



***El Zagal Area Flood Risk Reduction  
El Zagal Bowl  
City of Fargo – Project FM-14-51***

***Public Informational Meeting  
August 13, 2014  
6:30 P.M.***



Consulting Engineering • Land Surveying

**North Dakota**

Minot

West Fargo

**Minnesota**

Fergus Falls

Wadena

# Project Location



# Overview

- **Flood Risk**
- **FEMA Mapping**
- **Past Floods**
- **Project Summary**
  - **Phase I**
  - **Phase II**
- **Path Forward/ Project Schedule**
- **Acquisition Process Overview**
- **Golf Course**
- **Questions**



# Defining the Risk

- **Current Floodplain**
  - 38.5 Feet River Gage (29,300 cfs)
  - 475 Impacted Structures
  - 19,700 Acres Impacted
- **Preliminary Floodplain**
  - 39.4 Feet River Gage (29,300 cfs)
  - Approx. 2,300 Impacted Structures
  - 27,600 Acres Impacted
- **Flood of Record**
  - 40.8 Feet River Gage
- **Future of the Floodplain**
  - USACE 41.1 River Gage (34,700 cfs)
  - Approx. 19,400 Impacted Structures
  - 36,430 Acres Impacted



**CITY OF FARGO**  
**100 Year Flood Plain Mapping**  
**Comparison -**  
**Current & Proposed**  
**August 2012**



Legend	
	Currently Adopted 100 Year Flood Plain
	Proposed 2008 LIDAR 100 Year Flood Plain
	Proposed 2011 LIDAR 100 Year Flood Plain
	FEMA 2012 Panel 100 Year Flood Plain
	Airport
	Railroad
	Interstate
	Water Feature
	Fargo Boundary Line
	Fargo Parcels
	Fargo ET Boundary Line
	Fargo 4 Mile ET Area
	Cass County Parcels
	Misc. Municipalities
	Misc. ET Area

100 Year Flood Plain Comparison - Parcels				
	Current	Proposed (2008)	Proposed (2011)	FEMA
Fargo Parcels	1,213	9,345	8,326	6,711
Fargo ET Parcels	764	541	1,007	1,011
Total	1,977	9,886	9,333	7,722

100 Year Flood Plain Comparison - Acres				
	Current	Proposed (2008)	Proposed (2011)	FEMA
Fargo Parcels	6,051	11,892	12,054	12,088
Fargo ET Parcels	13,898	12,775	15,512	15,523
Total	19,949	24,667	27,566	27,611

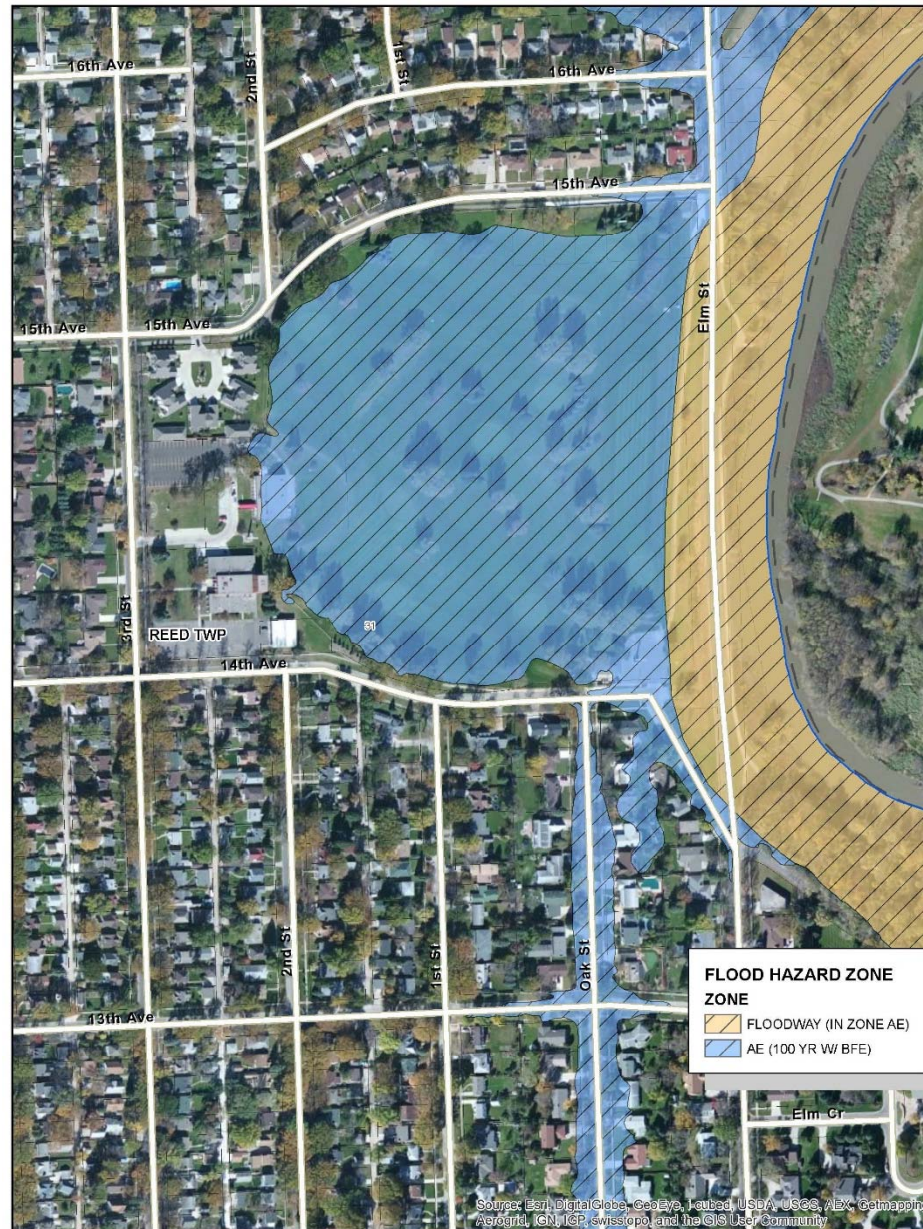
100 Year Flood Plain Comparison - Primary Structures				
	Current	Proposed (2008)	Proposed (2011)	FEMA
Fargo Structures	238	3,154	2,926	2,555
Fargo ET Structures	243	264	270	290
Total	481	3,418	3,196	2,845

100 Year Flood Plain Comparison - Primary Structures, 25 Feet Buffer				
	Current	Proposed (2008)	Proposed (2011)	FEMA
Fargo Structures	638	6,951	6,426	5,127
Fargo ET Structures	305	425	544	488
Total	943	7,376	6,970	5,615

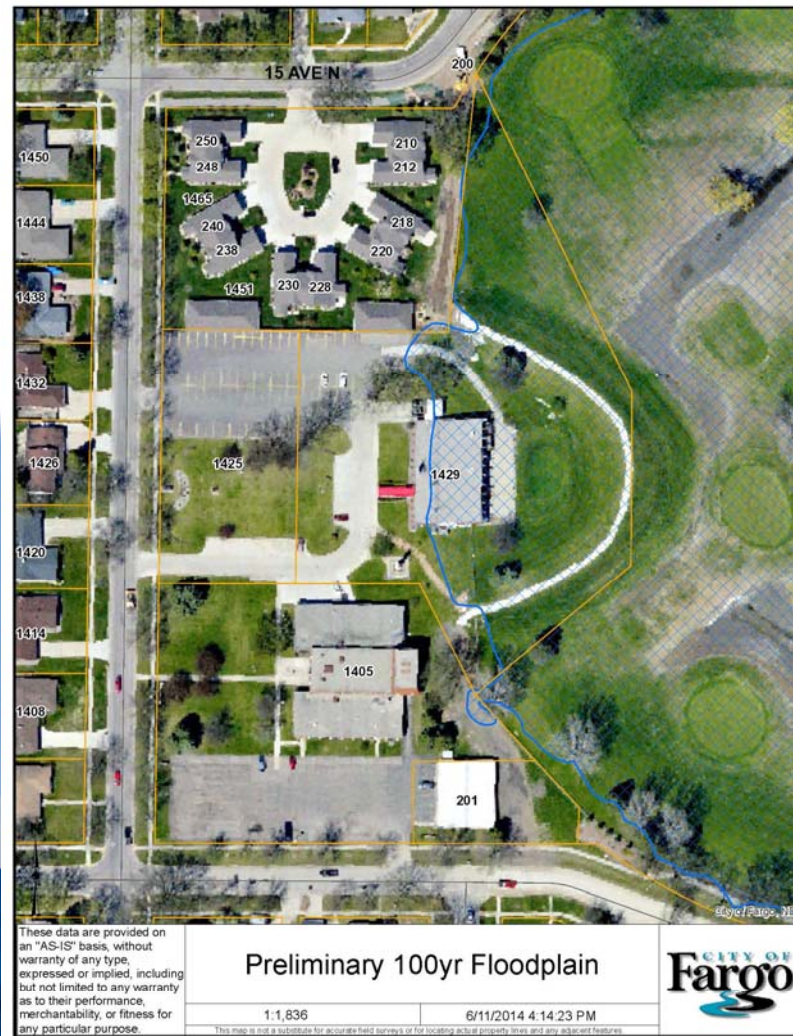
# Map Process

- Adoption January 16<sup>th</sup>, 2015
- Newly mapped properties will be mandated to carry flood insurance if the property owner has a federally backed mortgage

# Pending FEMA Floodplain Impacts



# Floodplain Impacts



# Floodplain Impacts



# Flood Insurance Changes

## ▶ Biggert Waters 2012

- Congress Passed in July 2012
- Reauthorized the NFIP for 5 years
- Make the NFIP Self Supporting
- Rate = Risk
- Financial Stability of Program overall...fast track

## ▶ Grimm Waters 2014 (AKA- Homeowner Flood Insurance Affordability Act of 2014 or HFIAA 14)

- Congress Passed in March 2014
- Repeals and modifies portions of BW 12
- Focus on affordability
- Financial Stability of Program overall...slower path
- Creates new subsidies
  - \$25 Primary Structures
  - \$250 Non-primary & business

BW-12

GW-14 or HFIAA-14

# Flood Insurance Changes

- ▶ Subsidized rates phased out
    - Non primary residence
    - Business
    - Severe repetitive loss
  - ▶ New Policies Full risk rates
    - After sale
    - Not insured prior to BW-12
    - Lapse
    - Refusal to mitigate
  - ▶ Grandfathering was eliminated.
    - Pre-Firm subsidies eliminated.
    - Newly mapped in properties rates increase 25% until full rates reached.
- ▶ Subsidized rates phased out
    - Non primary residence
    - Business
    - Severe repetitive loss
  - ▶ New Policies Full risk rates
    - Lapse
    - Refusal to mitigate
  - ▶ Refunds
  - ▶ Grandfathering reinstated
    - Exact extent unknown at this time

BW-12

GW-14 or HFIAA-14

# Red River Flooding History

## 💧 **Red River Flood Stage = 18 feet on the Fargo gage at 13th Ave. S.**

Exceeded in 50 of the past 111 years

Exceeded every year from 1993 through 2011, and again in 2013 and 2014.

## 💧 **Catastrophic damages have been prevented by emergency measures**

8 of the 16 “major” floods on record have occurred since 2000

## 💧 **2009 was the flood of record**

Stage of 40.8 feet

Emergency measures cost approximately \$70M

# Past Floods: 2009

Elm Street & 14th Avenue N.

Red River Crest (at Fargo): 40.83'



## Past Floods: 2009 Cont.

Temporary sandbag levee  
along El Zagal Shrine



## Past Floods: 2009 Cont.

Temporary earthen levee along  
14th Avenue N



# Past Floods: 2010

Elm Street at 14th Ave. N.

Red River Crest (at Fargo): 36.99'



**March 18, 2010:** By about 5:00 pm, waters begin to spill over the dike at El Zagal Golf Course.

## Past Floods: 2010



**March 21, 2010:** Elm Street at 15th Ave. N at flood crest. Flood barricades of the new flood wall (completed 2009) are working effectively. Red River stage (at Fargo): 36.99'.

# Past Floods: 2011

Elm Street & 14th Avenue N.

Red River Crest (at Fargo): 38.81'



**April 4, 2011:** Elm Street in Fargo is flooded, with the floodwall (far distance) now closed. Red River stage (at Fargo): 25.7'.

**April 6, 2011:** Workers construct a temporary clay dike at 14th Ave. N and Elm St., Fargo, ND. Red River stage (at Fargo): 32.5'



# Past Floods: 2011

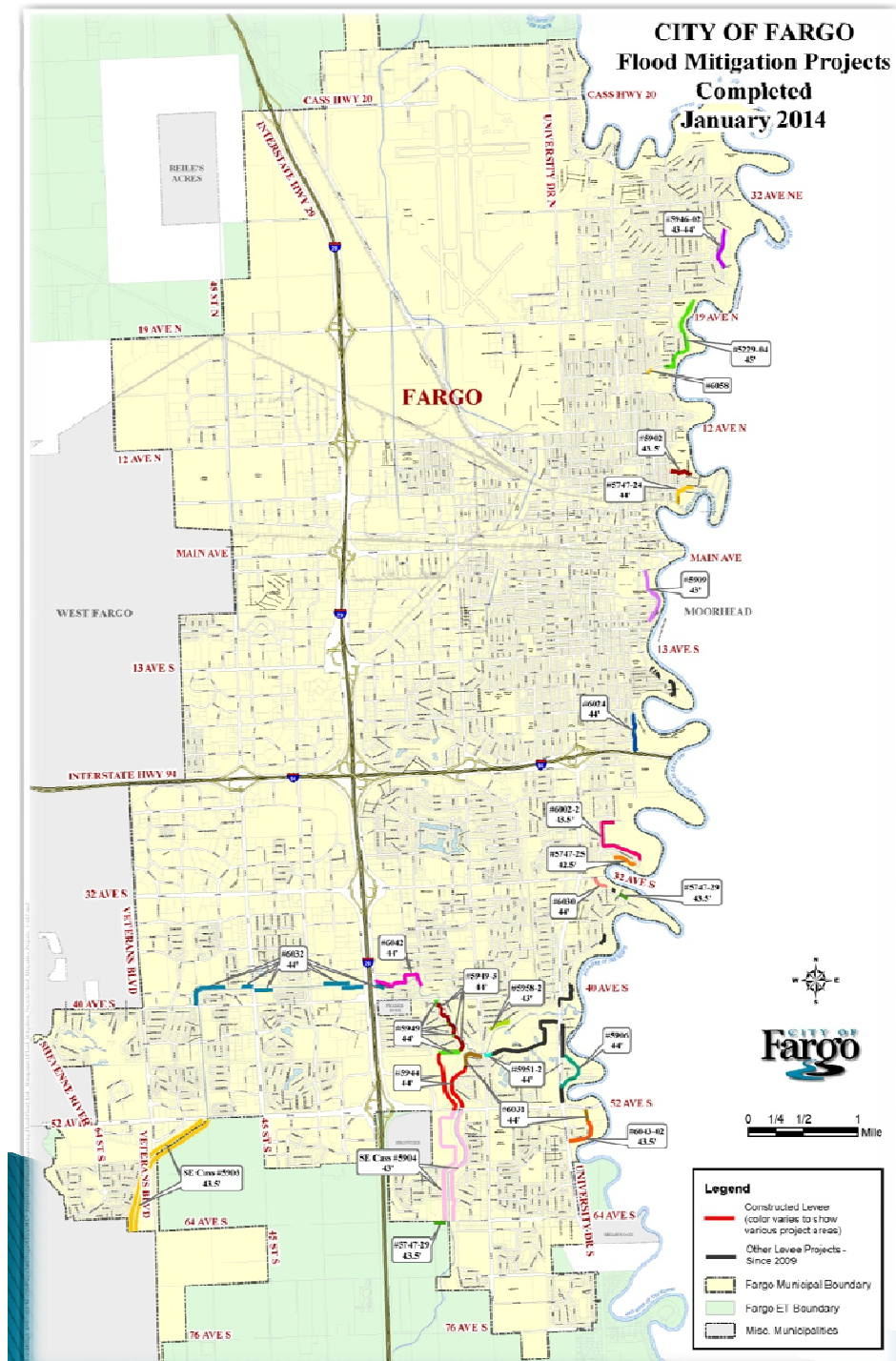


**April 7, 2011:** At sunrise, water spills over the dike at El Zagal Golf Course in Fargo, ND. Red River stage (at Fargo): 34.9'.



**April 6, 2011:** A double-barrier of Hesco dikes lines the west side of El Zagal Golf Course at 14th Ave. N in Fargo, ND. Red River stage (at Fargo): 32.5'.



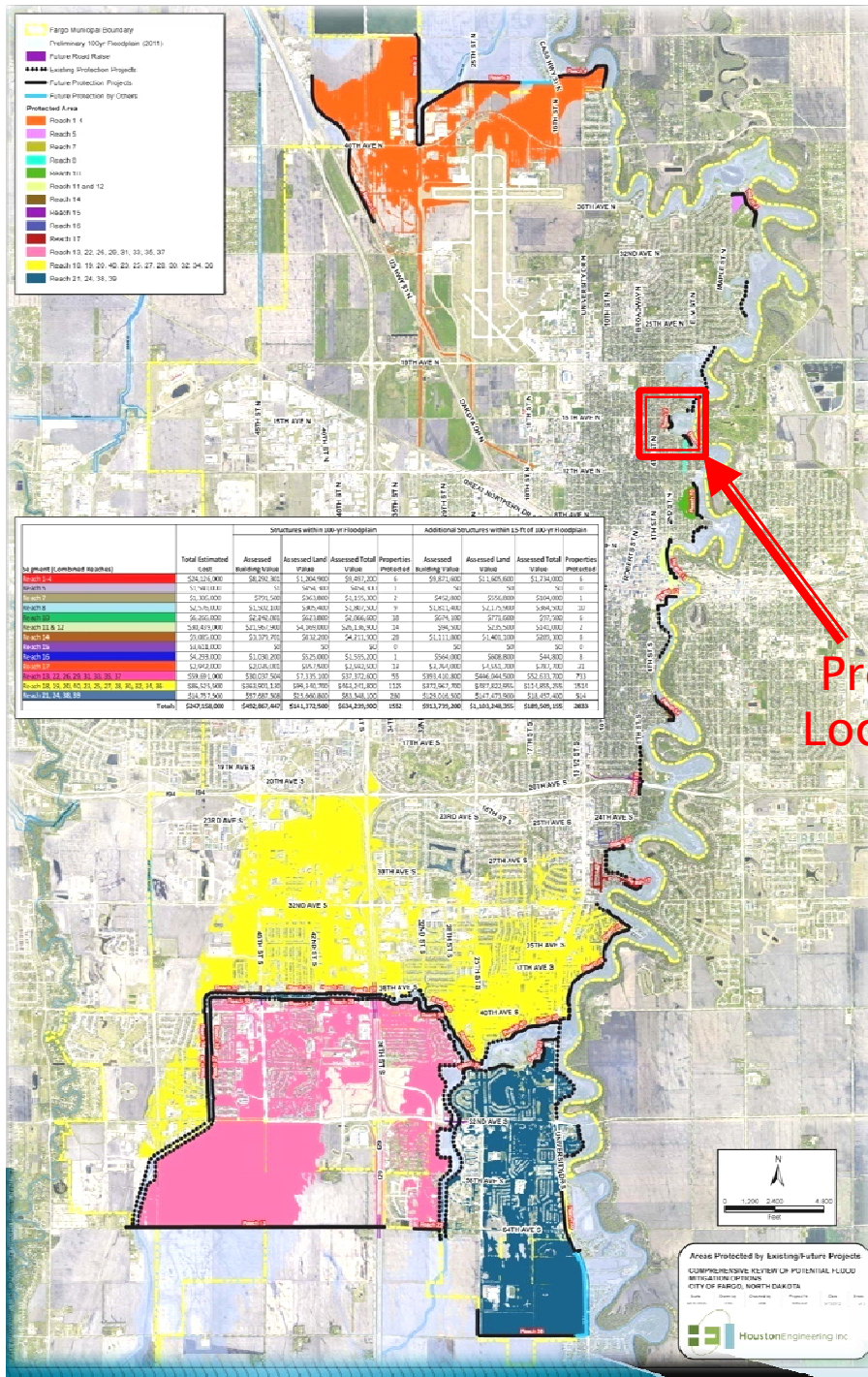


# Fargo's Progress to Date

- ▶ Approximately 14 Miles of Improvements Totaling Over \$57M Since 2009
- ▶ Over 300 Buyouts Completed
- ▶ Reduce required sandbags by approximately 3.4 million

# Fargo's Comprehensive Plan

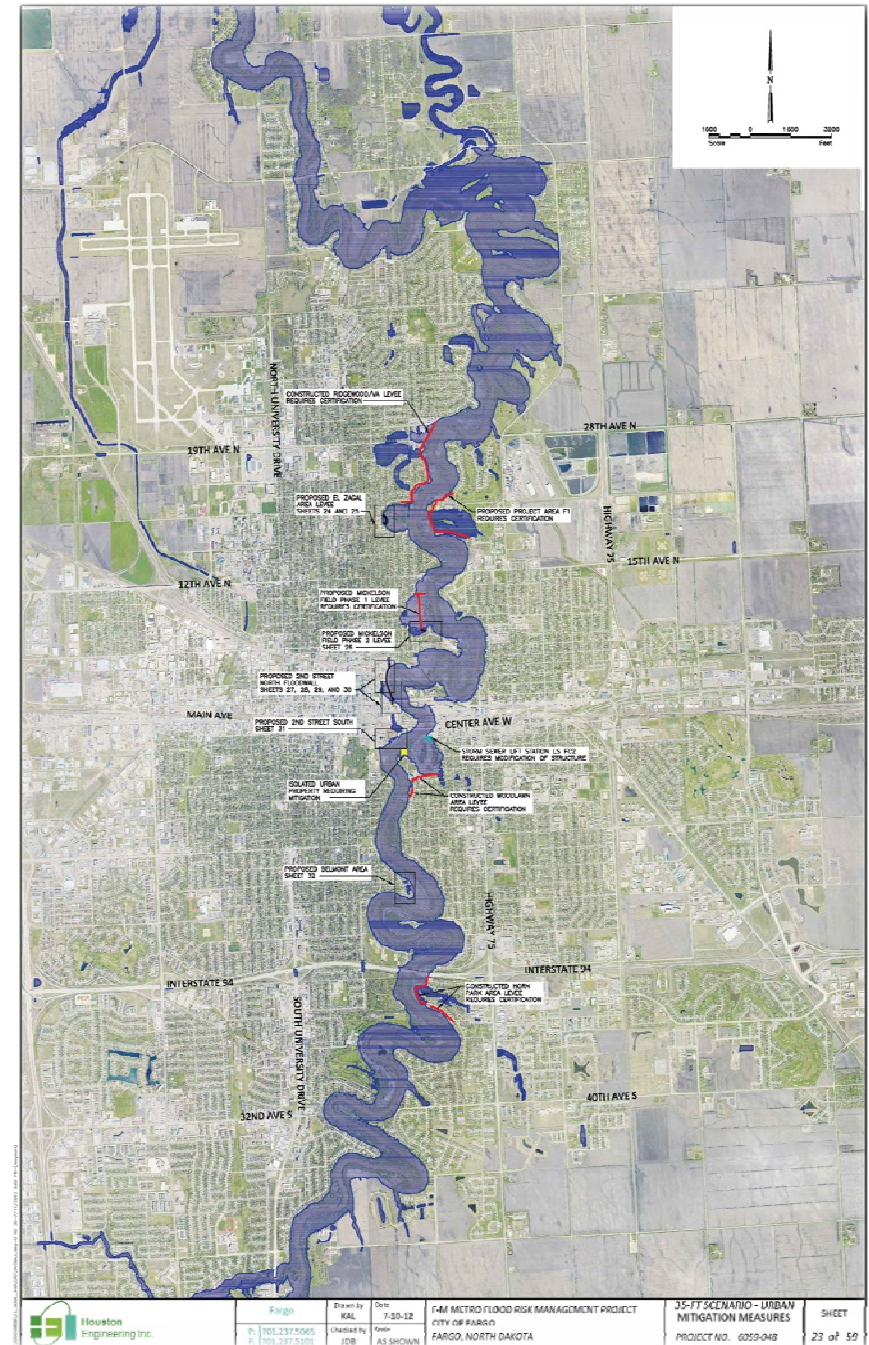
- ▶ Identified an Estimated \$247 M in Projects
- ▶ Would require
  - 197 residential buyouts
  - 5 commercial/Industrial buyouts
- ▶ Yellow area has approx 1,500 structures in floodplain
- ▶ Funding limitations require prioritization
- ▶ Outstanding Issues
  - With Comprehensive Plan completed would still need:
    - 7.6 miles of emergency clay levees
    - 3.2 miles of sandbag levees



## In-town/Diversion Coincident Reaches

- Existing Levees Requiring Certification (5)
  - 3-Moorhead 2-Fargo\*\*
- El Zagal Area Protection
- Mickelson Area Protection
- 2<sup>nd</sup> St. Protection
- Belmont Area Protection
- Individual Property Mitigation/Acquisitions

**\*\* Also must maintain certification of 4<sup>th</sup> Street Levee in Fargo**



[illegible]

- Diversion Compatible
  - 35' plus freeboard

# Project Features, Goals & Considerations:

- Phase 1
  - 39.5' Plus Freeboard
  - Stability of Earthen Levee
  - Limit impacts to private property, trees, & course
  - Golf Course Reconstruction (by Park District)
    - Golf course worked with project to limit impacts to private property and homes
- Phase 2
  - 39.5' Plus Freeboard
  - Stability of Earthen Levee
  - Residential Acquisitions – Minimize
  - Limit impacts to private property and trees
  - 14<sup>th</sup> Ave Permanent Closure
  - Elm Street Temporary Closure

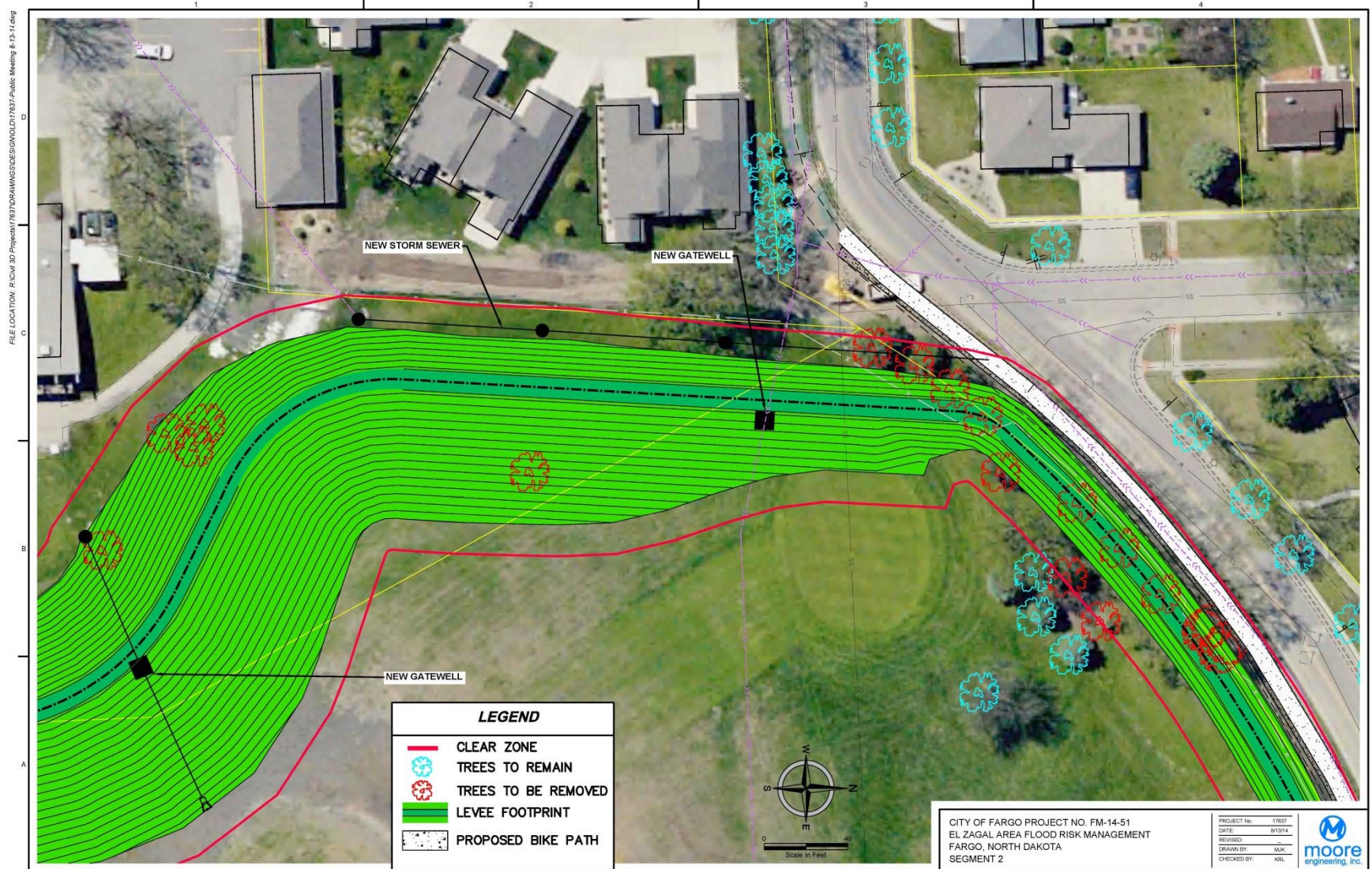
# Project Features: Project Overview



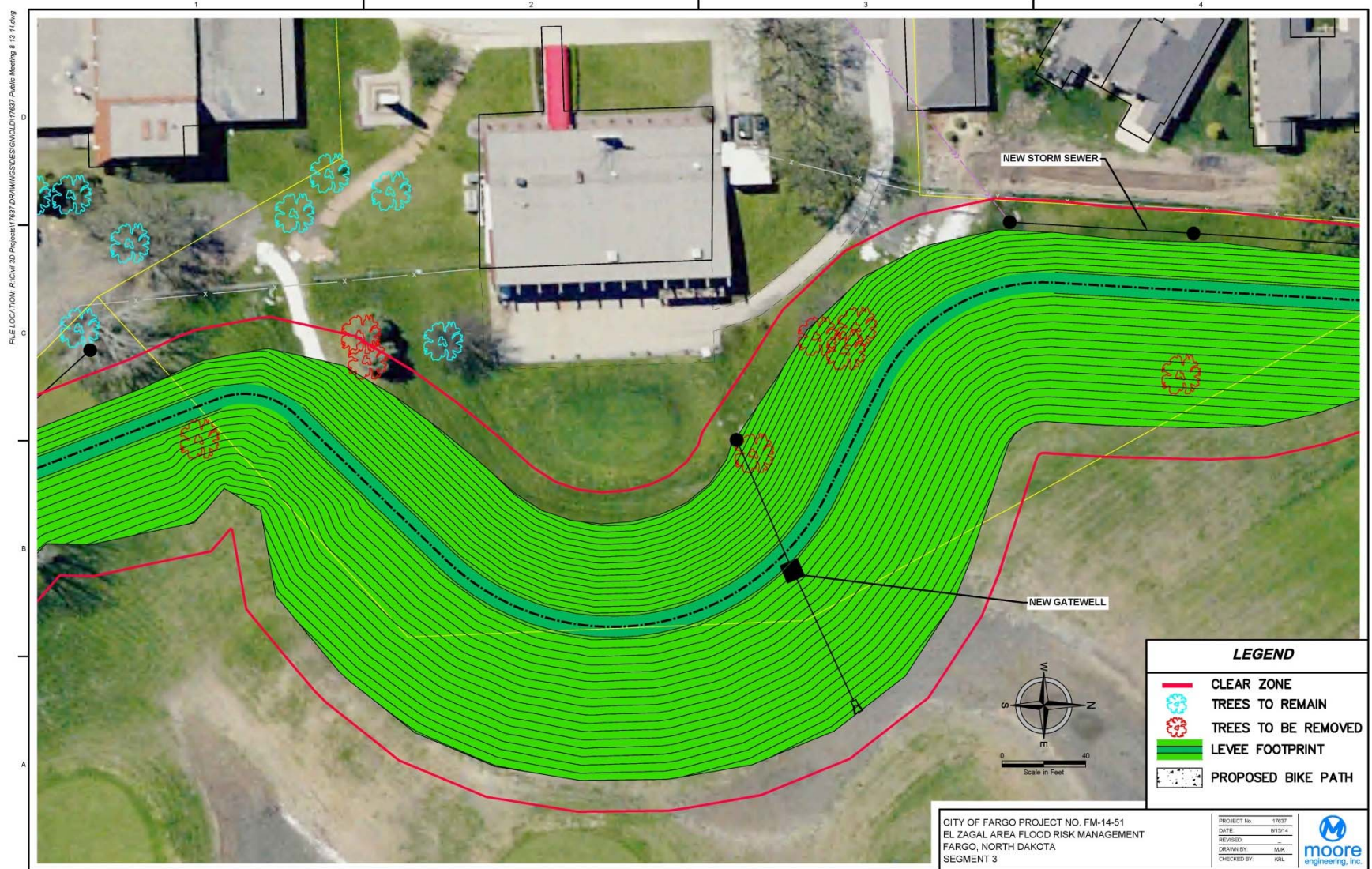
# Project Features: Phase I



# Project Features: Phase I Cont.



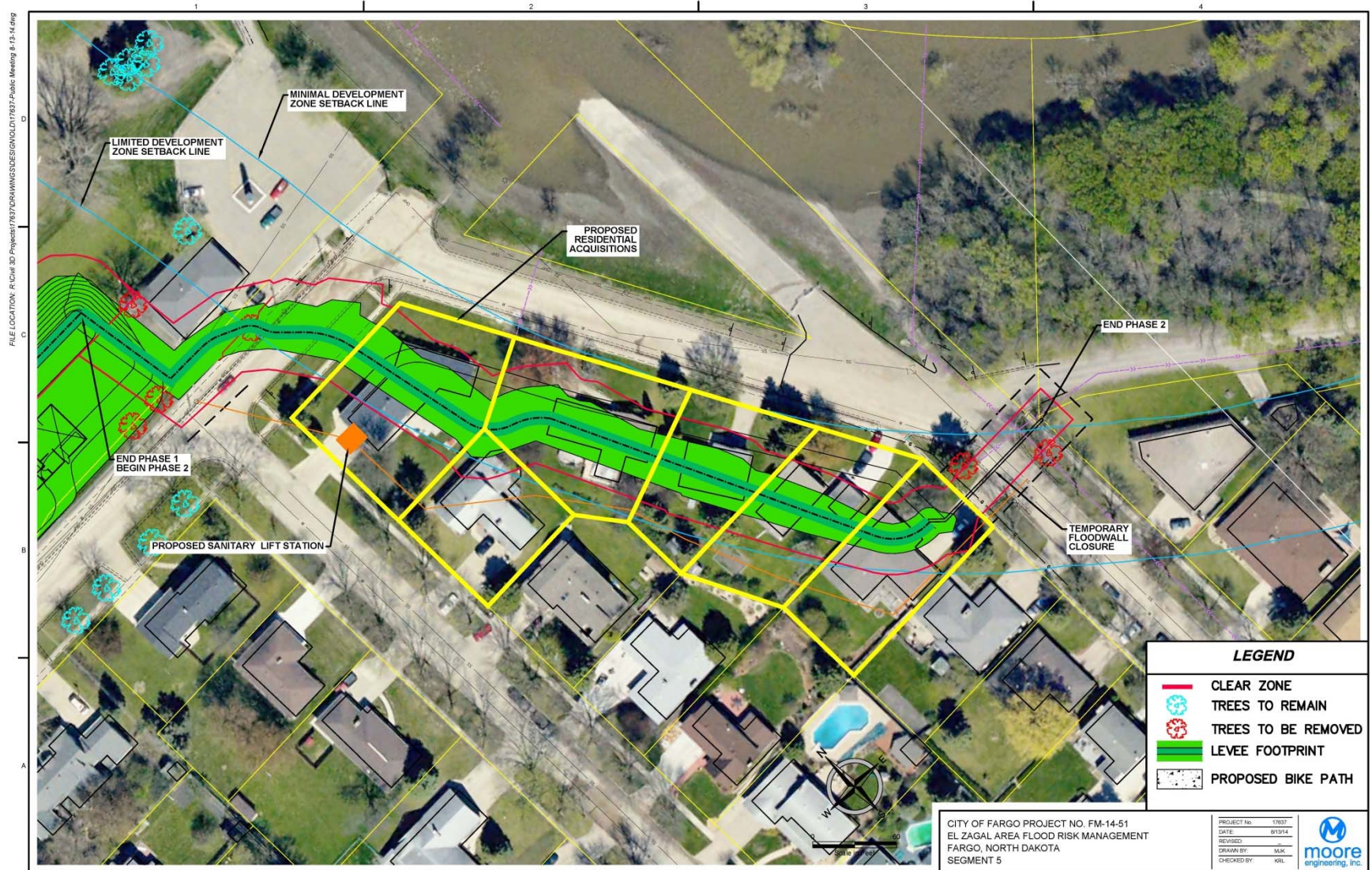
# Project Features: Phase I Cont.



# Project Features: Phase I Cont.



# Project Features: Phase II

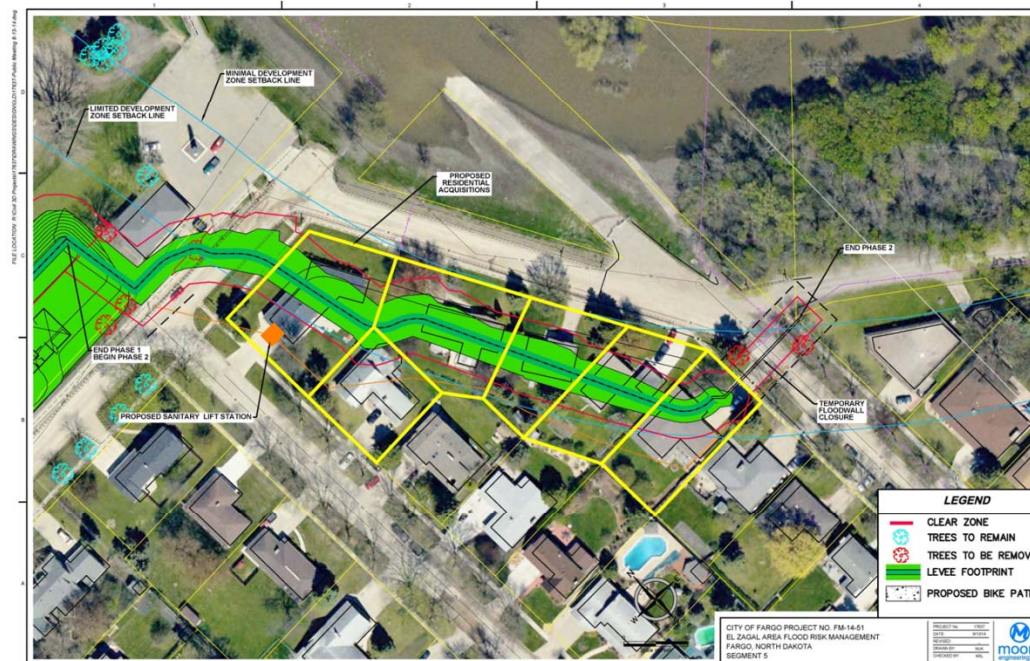


# Path Forward / Schedule

- June / August 2014 – Public Meetings
- August 27, 2014 – Bid Phase I
- Fall 2014/Spring 2015 – Construct Phase 1
- 2014 – Phase II Residential Acquisition
- 2015 Construction Season – Bid & Construct Phase II

# Acquisition Process Overview

- Acquisitions will follow Federal Guidelines
  - Appraisals will be completed
  - Relocation Assistance
- Diversion Authority will complete the acquisitions



# Golf Course

- Course will still flood
  - Storm sewer improvements will allow for a quicker recovery
- Updated Features
  - Course will be reconstructed
    - Full Par 3 Course
  - Updated Pro Shop
- Cost Savings vs Floodwall
- Park District plans to start construction fall of 2014
  - Course will be closed 2015 to allow for vegetation establishment

# Golf Course





Questions?



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