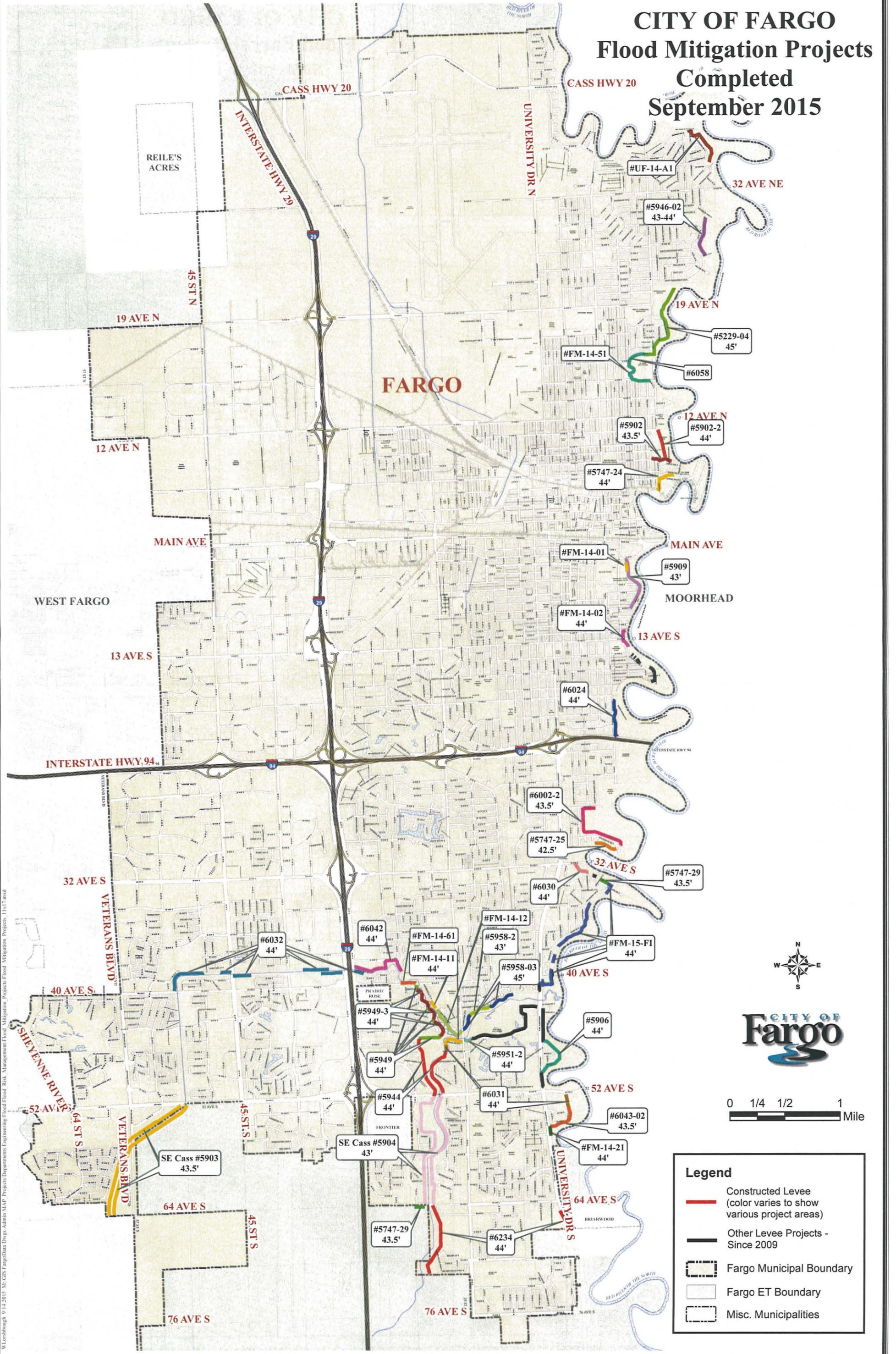
CITY OF FARGO Flood Mitigation Projects In Progress September 2015



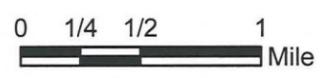
Legend	
	Levee in Progress/Bid (color varies to show various project areas)
	Fargo Municipal Boundary
	Fargo ET Boundary
	Misc. Municipalities

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CITY OF FARGO Flood Mitigation Projects Completed September 2015



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Legend

- Constructed Levee
(color varies to show various project areas)
- Other Levee Projects - Since 2009
- Fargo Municipal Boundary
- Fargo ET Boundary
- Misc. Municipalities