



Woodcrest Neighborhood Meeting

Project #FM-19-C

December 11, 2019

5:30 PM



Overview

- *Status of Last Meeting*
- *Recommended Plan*
- *Project Timeline*
- *Questions*

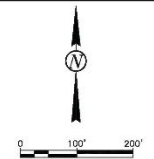
STATUS OF LAST MEETING

- Public Informational Meeting (8/22)
 - Public Comment Period (Until 8/30)
- Stake Alignment(s) (9/9-9/11)
- On-Site Alignment Meetings (9/12)
- Revised Preliminary Project Design
 - Public Comments & On-Site Discussions
 - Soil Borings
 - Geotechnical Analysis
 - Hydraulic Analysis
- 2ND Neighborhood Meeting (12/11)



Previous Alignment

PREVIOUS ALIGNMENT – PRESENTED IN AUGUST




 Proj. No. 6059-0165
Houston
 Engineering Inc.
 Ph: 701.237.5065

ALL ELEVATIONS ARE BASED ON THE U.S.S. VERTICAL DATUM OF 1988. (UNLESS NOTED OTHERWISE)

REVISIONS		
①	②	③

SEAL

PRELIMINARY

Overall
 Woodcrest FMP
 PROJECT FM-19-C0

DESIGN BY: RJC
 DRAWN BY: JGH


THE CITY OF
Fargo
 FAR MORE

08/21/19 09:09:07PM C:\Users\jvengal\appdata\local\temp\AutoCAD\190821\190821.dwg and Corridor.dwg

PREVIOUS ALIGNMENT – PRESENTED IN AUGUST




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REVISIONS	
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SEAL

PRELIMINARY

Plan View

Woodcrest FMP

PROJECT *F/M-19-C0*

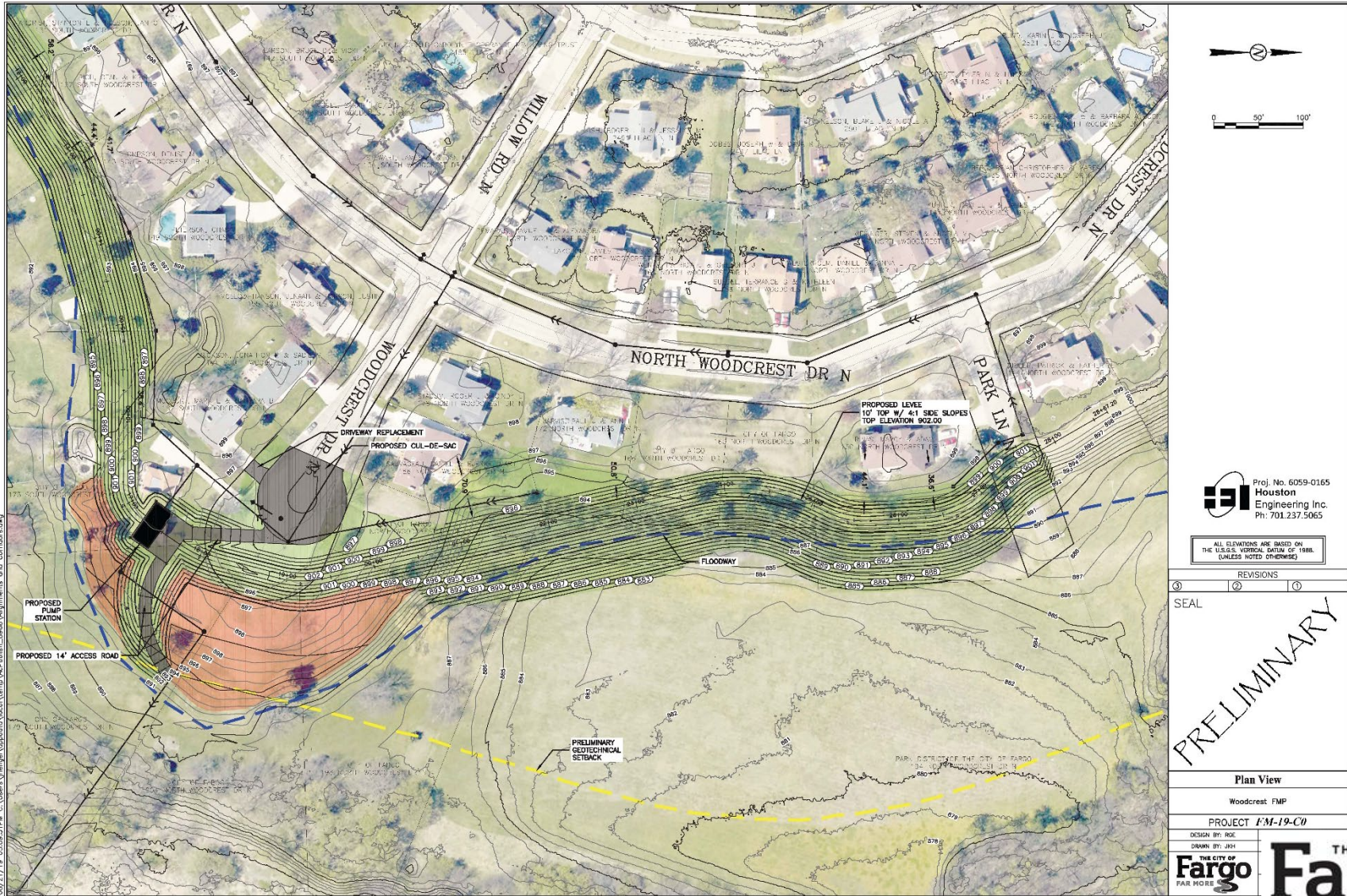
DESIGN BY: RGE

DRAWN BY: JKH



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PREVIOUS ALIGNMENT — PRESENTED IN AUGUST




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SEAL

PRELIMINARY

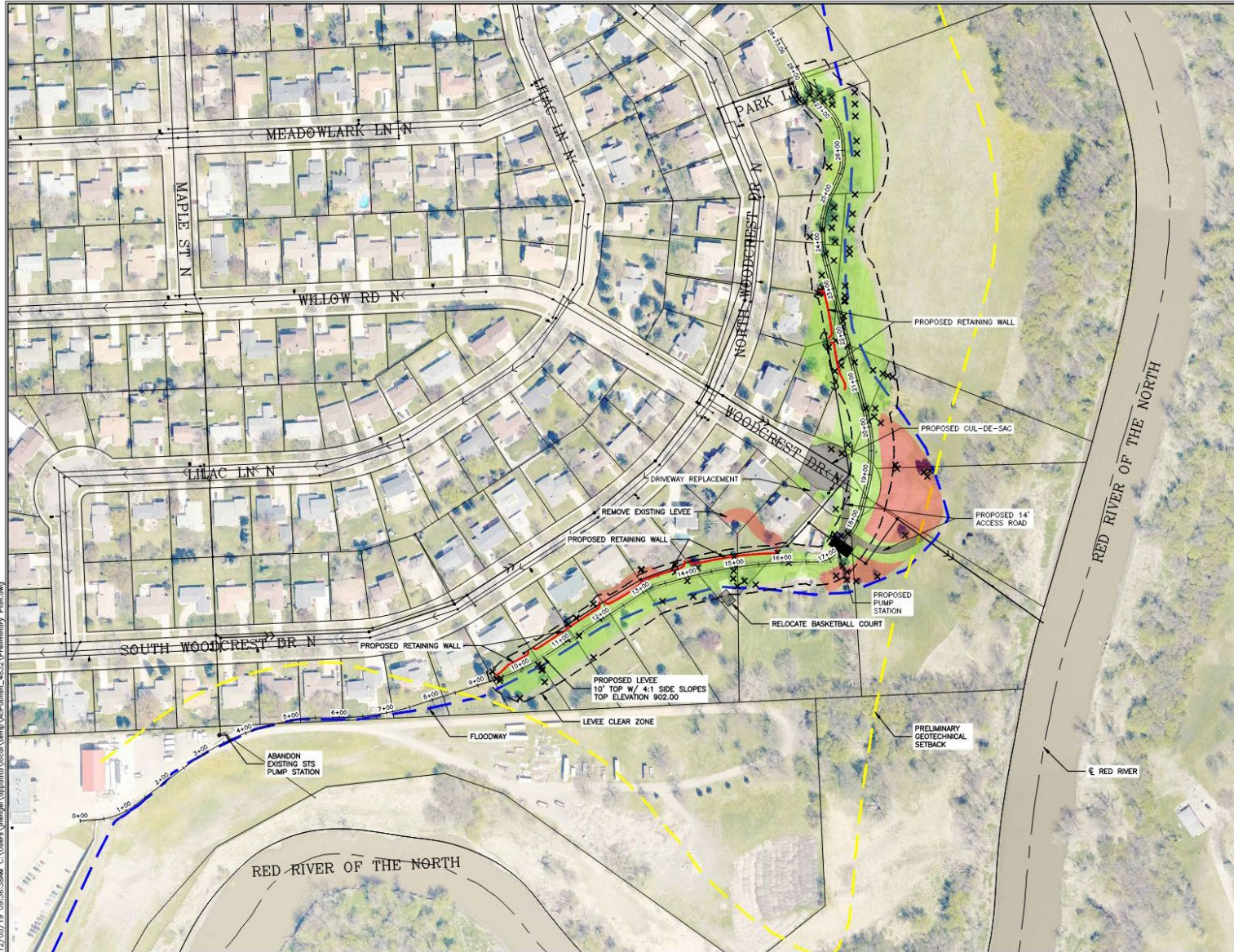
Plan View
 Woodcrest FMP
 PROJECT FM-19-C0
 DESIGN BY: ROE
 DRAWN BY: JKH

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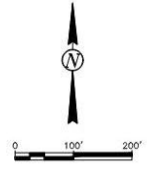


Revised Alignment

REVISED ALIGNMENT



12/25/19 10:36:38AM C:\Users\jhenry\appdata\local\temp\Ac\Fatimah_4832\ Preliminary Plan.dwg



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Houston
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REVISIONS	
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SEAL

PRELIMINARY

Overall Plan

Woodcrest FMP

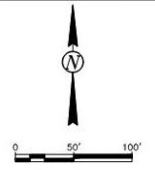
PROJECT **FM-19-C0**

THE CITY OF
Fargo
 FAR MORE

REVISED ALIGNMENT



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X TREE REMOVAL

HI Proj. No: 6059-0165
Houston
Engineering Inc.
Ph: 701.237.5065

ALL ELEVATIONS ARE BASED ON
THE U.S.S. VERTICAL DATUM OF 1985.
(UNLESS NOTED OTHERWISE)

REVISIONS	
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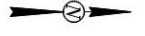
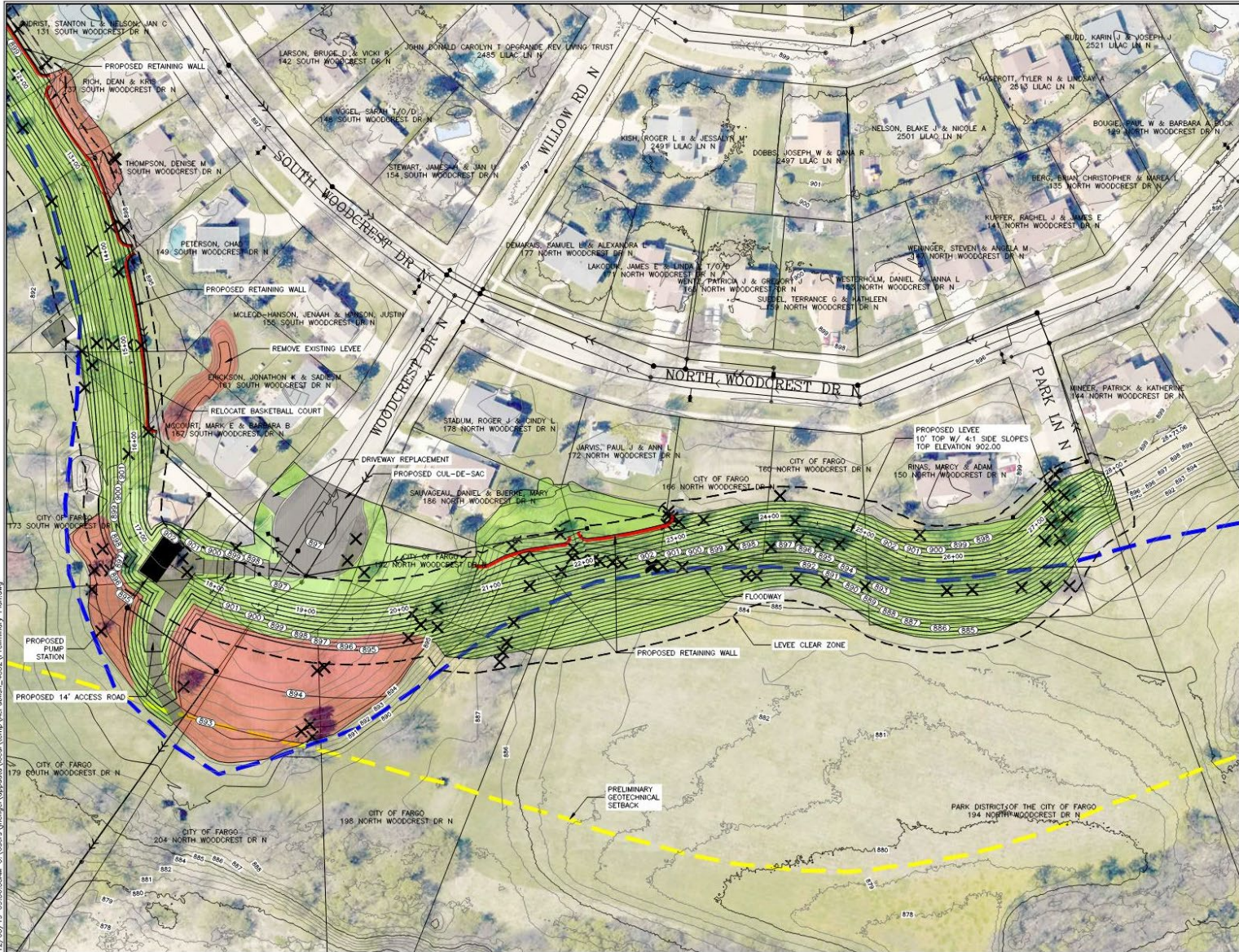
SEAL

PRELIMINARY

Plan View
Woodrest FMP
PROJECT FM-19-C0

THE CITY OF
Fargo
FAR MORE

REVISED ALIGNMENT



X TREE REMOVAL

gri Proj. No. 6059-0165
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SEAL

PRELIMINARY

Plan View
 Woodcrest FMP
 PROJECT **FM-19-C0**



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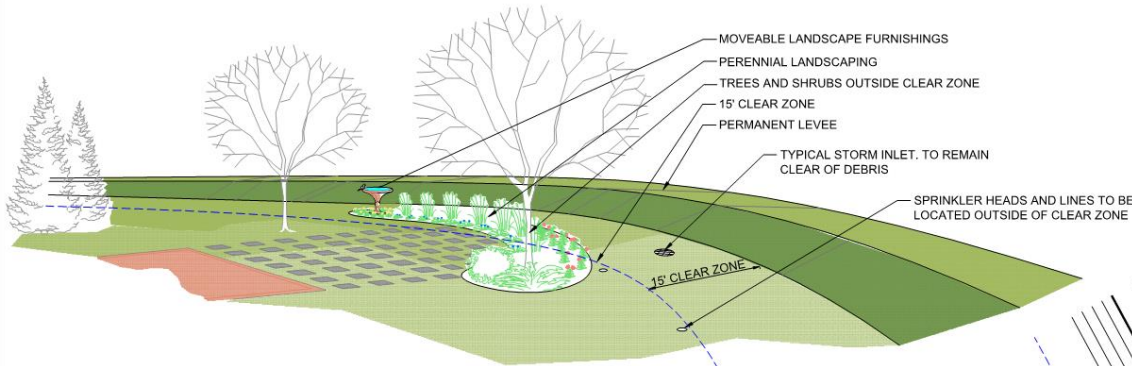
Levee Examples

STANDARD LEVEL EXAMPLE



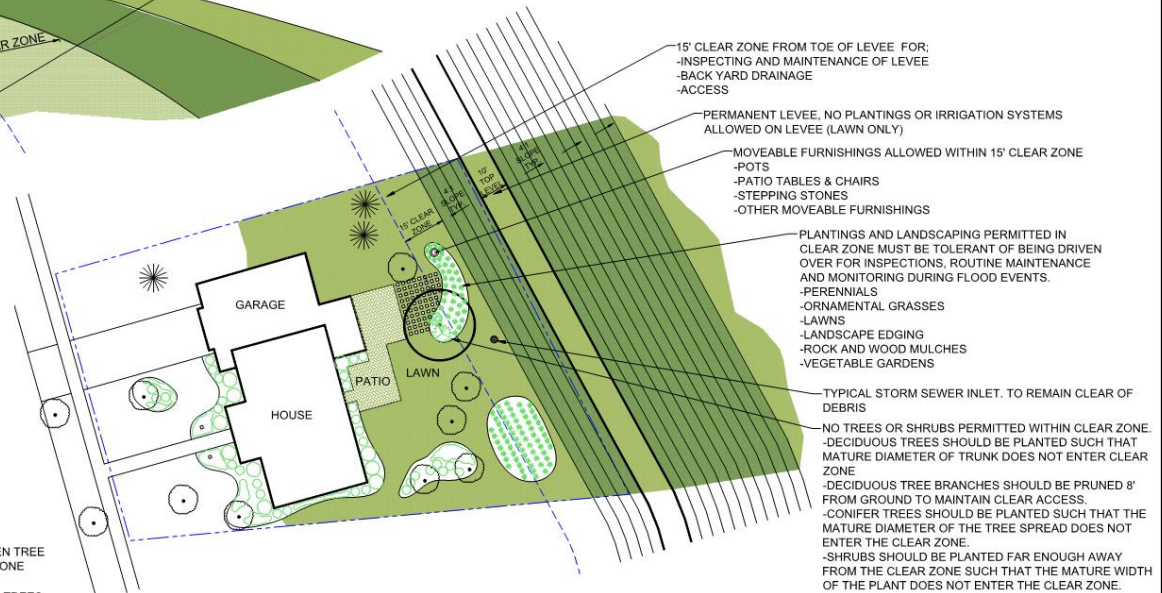
STANDARD LEVEL ALLOWABLE USE

CITY OF FARGO STANDARD LEVEL ALLOWABLE USE EXAMPLE

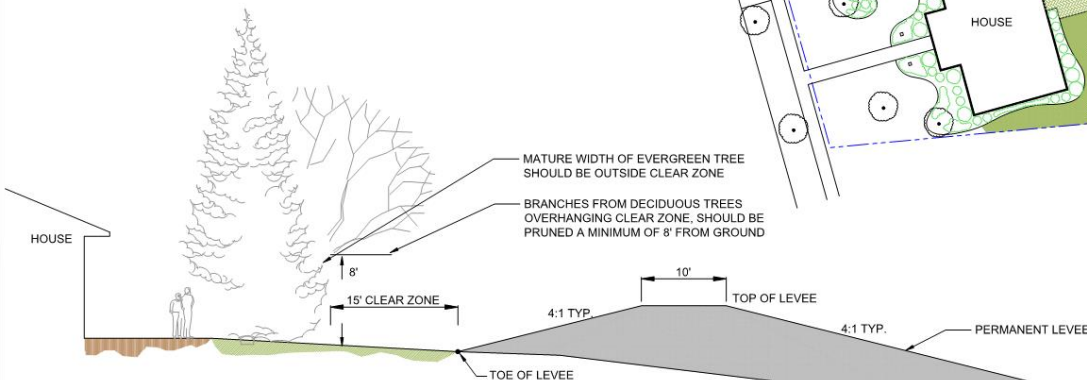


Typical Perspective

DRAINAGE NOTE:
DRAINAGE OF RUNOFF ADJACENT TO FLOODWALLS AND LEVEES IS IMPORTANT IN MAINTAINING THE INTEGRITY OF THE STRUCTURES. AS A RESULT, LANDSCAPING OR OTHER ADDED FEATURES SHOULD NOT CHANGE OR BLOCK THE DESIGN DRAINAGE GRADES AND FLOW PATHS.



Typical Plan View



Typical Section

Warning:
The primary purpose of the identified Clear Zone is to provide a reliable corridor of access along the levees and floodwalls. As a result, this corridor must be free of obstructions to assure adequate access by personnel and equipment for inspection, routine maintenance, monitoring, and flood-fighting. The property owner will be solely responsible for the repair and/or replacement of any feature placed within the identified clear zone area. The City of Fargo will not be responsible for costs associated with any damage to features within this area resulting from the required access.

MODULAR BLOCK WALL LEVEE EXAMPLE



Maintenance Process

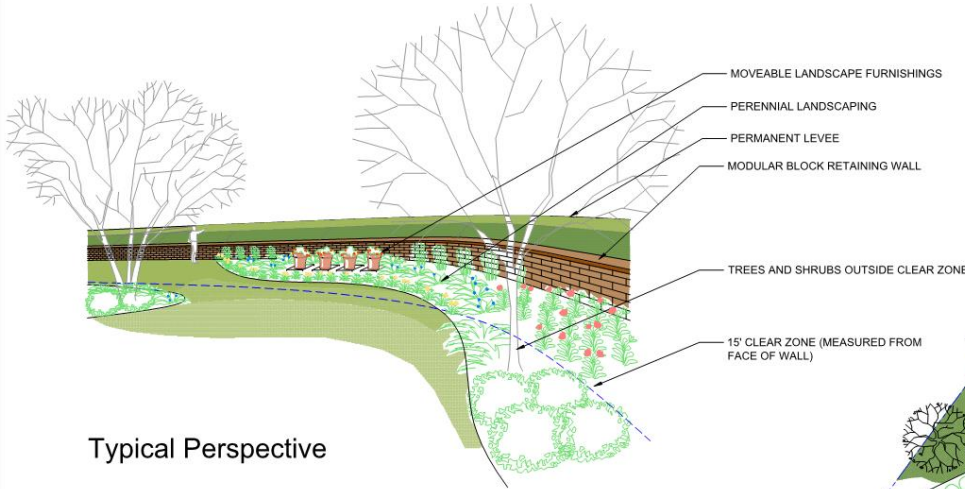
- City responsible to any significant structural integrity related issues...
- Landowner responsible to mow, regular maintenance, cosmetic repairs,...

MODULAR BLOCK WALL LEVEE ALLOWABLE USE

CITY OF FARGO



STANDARD COMBINATION LEVEE WITH MODULAR BLOCK WALL ALLOWABLE USE EXAMPLE

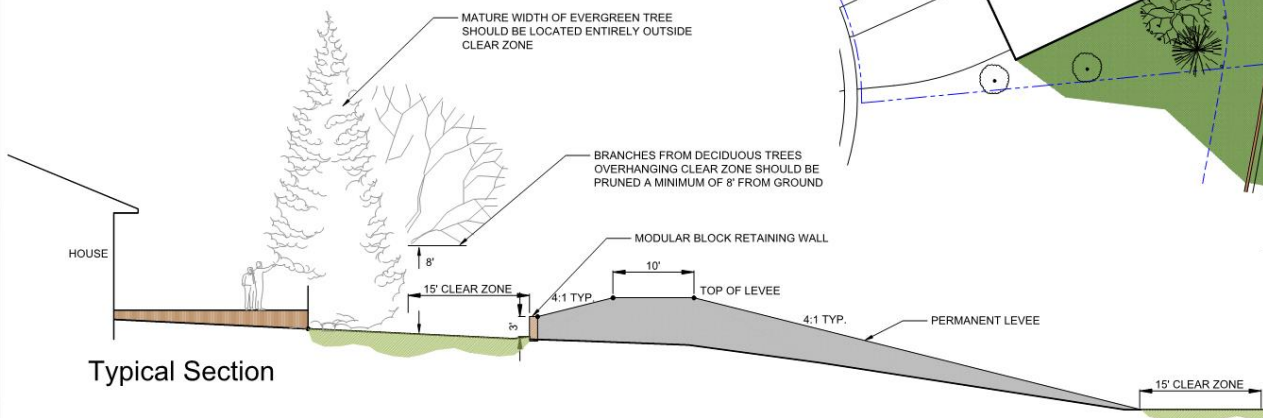


Typical Perspective

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Typical Plan View



Typical Section

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An aerial photograph of a residential neighborhood in winter. The scene is covered in snow, with snow piled up on roofs and along the edges of roads and yards. Several houses are visible, including a prominent two-story grey house in the lower center. A blue banner with the text "Path Forward" is overlaid across the middle of the image. The background shows more houses and trees, some with snow on their branches. The overall atmosphere is cold and wintry.

Path Forward

PROJECT TIMELINE

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- September – Soil Borings
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 - Public Comment Period (Until 1/6)
- Present to City Commission for Alignment Approval (January, 27 2020)
- Easement / Acquisition (Winter/Spring 2020)
- ND State Water Commission Review (Spring/Summer 2020)
- Bidding of Construction Project (Summer/Fall 2020)
- Anticipated Construction Begins (TBD)
- Substantial Construction Completion (TBD)
- Final Construction Completion (TBD)

Comment Form



Woodcrest Area Flood Risk Management Project

December 11, 2019 Informational Meeting

Landowner Project Opinion:

Yes No - I support the preliminary plan for providing improved flood risk management for the Woodcrest Area.

Additional Comments:

Please Return by January 6, 2020 to:

Randy Engelstad
Houston Engineering, Inc.
1401 21st Avenue North
Fargo, ND 58102
Phone: (701) 499-2087
Fax: (701) 237-5101
Rengelstad@Houstoneng.com

Name: _____

Address: _____

Date: _____

PROJECT TIMELINE

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An aerial photograph of a residential neighborhood in winter. The houses have snow-covered roofs, and the trees are mostly bare. In the foreground, there is a large body of water, possibly a lake or a wide river, with some snow-covered trees and bushes along the shore. The sky is overcast. A blue banner is overlaid on the image, containing the word "Questions" in a large, black, serif font.

Questions



MODULAR BLOCK WALL LEVEE EXAMPLE



MODULAR BLOCK WALL LEVEL MAINTENANCE



MODULAR BLOCK WALL LEVEE EXAMPLE



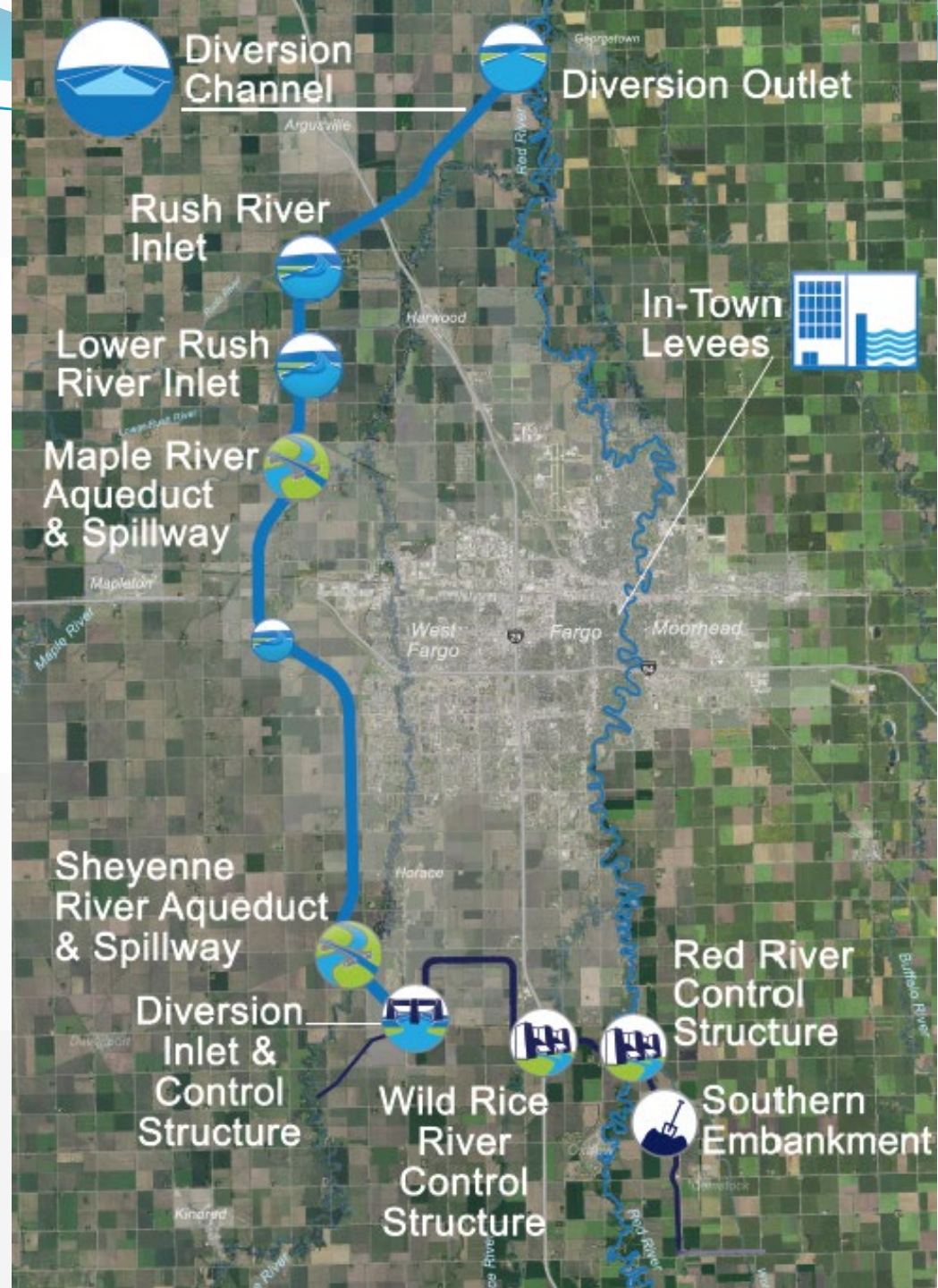




FM Diversion

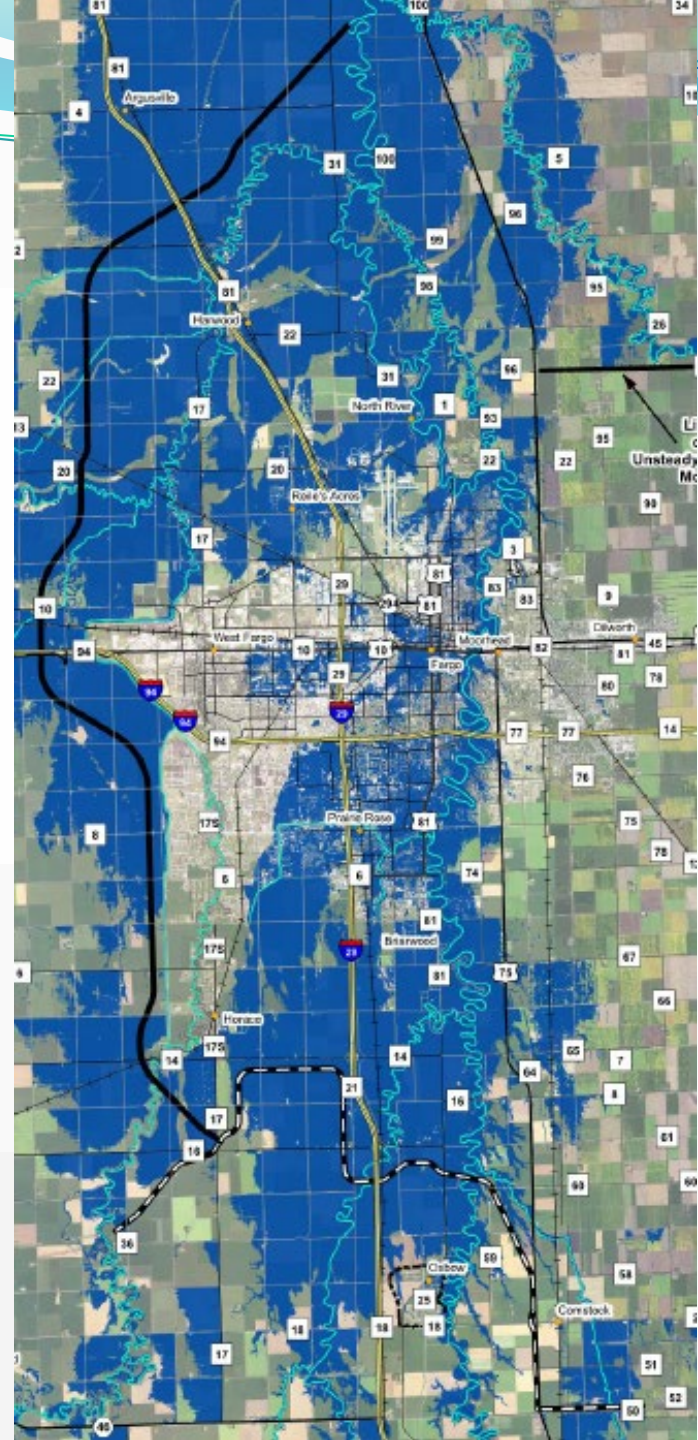
Diversion Project “Plan B”

- 100-year Flood Protection Minimum
 - Some features designed to PMF (Probable Maximum Flood) as required by State and Federal Dam Safety Requirements
- Diversion Channel
- Southern Embankment and Control Structures
- Temporary Staging of Flood Waters Upstream to Prevent Downstream Impacts
- In-town Levees
 - Additional levees needed to safely pass RS 37-feet during 100yr flood.



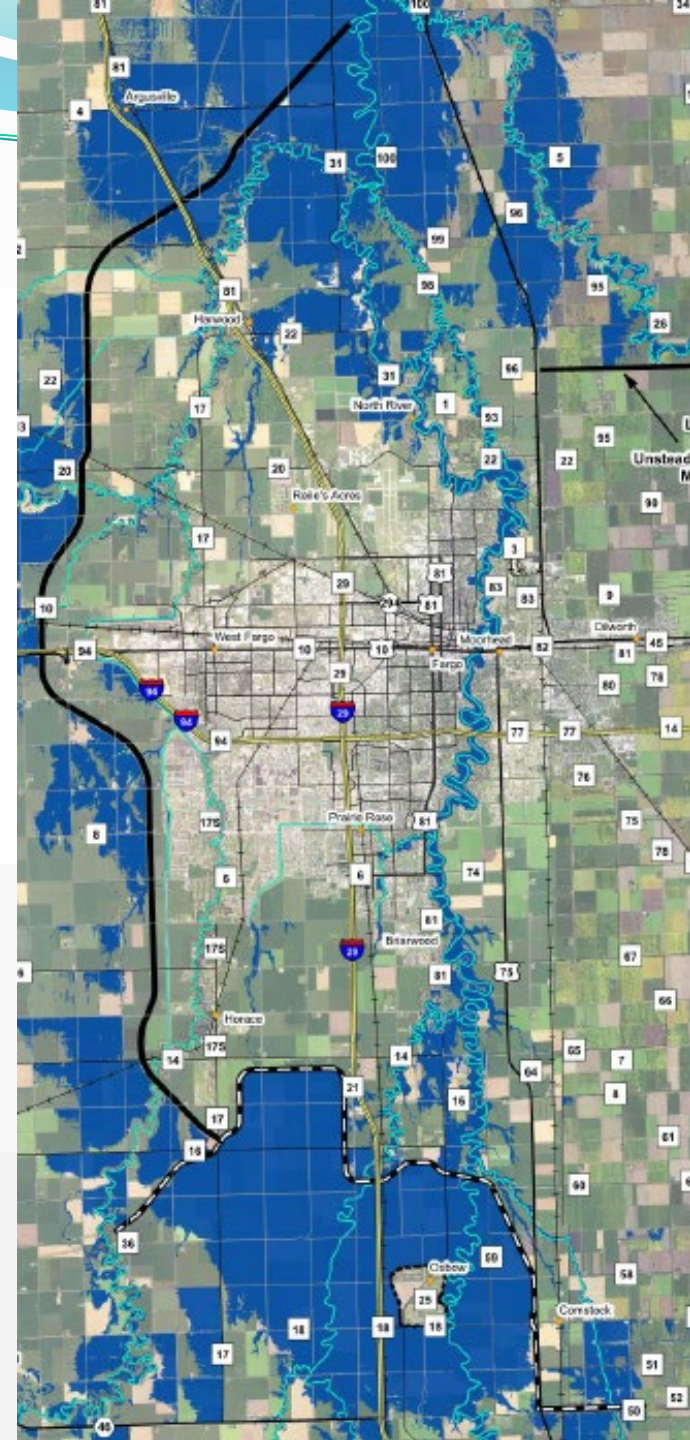
Existing Conditions

- 100-year floodplain shown in blue



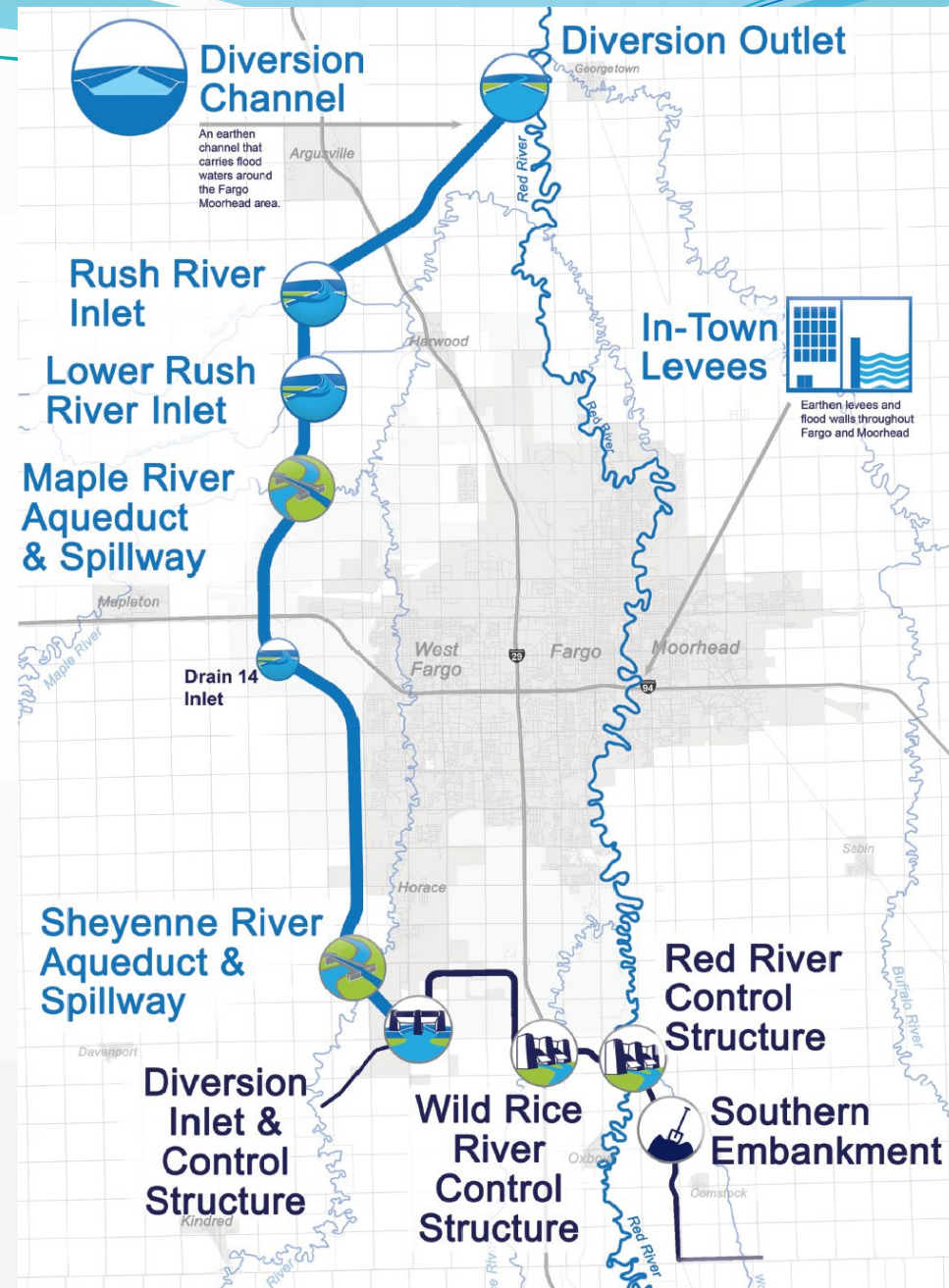
With Project

- 100-year floodplain with project shown in blue
- Project also gives the ability to defend against a 500-year flood
 - Would require 18-20 miles of temporary clay and sandbag levees



FM Diversion Project Status

- 2019-2021 Biennium Goals
 - Continue USACE construction and design (dark blue)
 - Continue Plan B In-Town flood protection
 - Acquire all lands for Diversion Channel by Spring-2020
 - Bid the P3 and lock-in the costs
 - Pursue and obtain long-term loans
 - Prepare funding request for 2021 legislative session

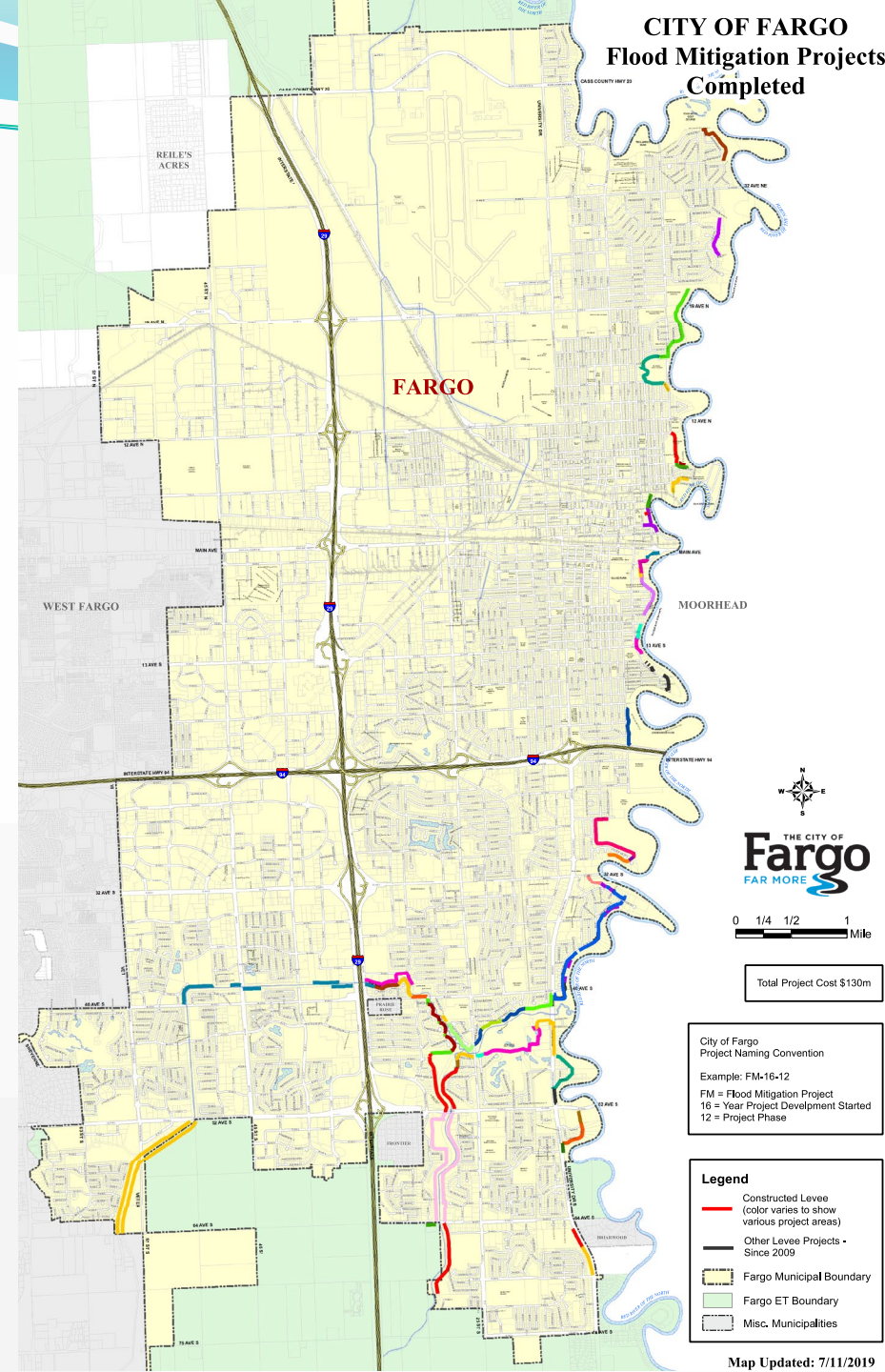


An aerial photograph of a residential neighborhood in winter. The houses are covered in snow, and the trees are mostly bare. In the foreground, there is a large pond with some snow on its banks and a few evergreen trees. A blue banner with white text is overlaid on the middle of the image.

In-Town Projects

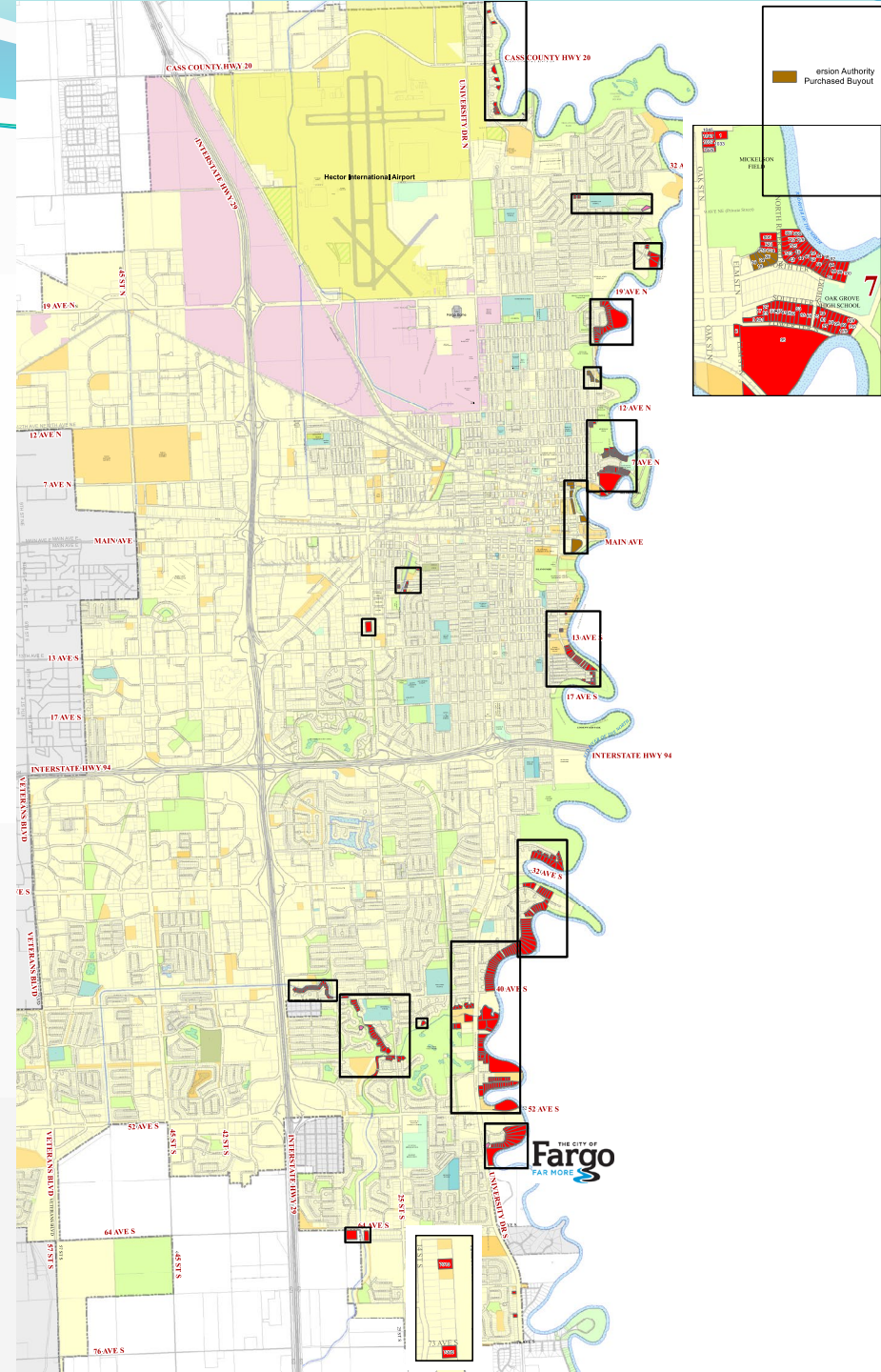
PROJECTS COMPLETED SINCE 2009

- Constructed over 21 miles
 - *47 miles of emergency levees constructed by the City in 2009
- Project Cost ≈ \$280 million
- Reduces required sandbags by approximately 5 million
 - Needed over 6 million in 2009
- All completed projects are built to proper elevations to accommodate Plan B's proposed 37' flow thru town



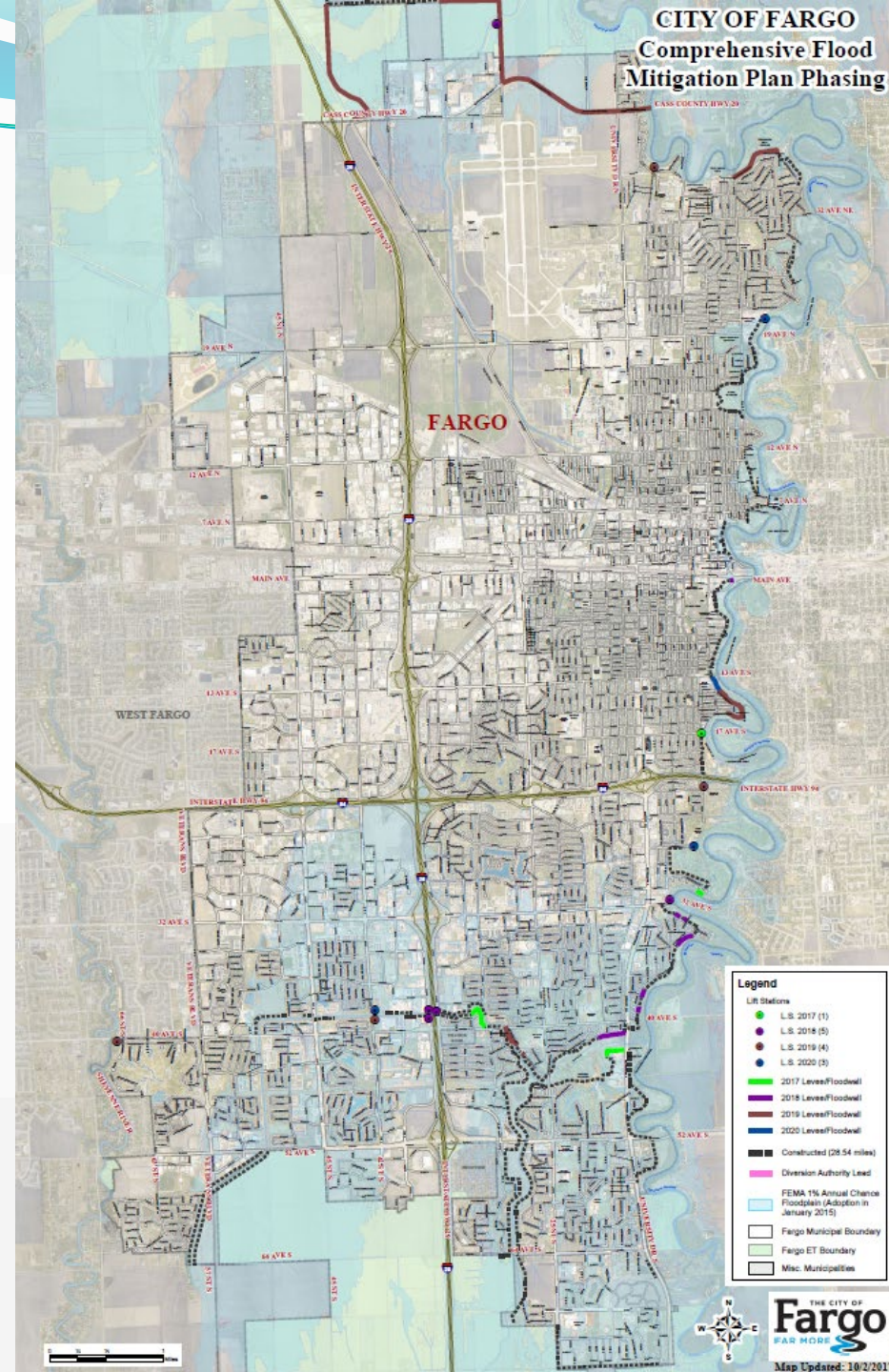
PROJECT ACQUISITIONS SINCE 2009

- 245 Properties Purchased
 - Over 380 since 1990
- At cost of over \$100 million
- Approximately 90 private property easement purchased



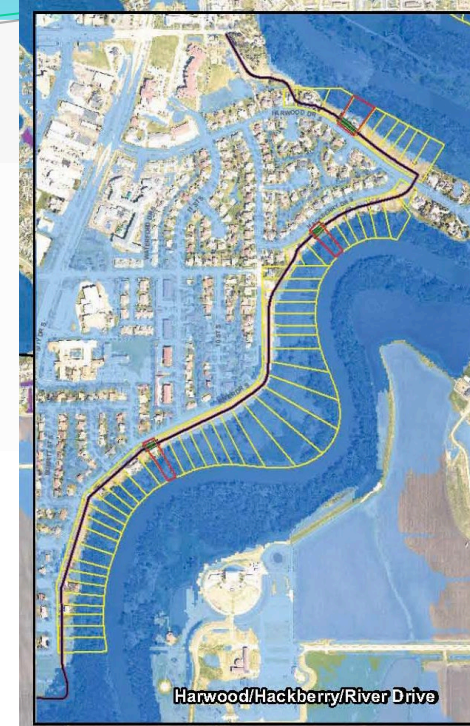
2019 PROJECTS UNDER CONSTRUCTION

- Four Projects
 - Rosewood Addition – Final Phase
 - Oakcreek & Copperfield Ct – Final Phase
 - Belmont Park – 2nd Phase
 - 2nd Street S & Main Ave – Final Phase
- Total Length ≈ 0.75 mile
- Total Construction Cost ≈ \$15.7M



REMAINING PROJECTS

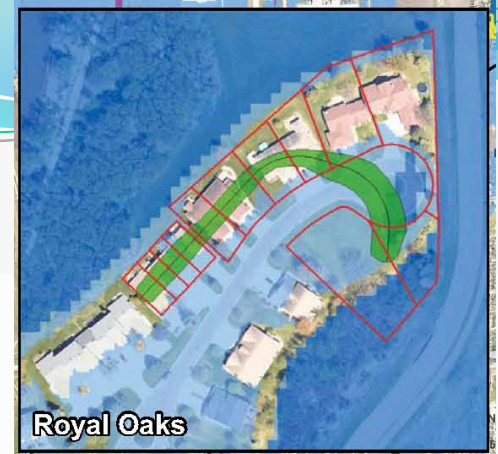
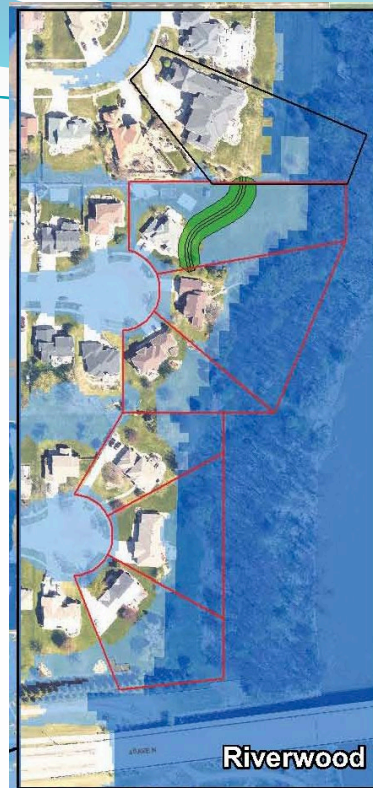
- 2016 Revised Comprehensive Plan Projects
 - Harwood, Hackberry & River Drives
 - 3 Acquisitions Remain
 - Levee Construction
 - Belmont Park
 - 3 Acquisitions Remain
 - Levee & Floodwall Construction
 - Water Intake Building Modifications
 - Drain 10/Airport Area
 - Levee Construction
 - Storm Sewer Lift Station Replacement
 - Storm Sewer Lift Stations Improvements



REMAINING PROJECTS

- Plan B Additional In-Town Projects

- Riverwood Addition
 - Potential Acquisitions
 - Levee Construction
 - Storm Sewer Lift Station Replacement
- Royal Oaks
 - Potential Acquisitions
 - Levee Construction
- Woodcrest
 - Potential Acquisitions
 - Levee Construction
 - Storm Sewer Lift Station Replacement
- Elm Circle
 - Potential Acquisitions
 - Levee Construction
- Oak Grove
 - Potential Acquisitions
 - Levee Construction
- Storm Sewer Lift Stations Improvements



PROJECT OVERVIEW



SOIL BORINGS









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Houston Engineering Inc.
 Ph: 701.237.5065

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REVISIONS		
NO.	DESCRIPTION	DATE
1		
2		
3		

SEAL

PRELIMINARY

Overall		
Woodcrest PMP		
PROJECT FM-19-C0		
DESIGN BY: RJC	CHECKED BY: RJC	
DRAWN BY: JKH	DATE: 8/21/2019	
	SECTION NO.	SHEET NO.
	3	1 of 3





ON-SITE ALIGNMENT REVIEW

