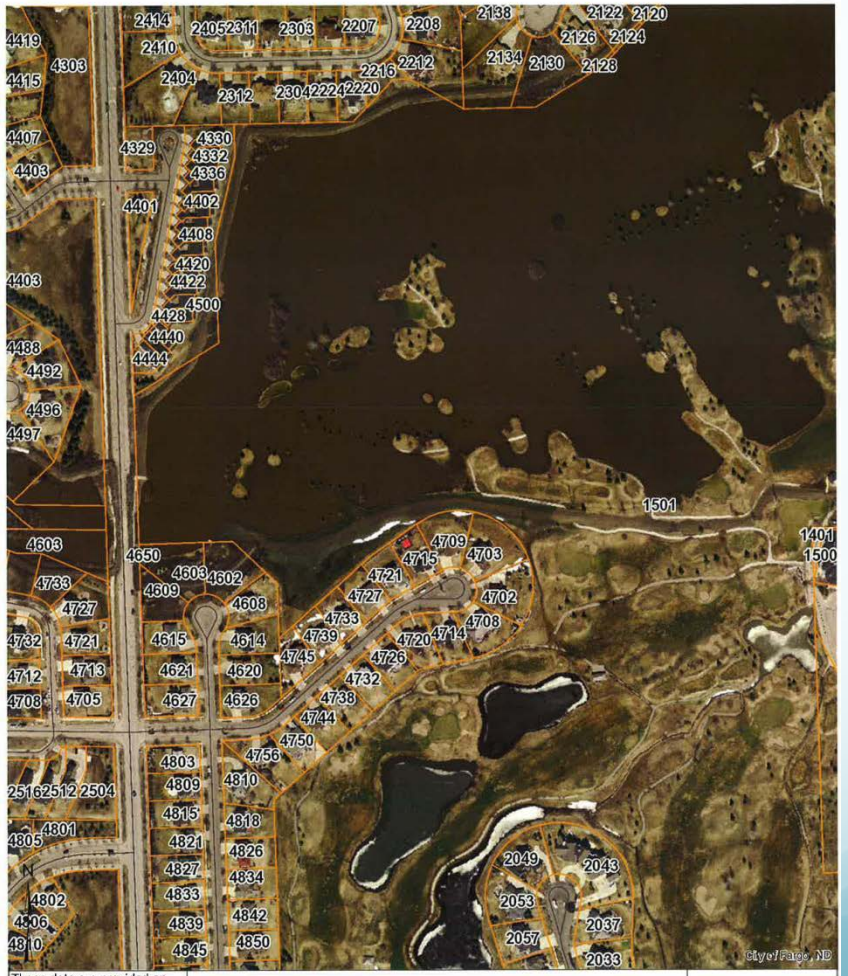
Rose Creek Flood Risk Management Project
City of Fargo - Project #FM-15-B0

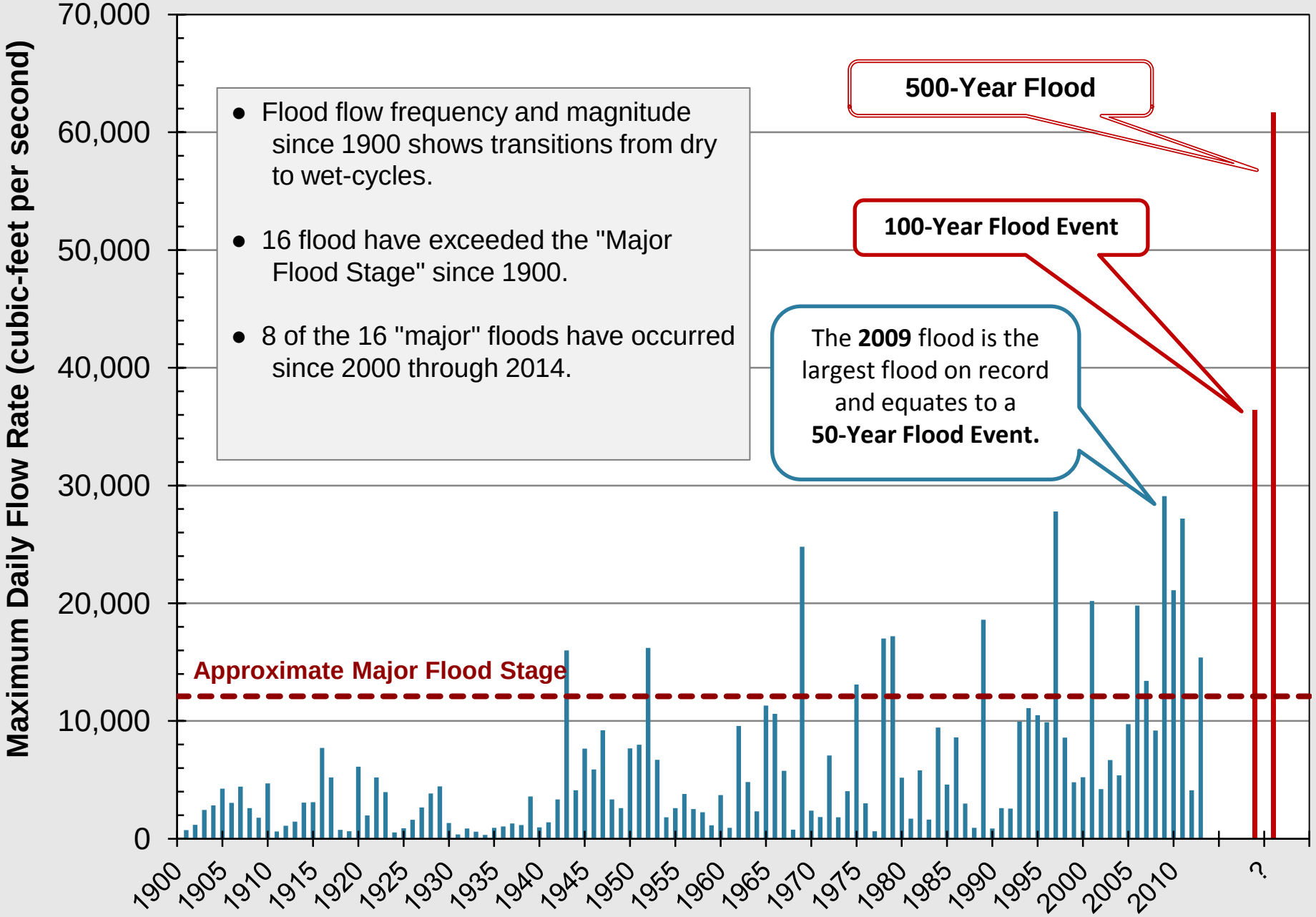
Public Informational Meeting
November 10, 2015

Overview / Why Are We Here?

- Flood Risk
- FEMA Mapping
- Past Floods
- Project Summary
- Path Forward / Project Schedule
- Acquisitions Overview
- Questions



Red River of the North at Fargo, North Dakota



Source: USGS river flow data from USGS Station

Changing flood risk

- Now Effective Floodplain
  - 39.4 Feet River Gage (29,300 cfs)
  - Approx. 2,051 Impacted Structures
  - Approx. 7,500 Impacted properties
  - 27,600 Acres Impacted
  - After Diversion – This elevation will be close to 500-year flood levels

- Flood of Record
  - 40.8 Feet River Gage
  - $70M expended to flood fight

- Future of the Floodplain
  - USACE 41.1 River Gage (34,700 cfs)
  - Approx. 19,400 Impacted Structures
  - 36,430 Acres Impacted

"If I am in a community that we come back five years down the road and they are still talking about a project, I am probably going to change the map then," said Federal Emergency Management Agency's (FEMA) Deputy Associate Administrator for Mitigation, Roy Wright. (April, 2015)

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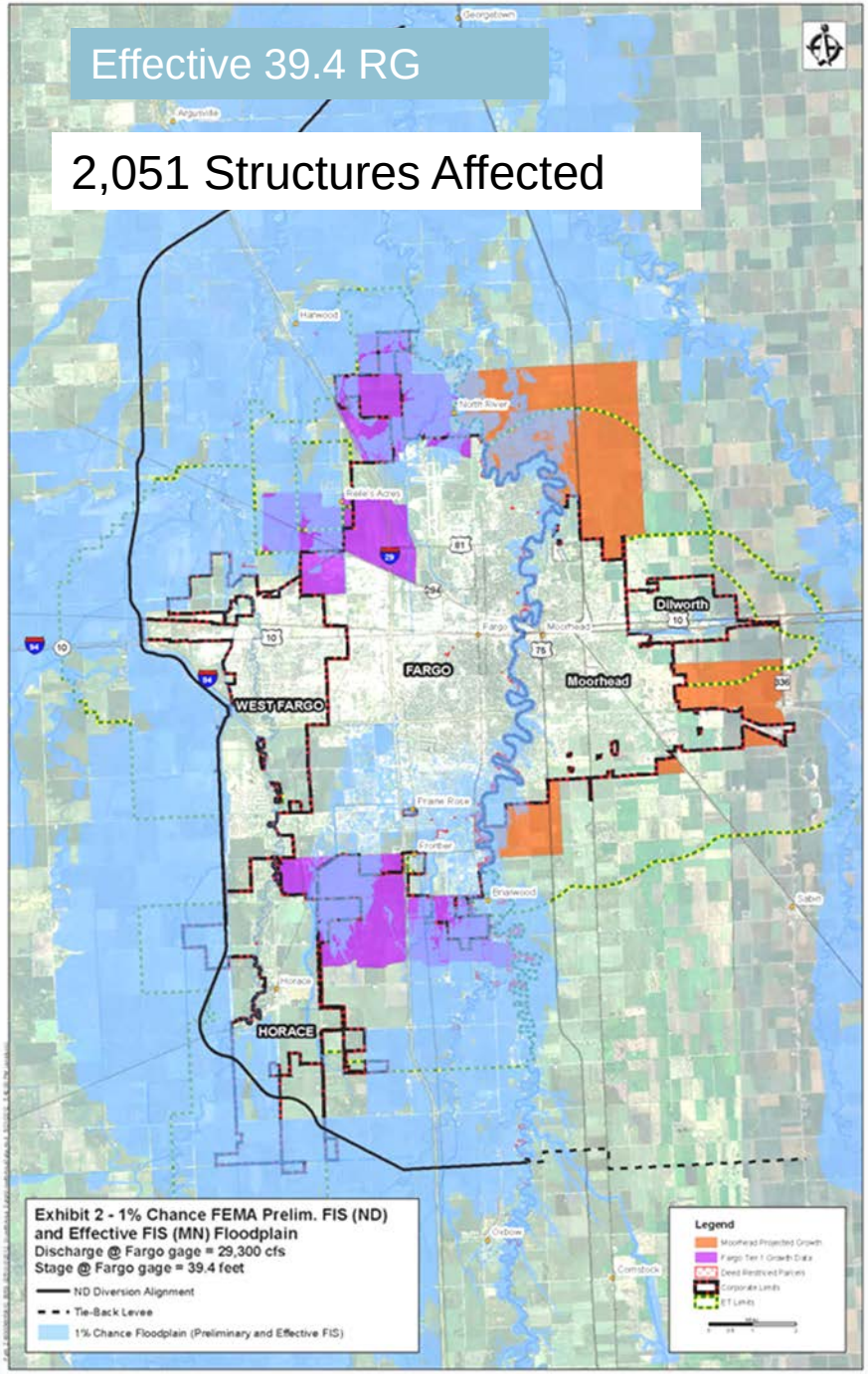
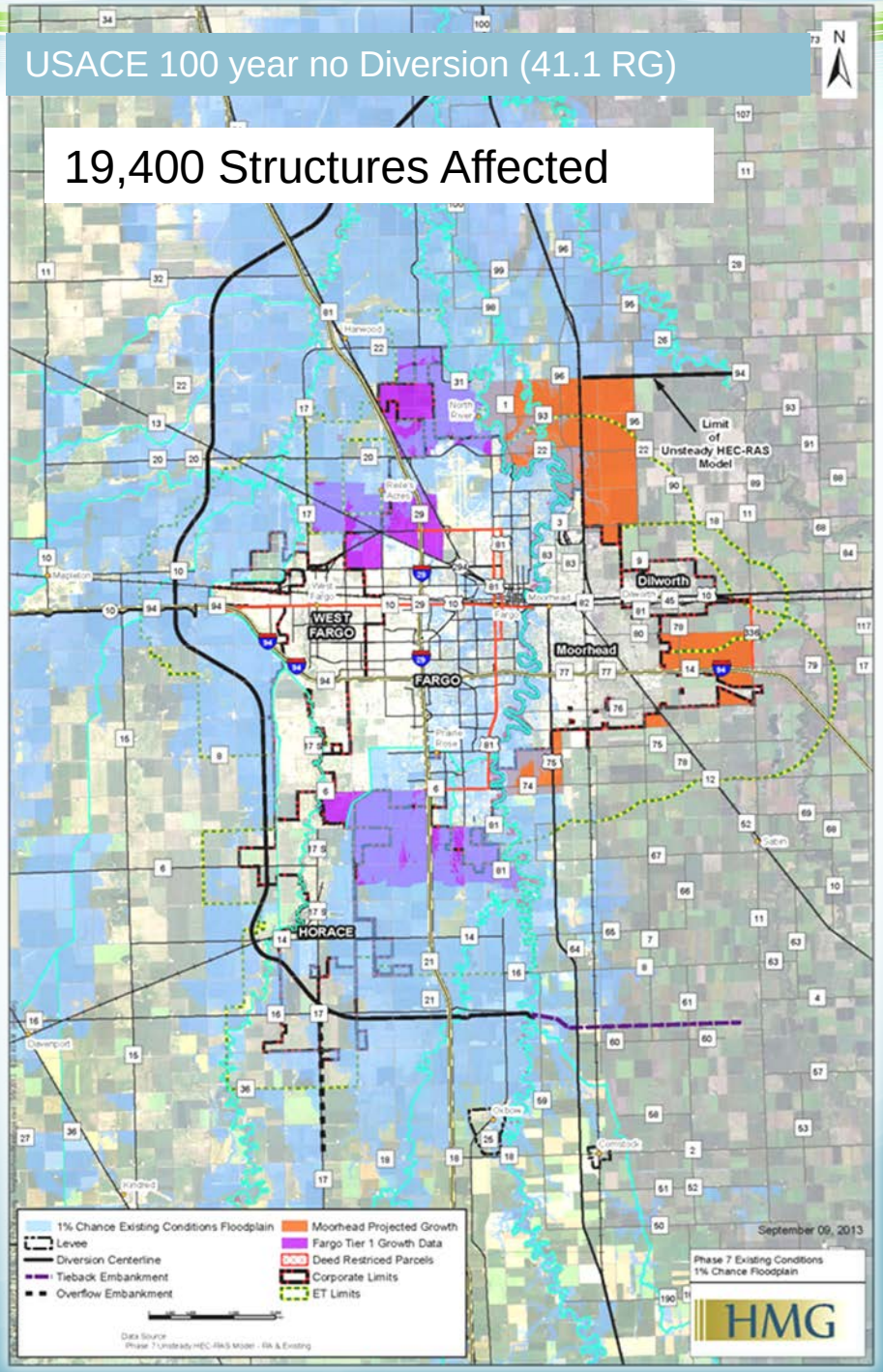
Effective 39.4 RG

2,051 Structures Affected



USACE 100 year no Diversion (41.1 RG)

19,400 Structures Affected



FEMA Floodplain Impacts

FEMA Effective 100yr

Red River Valley Emergency Flood Protection

Peak 40.82 Feet March 28, 2009

FARGO

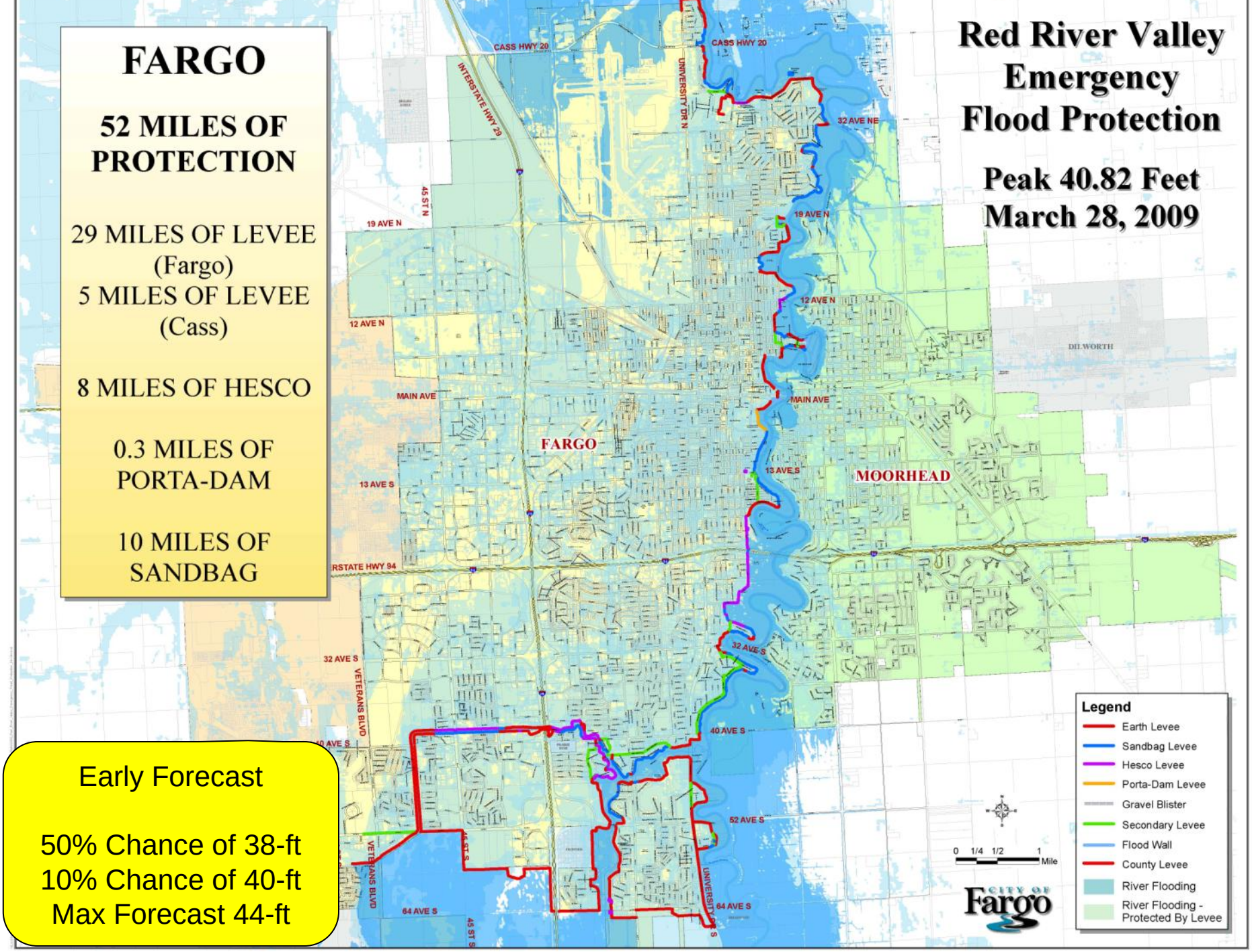
52 MILES OF PROTECTION

29 MILES OF LEVEE (Fargo)
5 MILES OF LEVEE (Cass)

8 MILES OF HESCO

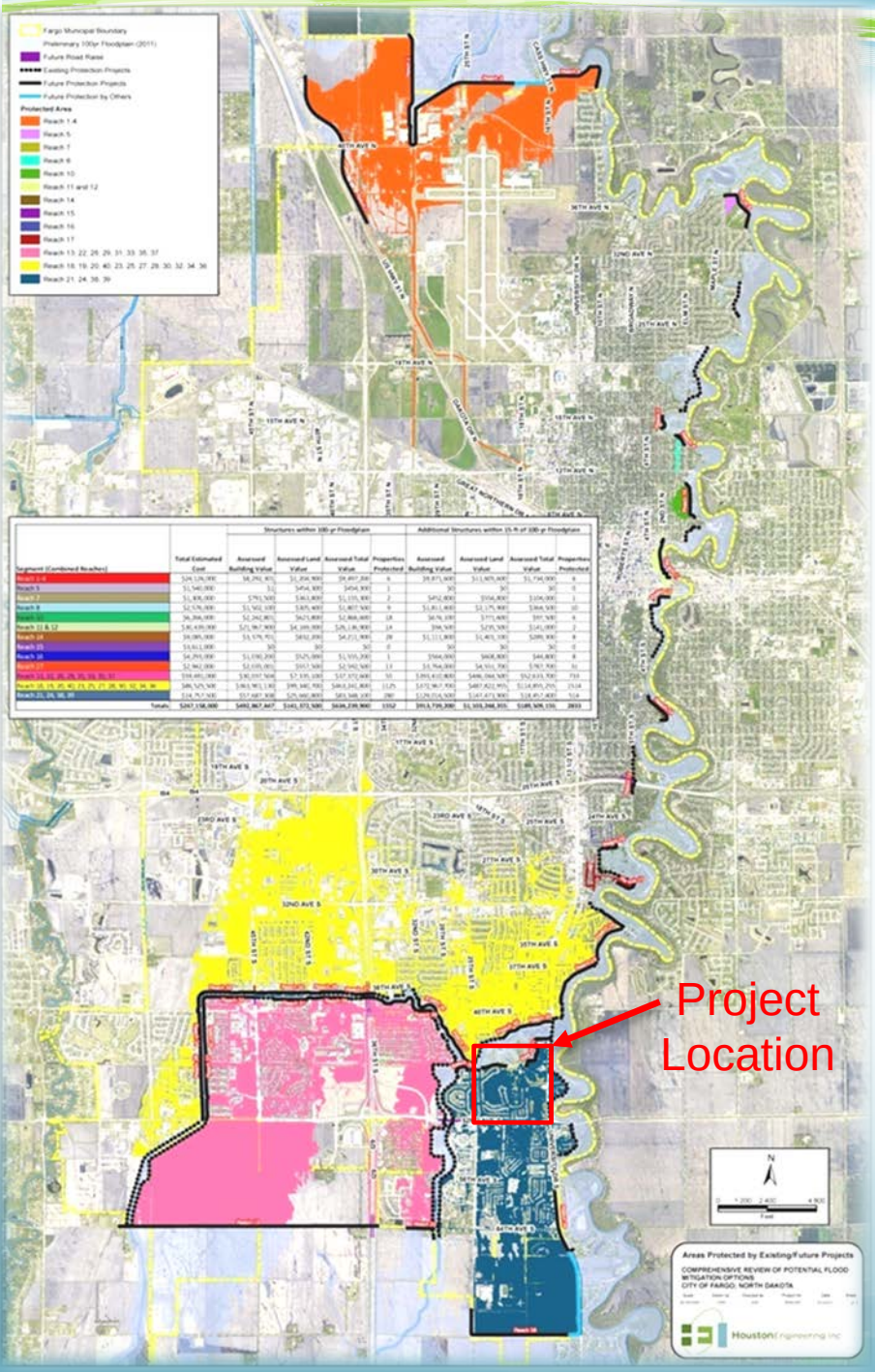
0.3 MILES OF PORTA-DAM

10 MILES OF SANDBAG



Early Forecast

50% Chance of 38-ft
10% Chance of 40-ft
Max Forecast 44-ft



Comprehensive Plan

- Developed in Fall 2011/Winter 2012
- Certifiable Protection From the Effective Floodplain (39.4 Feet)
- Funding limitations require prioritization
- Outstanding Issues
  - With Comprehensive Plan completed would still need:
    - 7.6 miles of emergency clay levees
    - 3.2 miles of sandbag levees

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So…Why implement this Comprehensive Plan?

Short Term:

- Reduce emergency measures-immediate benefit from each project
- Provide real protection for existing homes that were built prior to the knowledge of the increased risk

Long Term:

- Upon completion of Certifiable reaches-Keep Housing Affordable for more of our population by making flood insurance available to residents at the lowest possible rates
- Combined with the FM Diversion- Provide for greater than 100 year protection for the largest population center in ND

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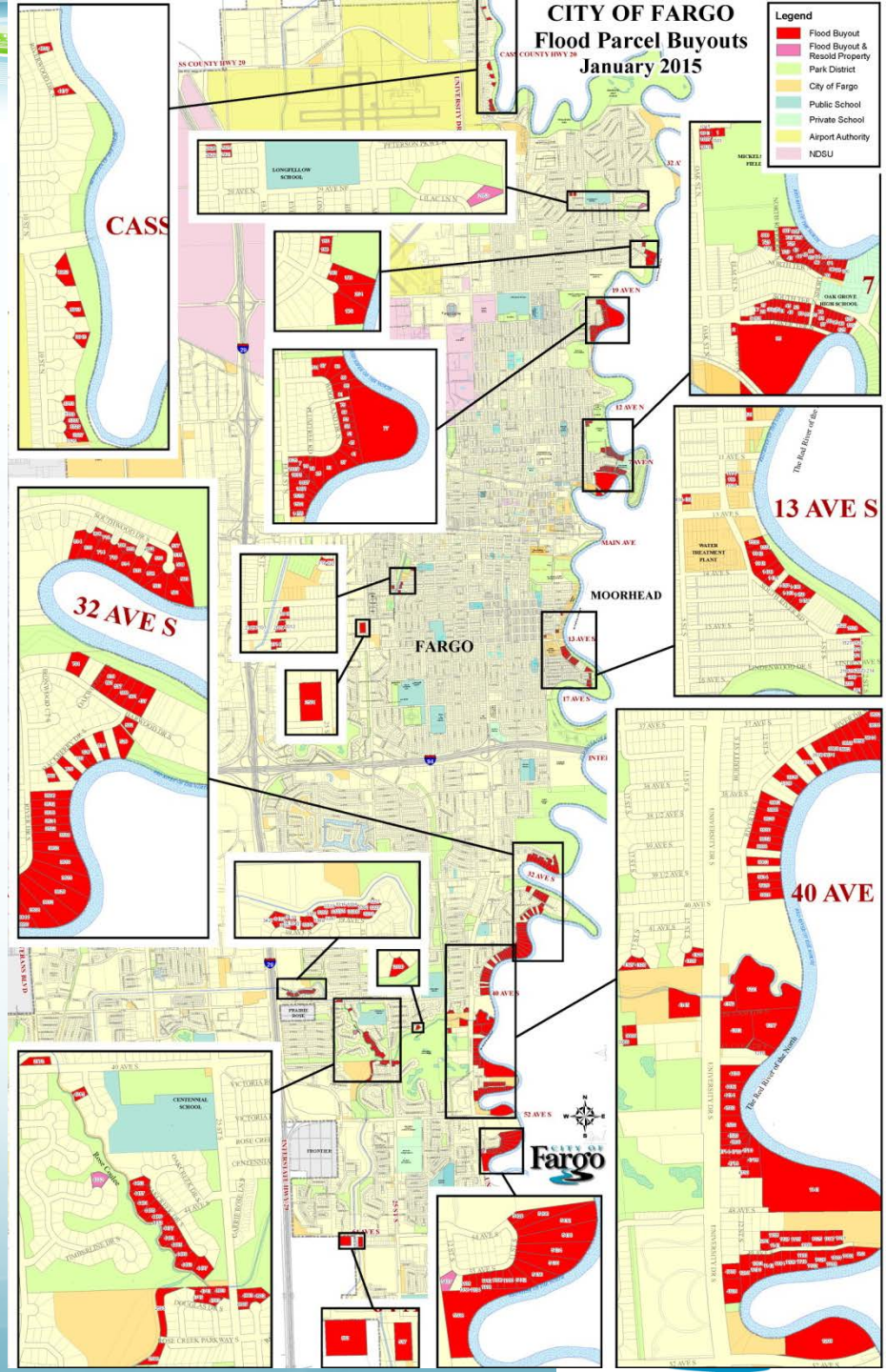
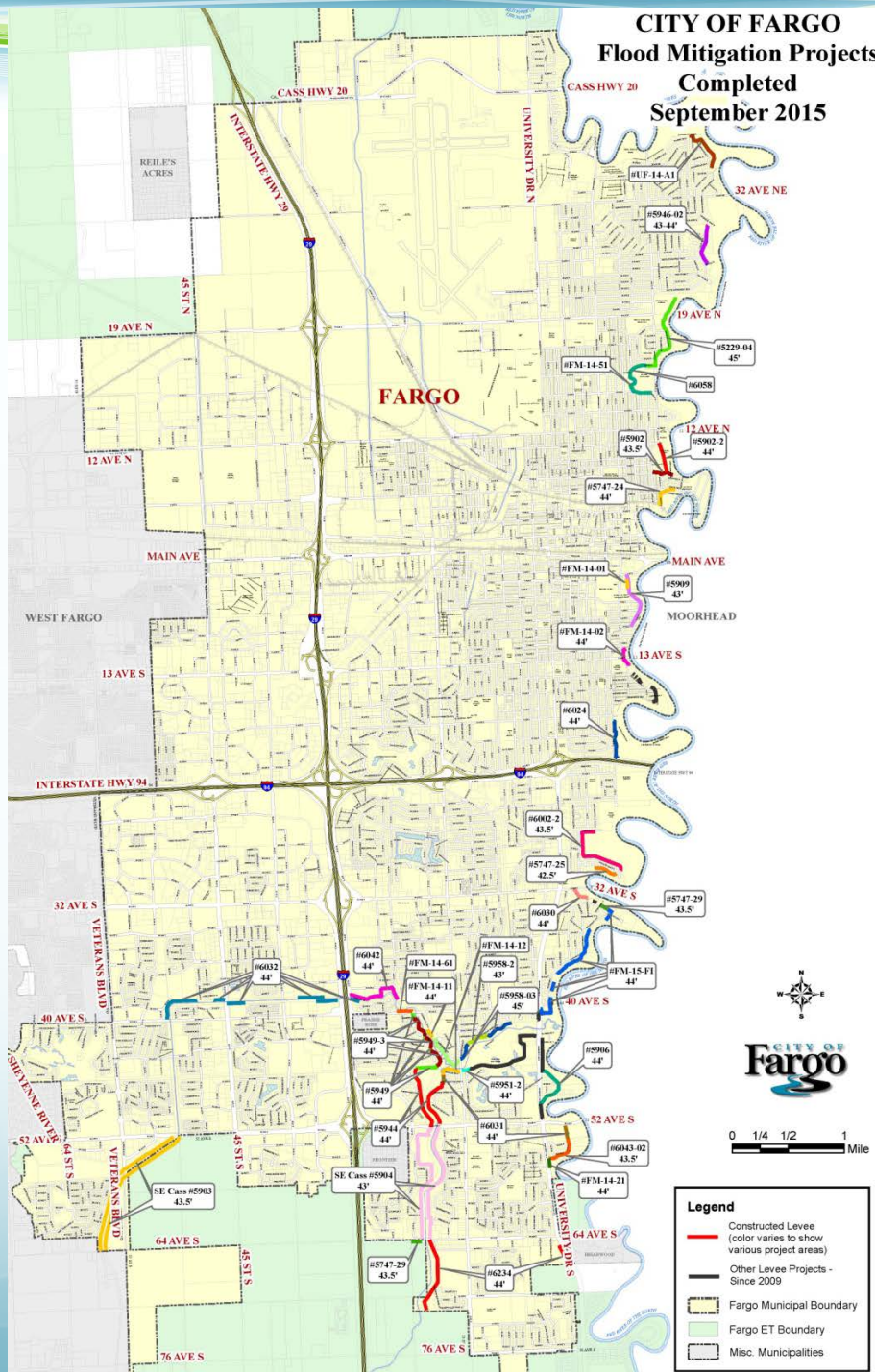
Property Acquisitions (Since 2009)

- 183 Properties Purchased
  - Over 320 since 1990
- At cost of over $59 million
- Cass County purchased 14 additional homes needed
- Diversion Authority is in process of acquiring 17 additional properties within Fargo
- Remaining Properties Under Comprehensive Plan
  - 121 properties to be acquired
  - Approximately $36 million



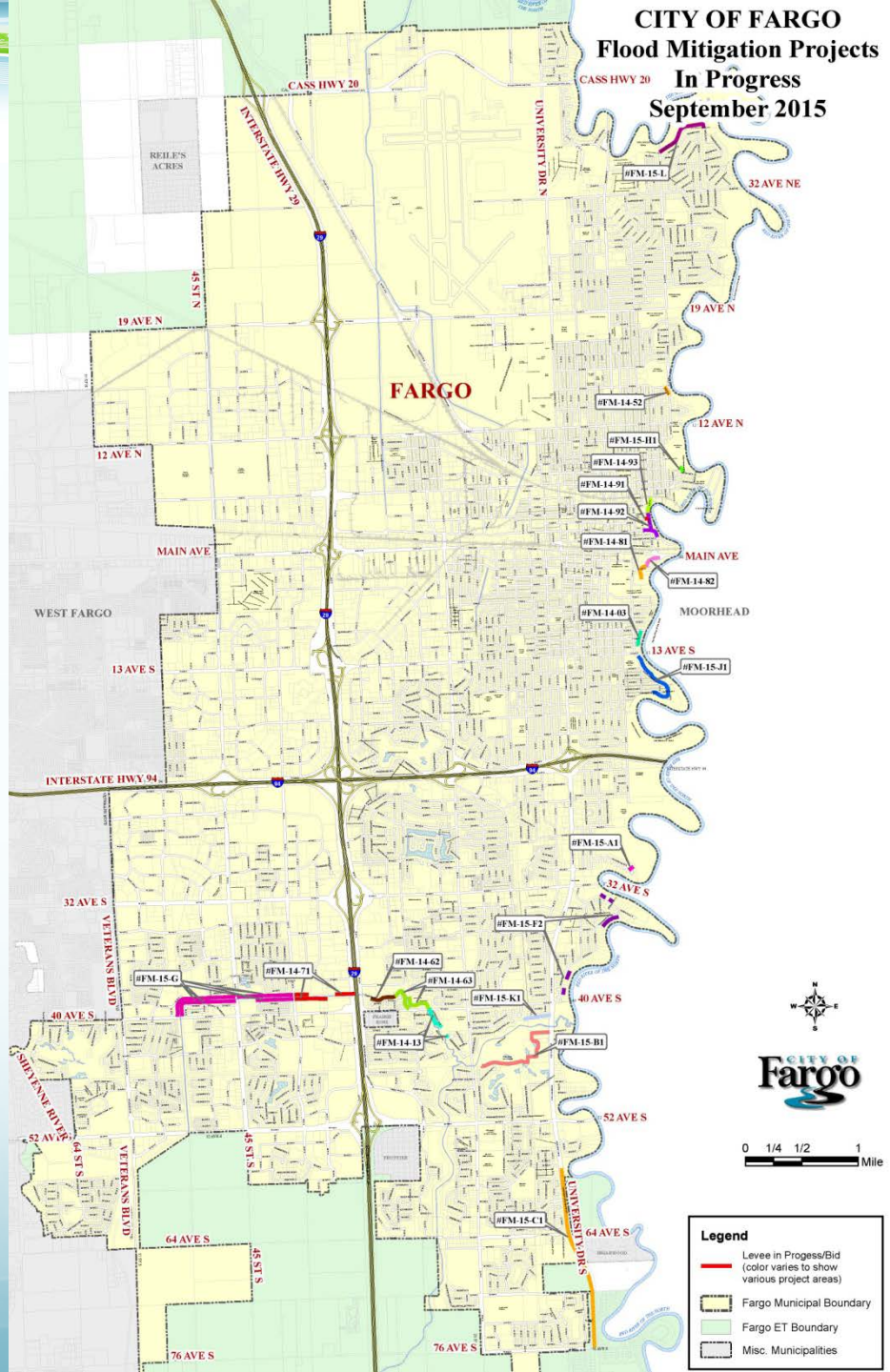
Completed Projects (Since 2009)

- Over 19 miles constructed
  - 47 miles of emergency levees constructed by the City in 2009
- Project Cost ≈ $125 million
- Reduces required sandbags by approximately 4.5 million
- 50% of the Comprehensive Plan Completed



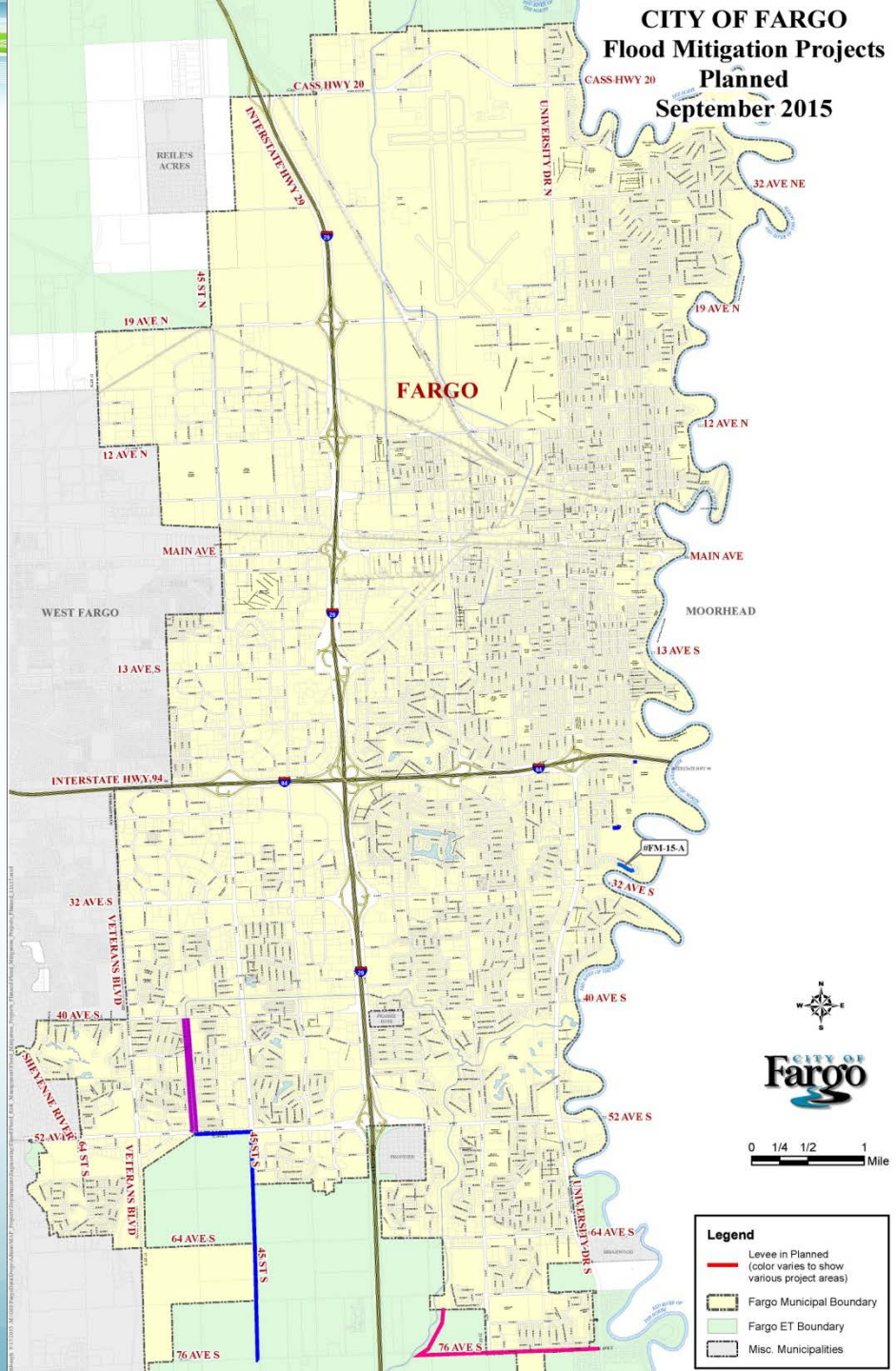
In Progress Projects

- Combination of projects under construction or under design for 2016/2017 construction
  - 12 City of Fargo Led
  - 7 Diversion Authority Led
- Over 3.5 miles in progress
- City Project Cost ≈ $68.5 million
  - Construction Cost ≈ $37million
- 65% of the Comprehensive Plan completed once these projects are done



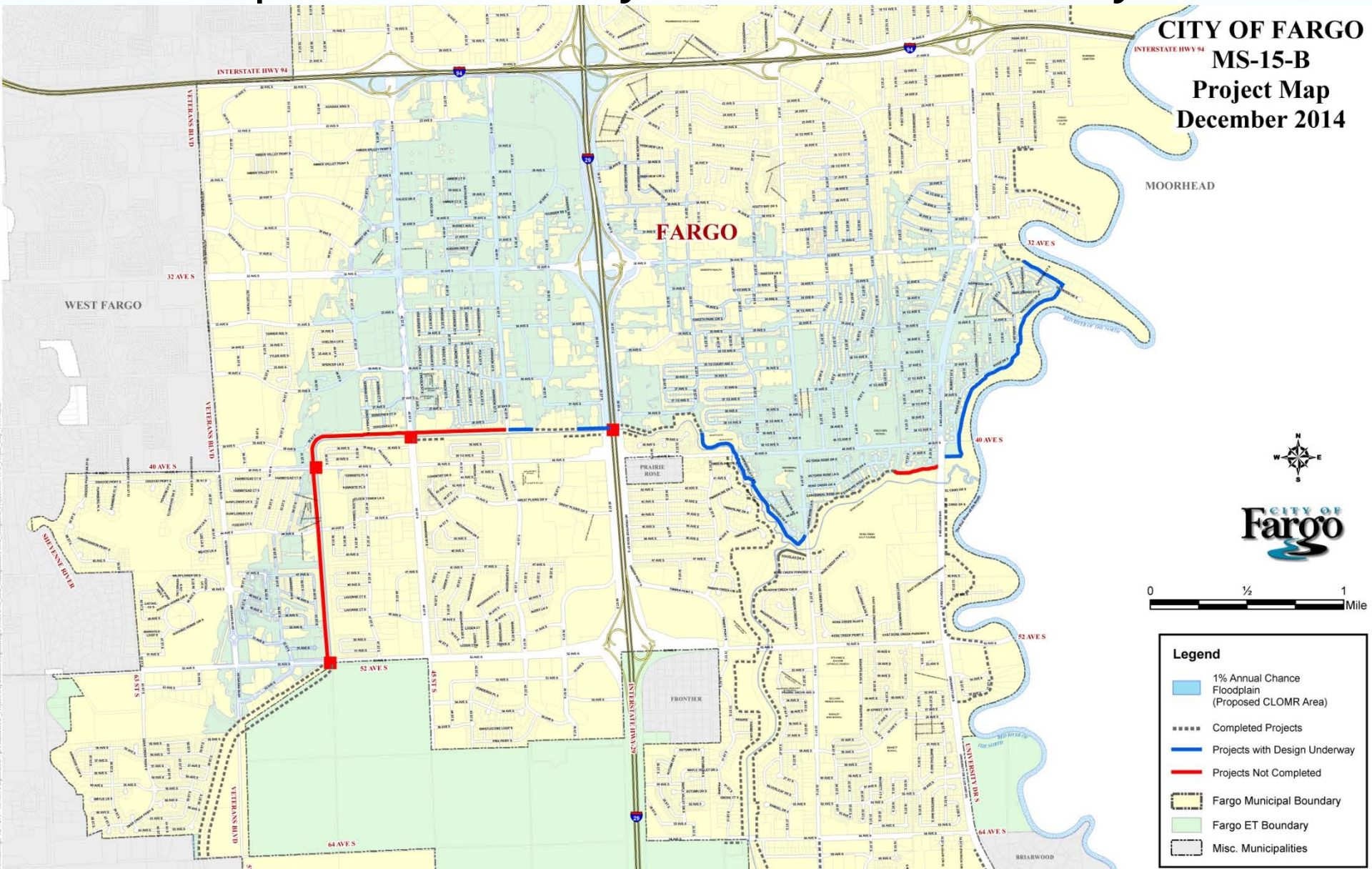
Remaining Projects

- Approx. 10 miles remaining
  - *excludes Cass County 20 Area
- Project Cost ≈ $130 million
  - **# Does not include south side line of protection**
  - # Does not include 2016 planned projects
  - # Does not included Diversion Authority More Flow Through Town Projects
- Type of Projects:
  - Levees along River & Legal Drains
  - Road Raises
    - Includes Interstate 29 at Drain 27
- 92% of the Comprehensive Plan would be completed



Comprehensive Plan

Example of Potentially Certifiable Levee System



Frequently Asked Questions

- Why build levee if Diversion Project is constructed?
  - Levee will provide real/interim flood protection
  - Levee will be compatible with the Diversion Project by providing protection on the greater than 100 year flood events
  - Levee + Diversion = Increased level of flood protection

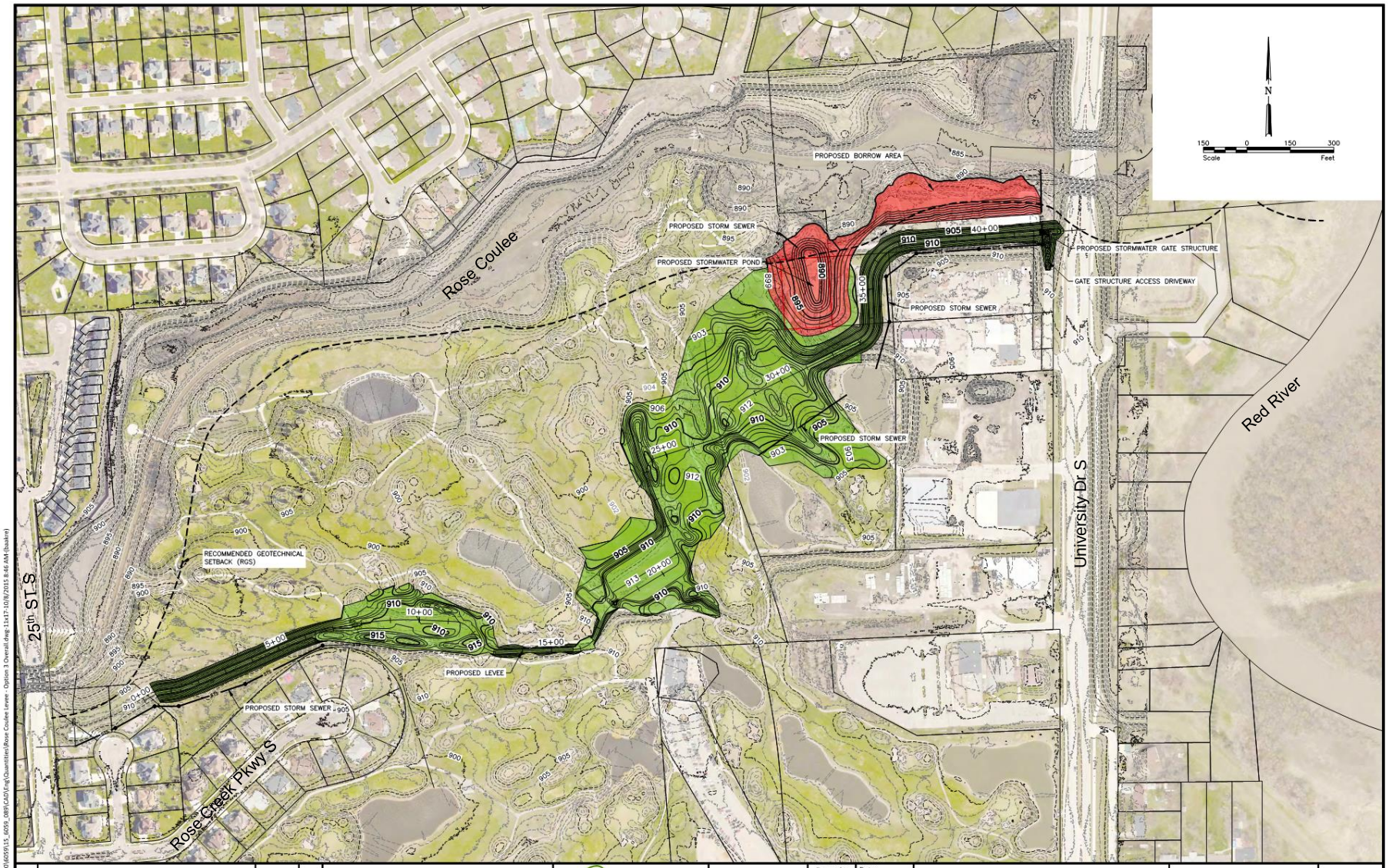
- Will I be assessed for this levee project?
  - No – levee is being designed and constructed with Fargo Infrastructure Sales Tax Dollars, as well as dollars from the State

Proposed Project

Design Goals

- Construct a certifiable levee between 25th St. S. and University Dr. S.
- Minimize the impacts to private property
- Integrate the levee system into the golf course

Proposed Project



Proposed Project – Levee Grading

No.	Revision	Date	By

Houston Engineering Inc.

Fargo
P: 701.237.5065
F: 701.237.5101

Drawn by	Date
BJA	10-7-15
Checked by	Scale
MPL	AS SHOWN

ROSE COULEE FLOOD PROTECTION
CITY OF FARGO
FARGO, NORTH DAKOTA

ROSE COULEE LEVEE
OPTION 3
PROJECT NO. 6059-089

SHEET
1 of 3

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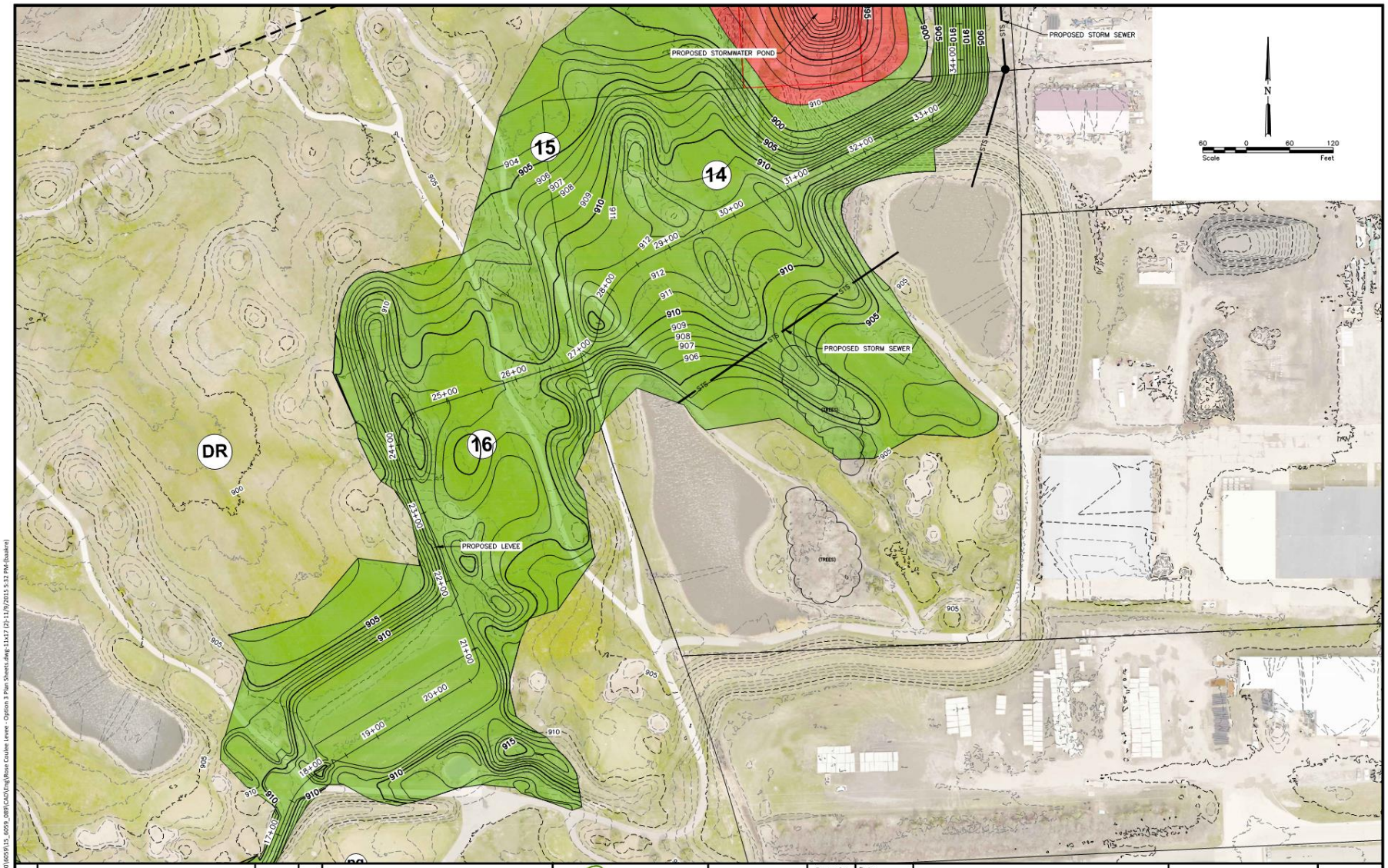
Proposed Project – Levee Grading



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ROSE COULEE FLOOD PROTECTION
CITY OF FARGO
FARGO, NORTH DAKOTA

ROSE COULEE LEVEE
OPTION 3
PROJECT NO. 6059-089

SHEET
2 of 3

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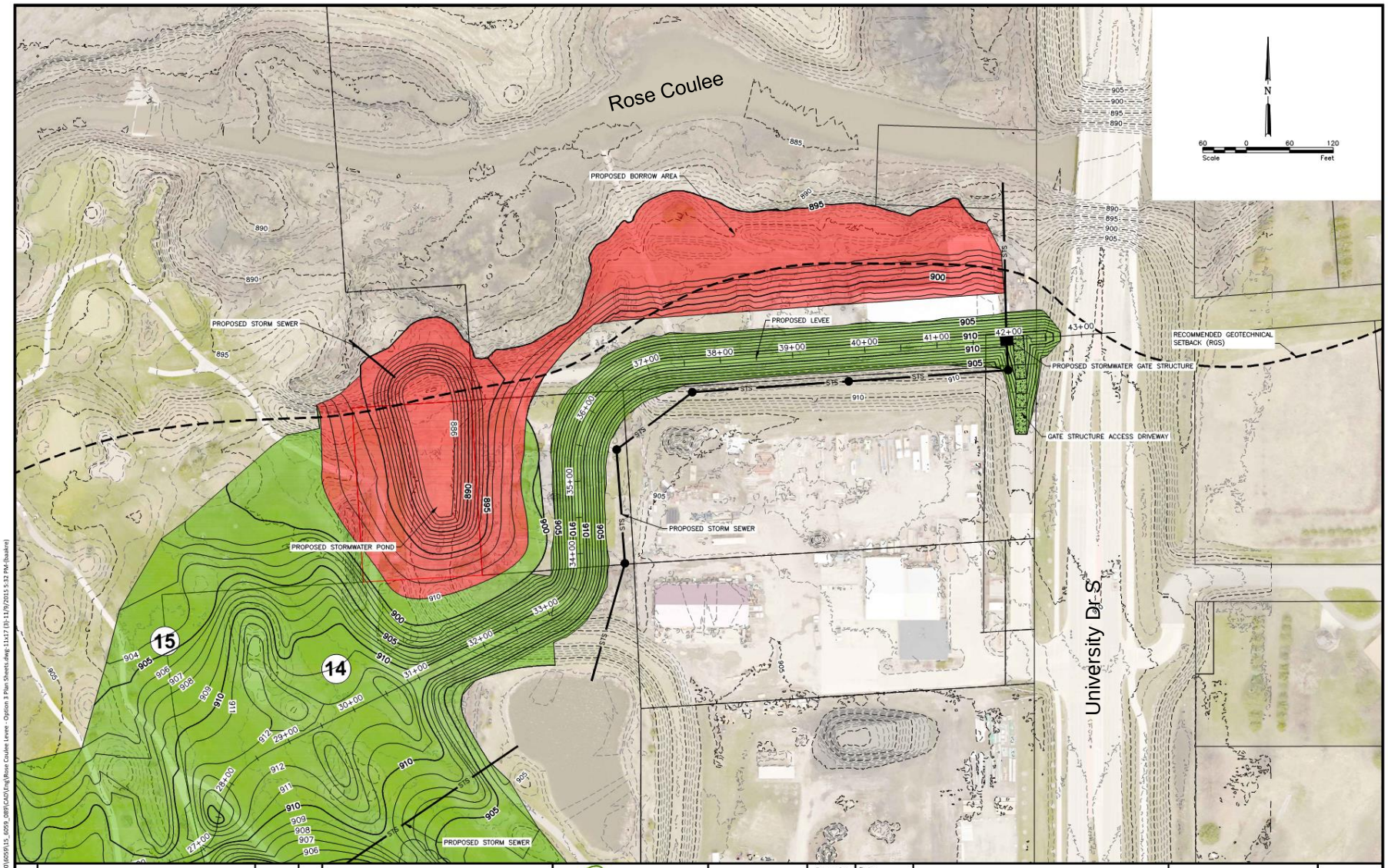
Proposed Project - Levee Grading



No.	Revision	Date	By

Houston Engineering Inc.

Fargo
P: 701.237.5065
F: 701.237.5101

Drawn by BJA | Date 10-7-15
Checked by MPL | Scale AS SHOWN

ROSE COULEE FLOOD PROTECTION
CITY OF FARGO
FARGO, NORTH DAKOTA

ROSE COULEE LEVEE
OPTION 3
PROJECT NO. 6059-089

SHEET 3 of 3

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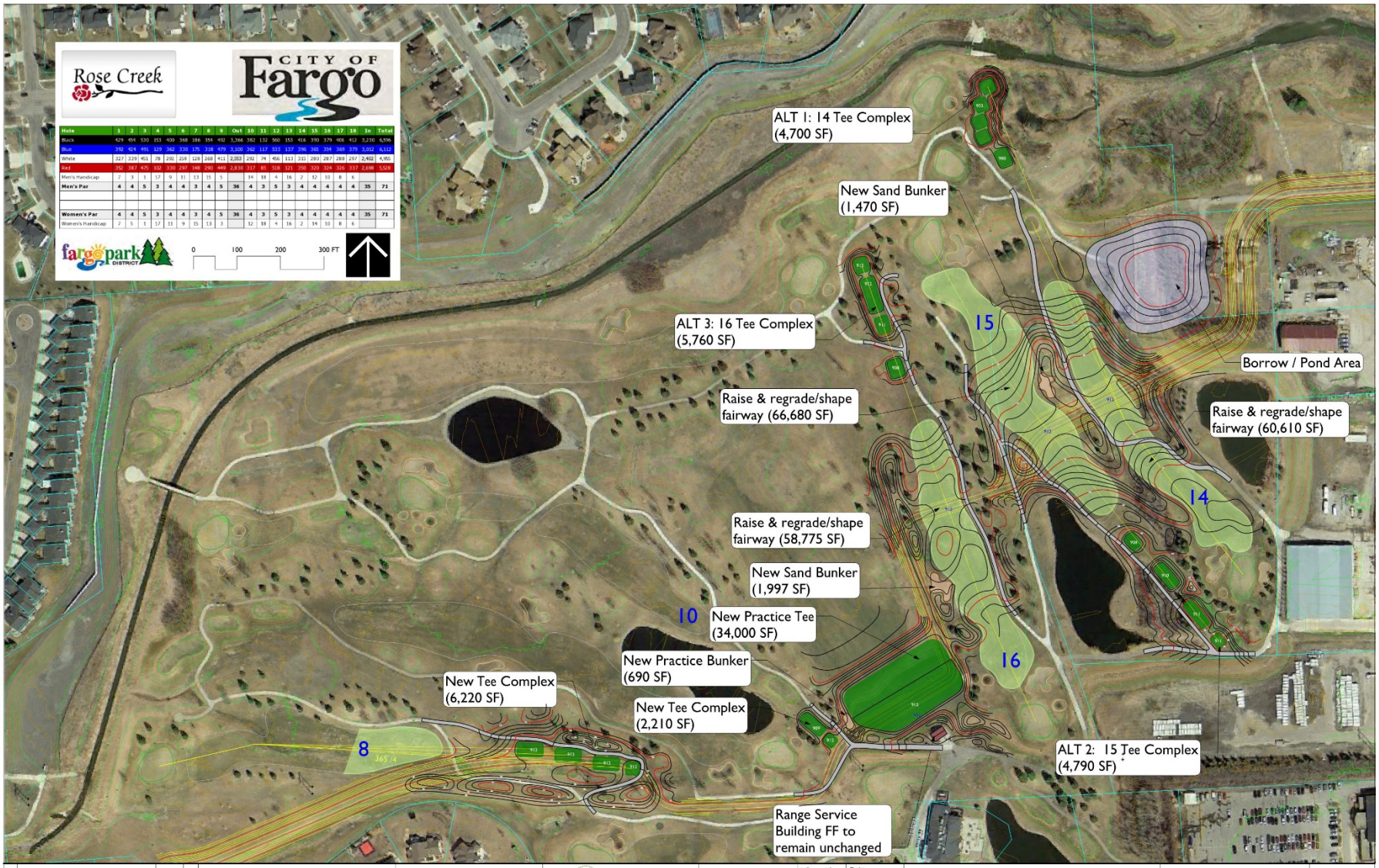
Proposed Project - Golf Course Features



Hole	1	2	3	4	5	6	7	8	9	Out	10	11	12	13	14	15	16	17	18	In	Total
Black	429	494	530	153	400	368	186	354	492	3,386	382	132	560	153	416	390	379	406	412	3,230	6,596
Blue	392	424	491	129	362	330	175	318	479	3,100	362	117	533	137	396	365	394	369	379	3,012	6,112
White	327	339	461	78	292	259	128	268	411	2,583	292	74	456	113	315	280	287	288	297	2,402	4,985
Red	352	387	475	102	330	297	148	290	449	2,830	317	85	518	121	350	320	324	326	337	2,698	5,528
Men's Handicap	7	3	1	17	9	11	13	15	5		14	18	4	16	2	12	10	8	6		
Men's Par	**4**	**4**	**5**	**3**	**4**	**4**	**3**	**4**	**5**	**36**	**4**	**3**	**5**	**3**	**4**	**4**	**4**	**4**	**4**	**35**	**71**
Women's Par	**4**	**4**	**5**	**3**	**4**	**4**	**3**	**4**	**5**	**36**	**4**	**3**	**5**	**3**	**4**	**4**	**4**	**4**	**4**	**35**	**71**
Women's Handicap	7	5	1	17	11	9	15	13	3		12	18	4	16	2	14	10	8	6		

No	Revision	Date	By

Design Option 3 w/Tee Alternates

GILL DESIGN Golf Course Architects

Houston Engineering Inc.

Fargo
P: 701.237.5065
F: 701.237.5101

Drawn by CAD | Date 10-08-2015
Checked by ENG | Scale AS SHOWN

Rose Creek Golf Course Levee Improvement Project
City of Fargo
200 3rd Street North, Fargo, ND 58102

Option 3
PROJECT NO. **FM-15-B0**

SHEET **2** of 2

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Path Forward / Schedule

- December 2015 – Park Board Review
- January 2016 – City Commission Review
- Early 2016 – Project Design
- Mid/Late 2016 – Potentially Begin Construction on Portions or all of the Project
- $3.6 Million Estimated Construction Cost

Acquisition Overview

- General R/W Acquisition Information
  - 1 Single Family Home
  - 2 Easements
    - 1 from Parks
    - 1 from PKG Property

Questions/Comments?

http://www.cityoffargo.com/ - Flood Control Projects
www.fargofloodinsurance.com
feng@cityoffargo.com