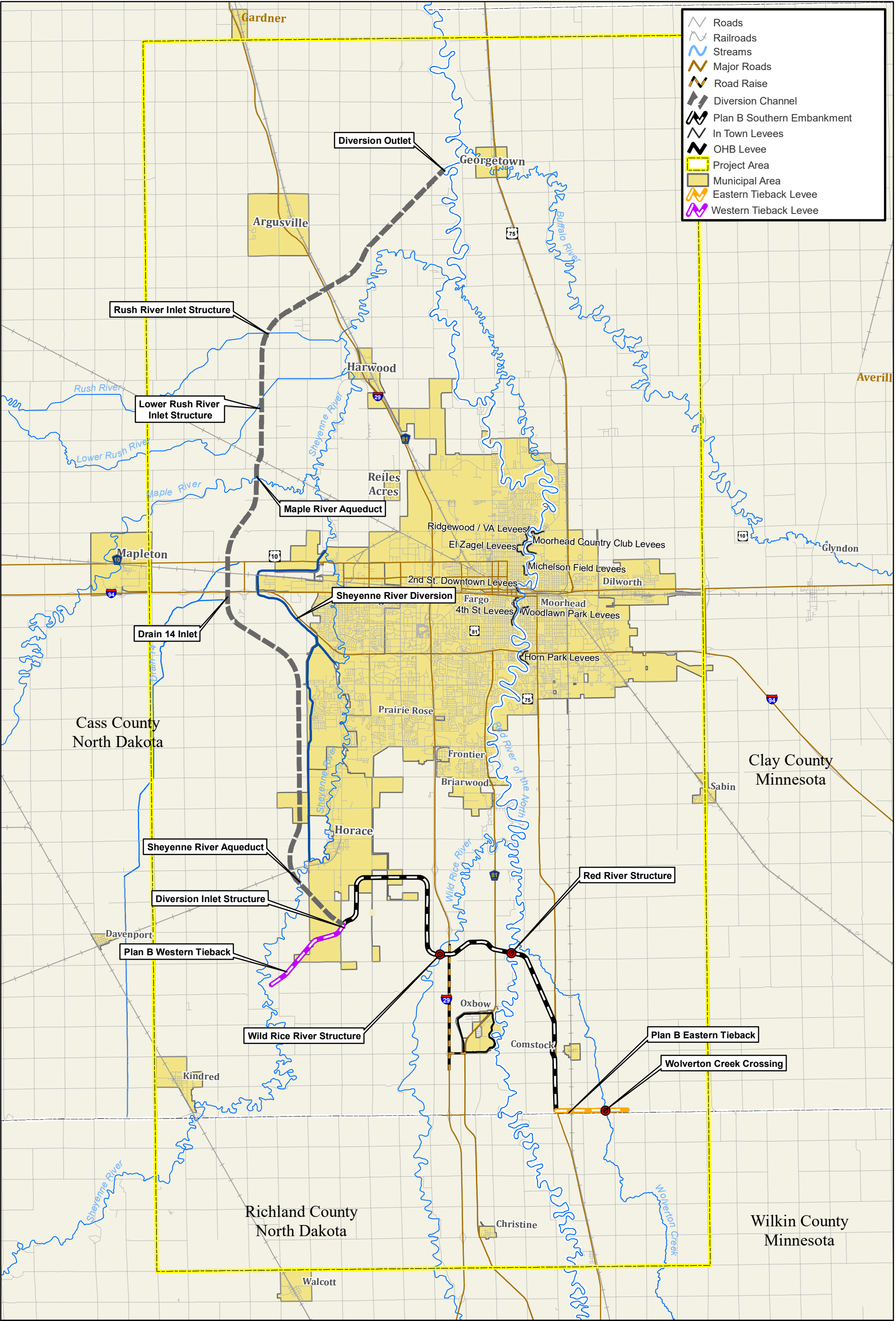




**Plan B Project Components
Fargo Moorhead Metro Area Flood
Risk Management - August, 2018**

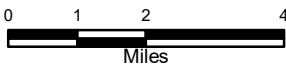
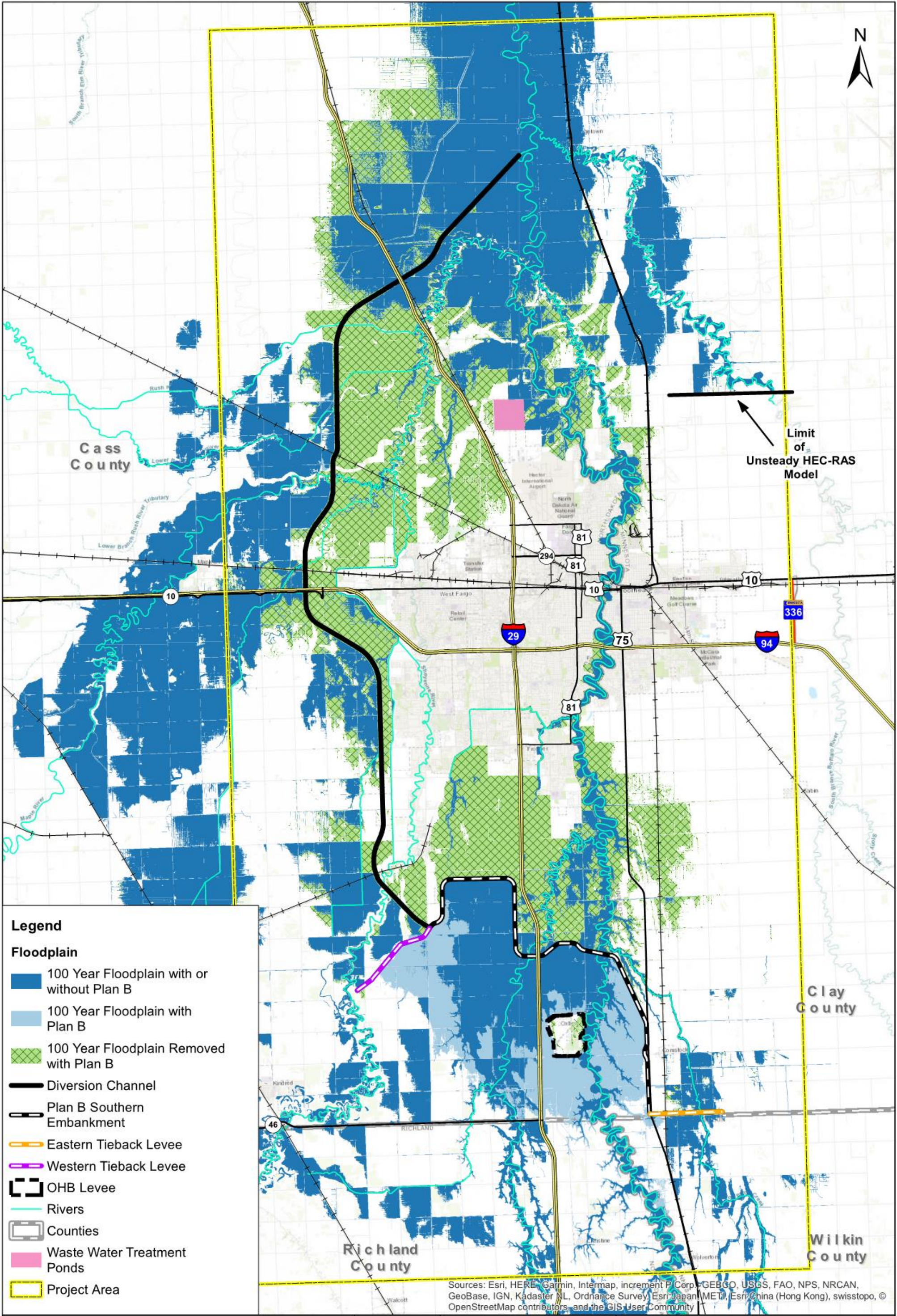


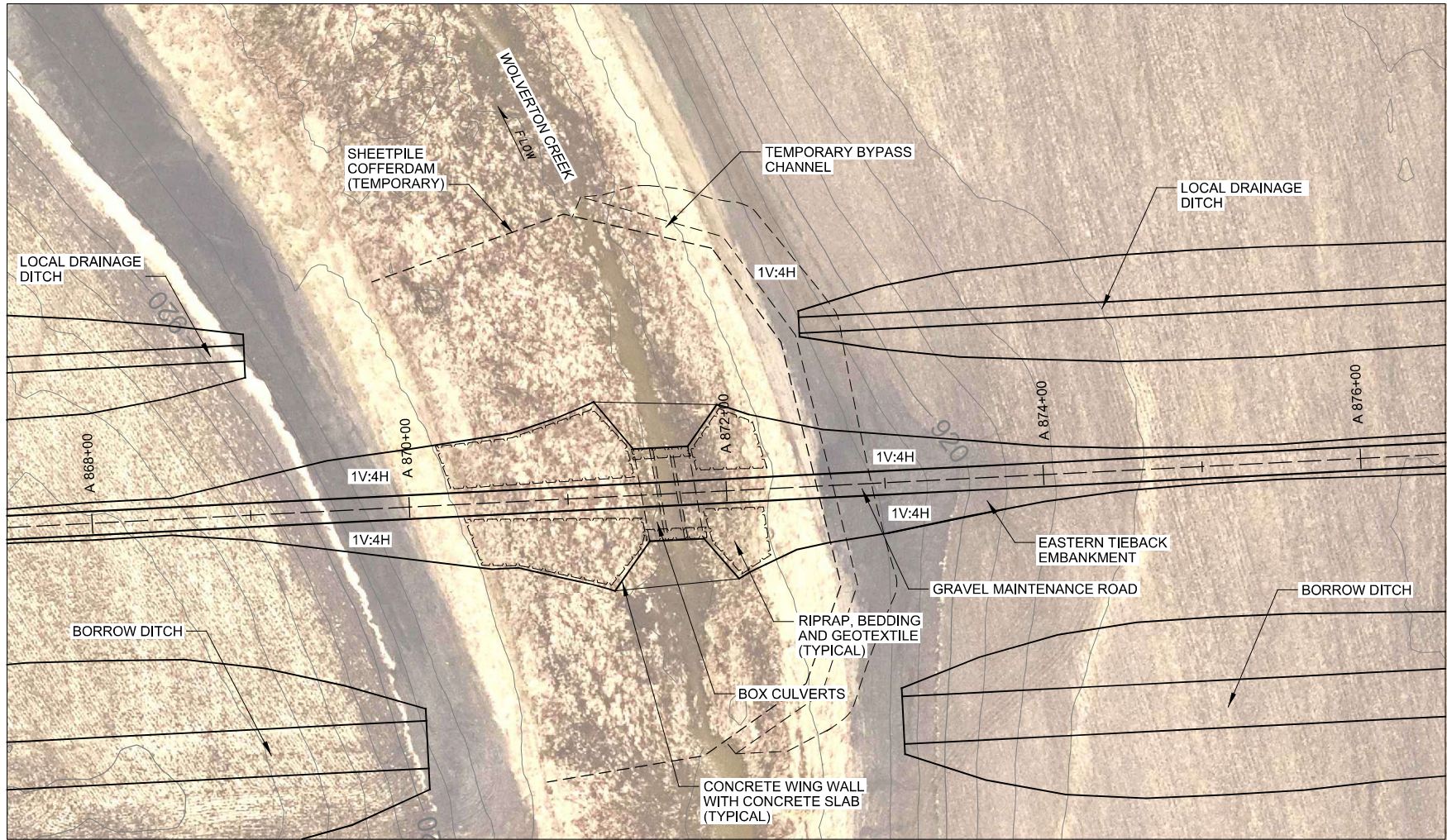
Figure 1



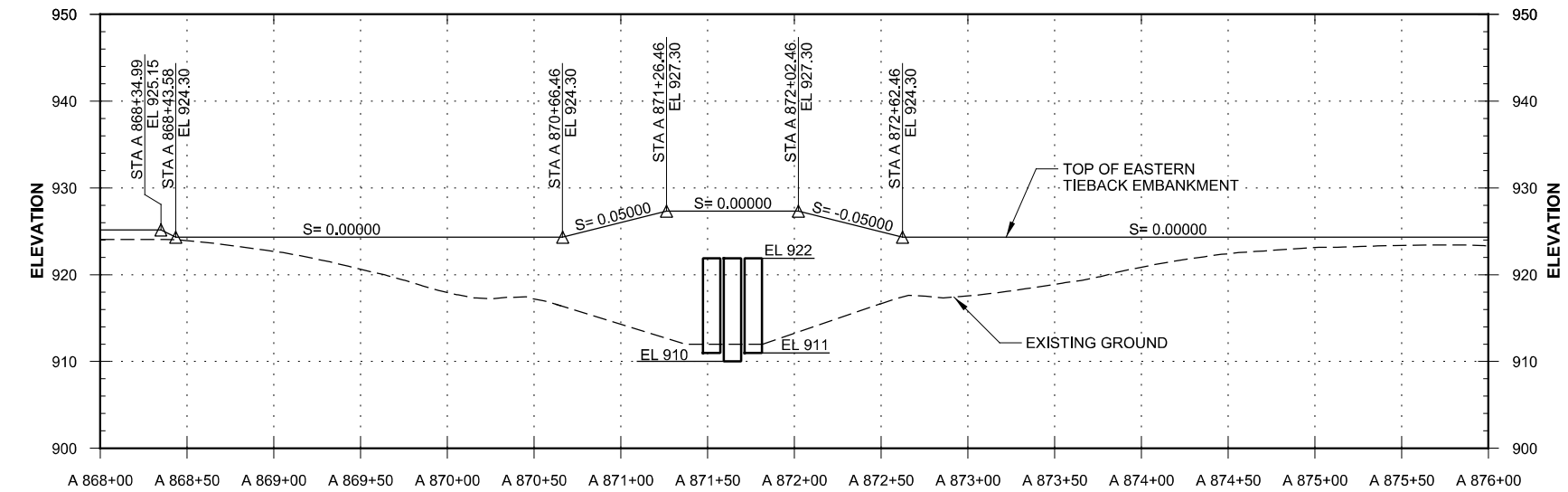
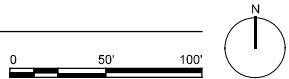
**With/Without Plan B 100 Year Event
With Emergency Measures**



Figure 2



B1 PRELIMINARY PLAN
EASTERN TIEBACK EMBANKMENT CROSSING
AT WOLVERTON CREEK
SCALE: 1"=50'



A1 PRELIMINARY PROFILE
EASTERN TIEBACK EMBANKMENT CROSSING
AT WOLVERTON CREEK

PRELIMINARY
NOT FOR CONSTRUCTION

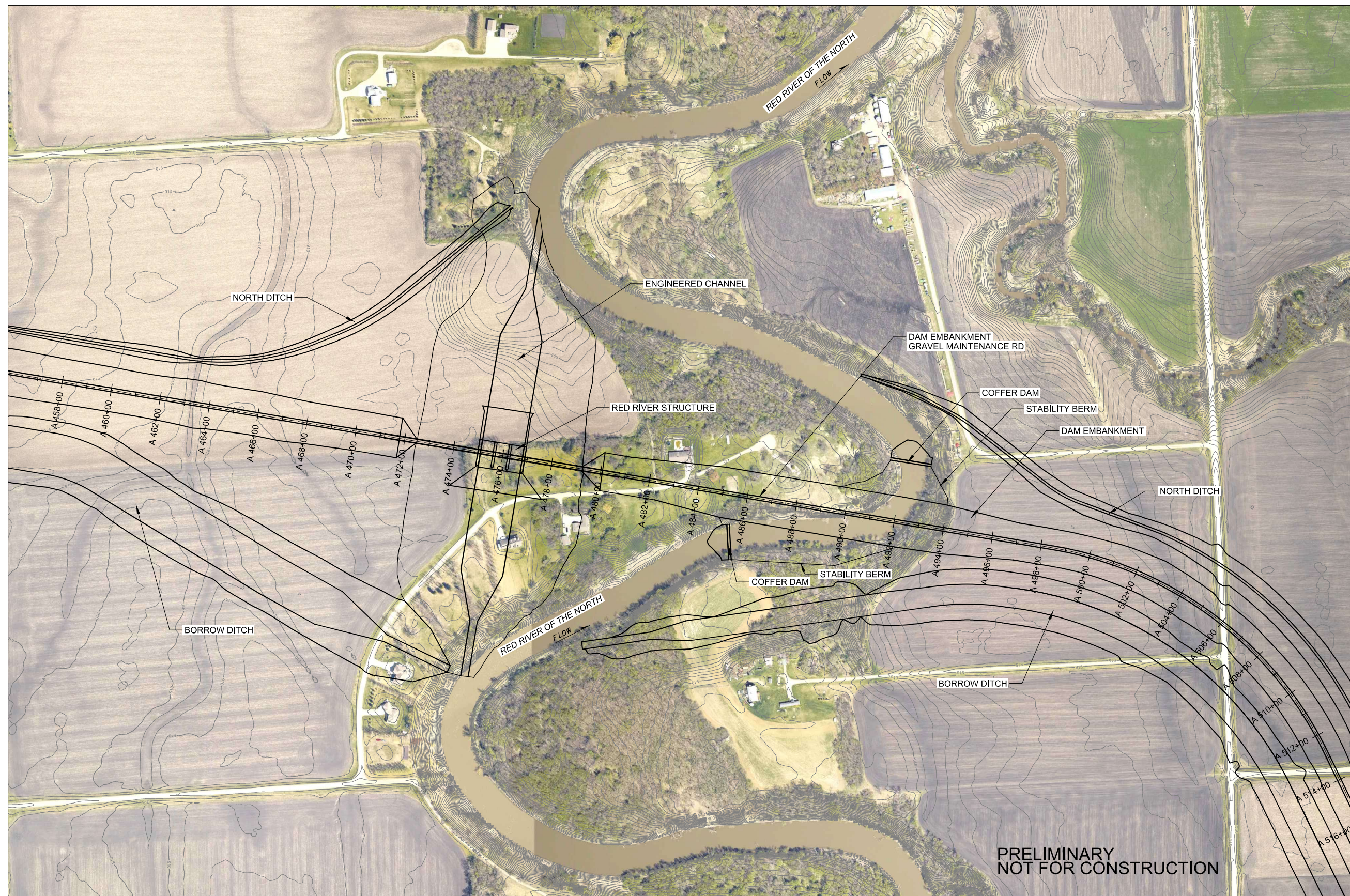


FIGURE 3

DESIGNED BY: FMM	DATE:	SOLICITATION NO.:
CAD BY: FMM	CONTRACT NO.:	
SUBMITTED BY: FMM	FILE NUMBER:	
PLOT SCALE:	FILE NAME:	
SIZE:		

FMM SOUTHERN EMBANKMENT
RED RIVER OF THE NORTH RIVER BASIN
FARGO-MOORHEAD FLOOD RISK MANAGEMENT
PRELIMINARY PLAN AND PROFILE
WOLVERTON CREEK CROSSING

SHEET
IDENTIFICATION
FIGURE 3

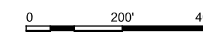


(A1

PRELIMINARY PLAN

RED RIVER STRUCTURE

SCALE: 1"=200'



**US Army Corps
of Engineers®**

FIGURE 4

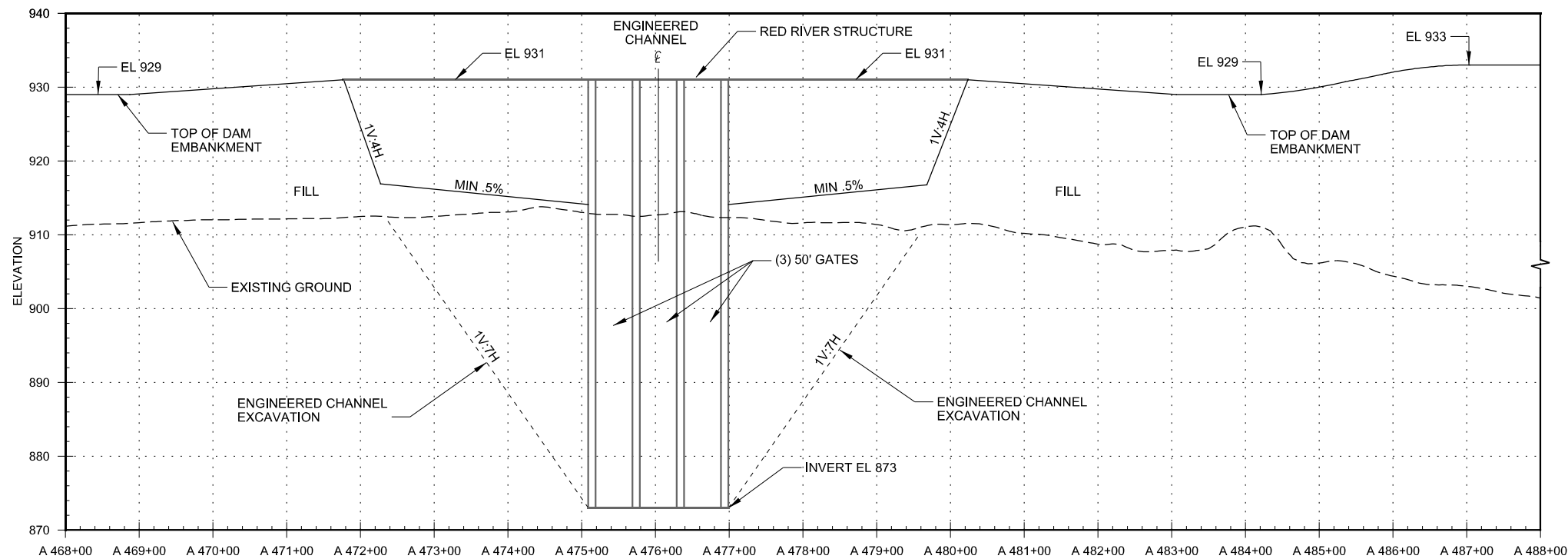
U.S. ARMY CORPS OF ENGINEERS		DESIGNED BY:		DATE:	
ST. PAUL DISTRICT		DWN BY:	CMD BY:	SOLICITATION NO.:	
ST. PAUL, MINNESOTA		SUBMITTED BY:		CONTRACT NO.:	
		PLOT SCALE:	PLOT DATE:	FILE NUMBER:	
		SIZE:	FILE NAME:		

FMM SOUTHERN EMBANKMENT
RED RIVER OF THE NORTH RIVER BASIN
FARGO-MOORHEAD FLOOD RISK MANAGEMENT

SHEET
IDENTIFICATION
FIGURE 4

D

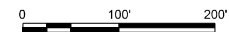
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A2

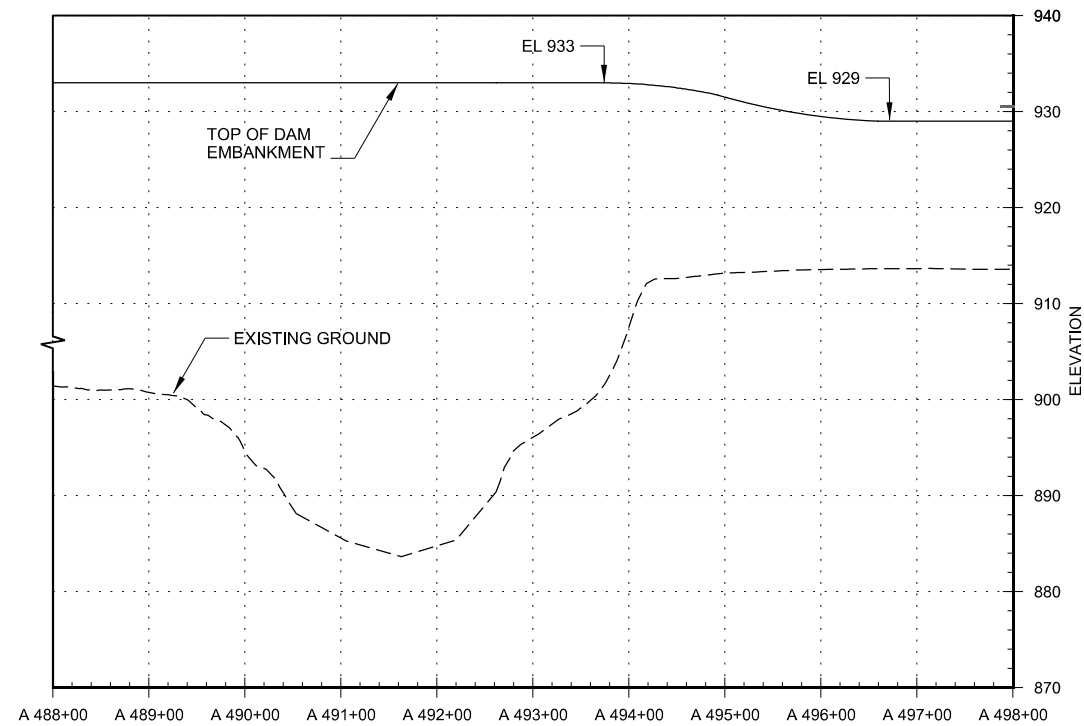
PRELIMINARY PROFILE

DAM EMBANKMENT AT RED RIVER STRUCTURE



B

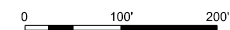
A



A1

PROFILE VIEW

DAM EMBANKMENT AT RED RIVER STRUCTURE



US Army Corps
of Engineers®

FIGURE 5

DESIGNED BY:	DATE:	SOLICITATION NO.:
U.S. ARMY CORPS OF ENGINEERS		
ST. PAUL DISTRICT		
ST. PAUL, MINNESOTA		
DWN BY:	CAD BY:	CONTRACT NO.:
SUBMITTED BY:	FILE NAME:	FILE NUMBER:
PLOT SCALE:	FILE NAME:	FILE NUMBER:
1" = 100'	F:\MFMV\RRS_PERMIT_C-PR-1.dgn	
SIZE:	FILE NAME:	FILE NUMBER:

FMM SOUTHERN EMBANKMENT
RED RIVER OF THE NORTH RIVER BASIN
FARGO-MOORHEAD FLOOD RISK MANAGEMENT
FARGO, ND
PRELIMINARY PROFILE
DAM EMBANKMENT
RED RIVER STRUCTURE

SHEET
IDENTIFICATION
FIGURE 5

PRELIMINARY
NOT FOR CONSTRUCTION



PRELIMINARY
NOT FOR CONSTRUCTION

ELEVATION DATUM (VERTICAL CONTROL):
NAVD 88
GEOID12A

COORDINATE SYSTEM (HORIZONTAL CONTROL):
NAD 83 (2011)
ND SPCS SOUTH ZONE-U.S. SURVEY FT.
COMBINED FACTOR (CF): 0.999956276

FMM WILD RICE RIVER STRUCTURE
RED RIVER OF THE NORTH RIVER BASIN
FARGO-MOORHEAD FLOOD RISK MANAGEMENT
FARGO, ND
PRELIMINARY PLAN
WILD RICE RIVER STRUCTURE

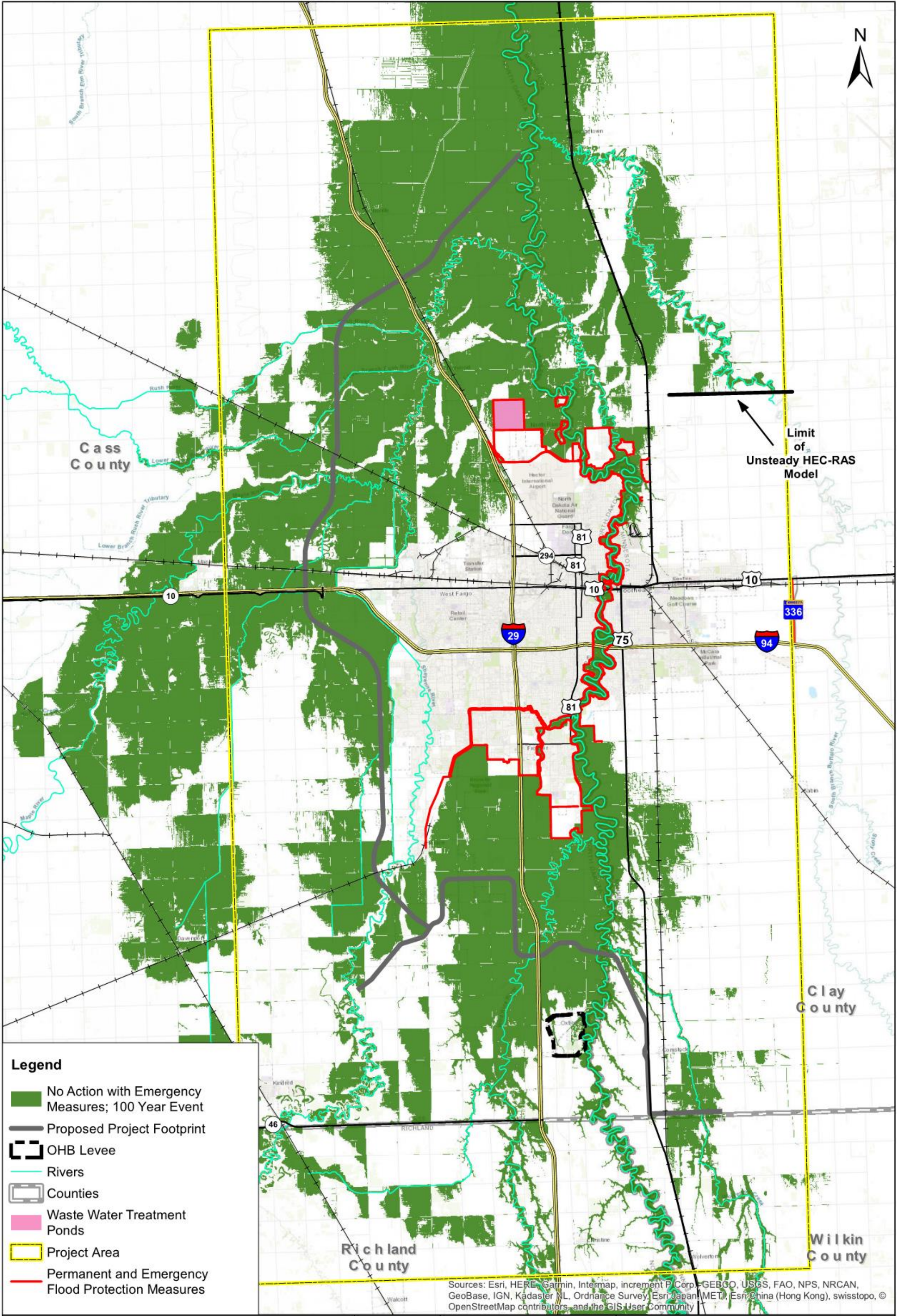
Sheet
ID
FIGURE 6

U.S. ARMY CORPS OF ENGINEERS		DESIGNED BY:		DATE:	
ST. PAUL DISTRICT		DWN BY:	COD BY:	SOLICITATION NO.:	
ST. PAUL, MINNESOTA		EPP	SCW	CONTRACT NO.:	
		SUBMITTED BY:		FILE NUMBER:	
		THOMAS GULLY		JAA	
		PILOT SCALE:		PLOT DATE:	
		1" = 200'		8/25/76	
		SIZE:	FILE NAME:	FILE NO.:	
			FILE NO.	FILE NO.	

DATE:	
SOLICITATION NO.:	
CONTRACT NO.:	
FILE NUMBER:	
XXX	

[illegible]

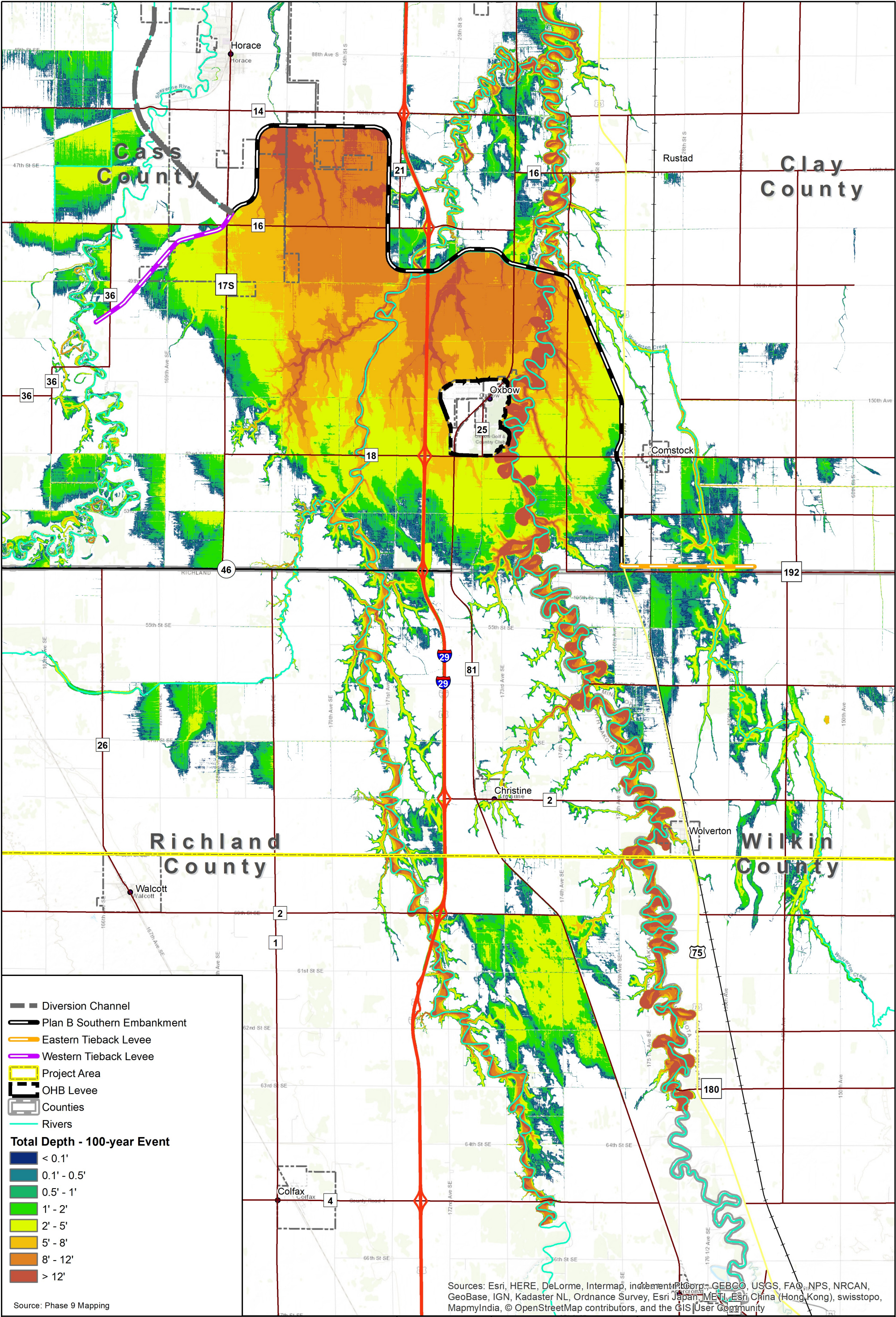
US Army Corp
of Engineers®



Base No Action (with Emergency Measures); 100 Year Event



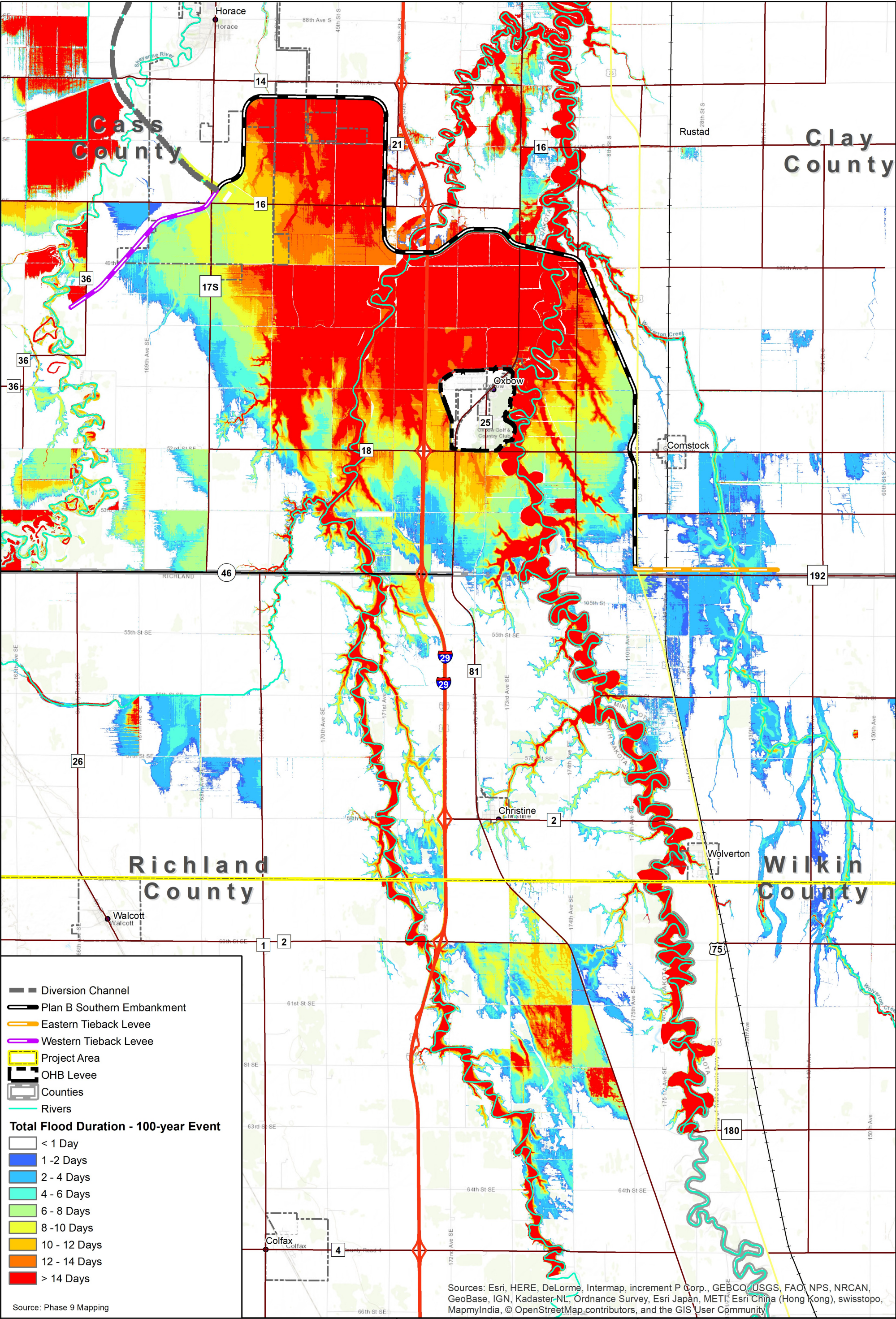
Figure 8



**Plan B – 100-year Event
Total Depth Map**



Figure 9



Plan B – 100-year Event
Total Duration Map

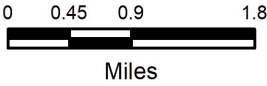
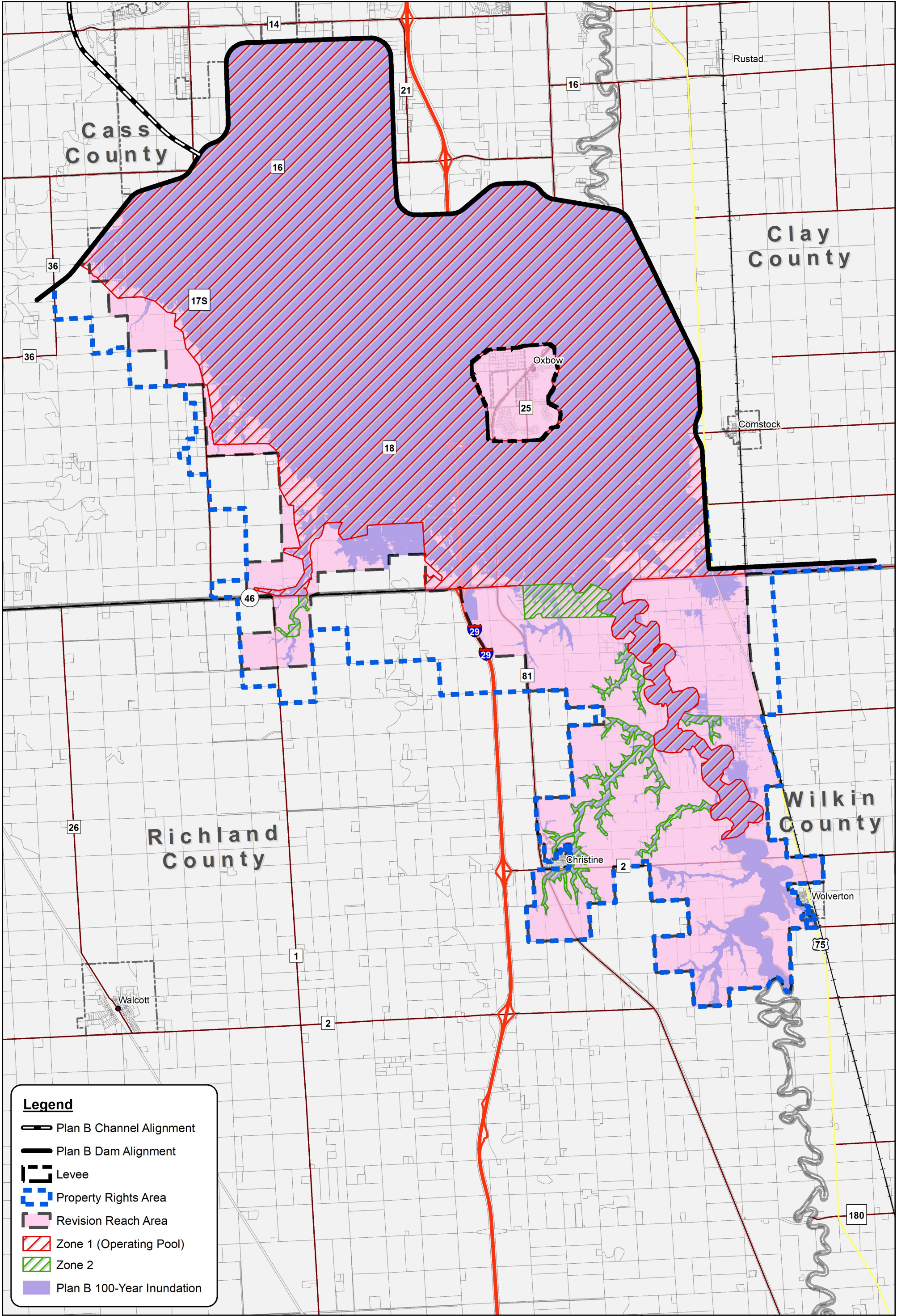
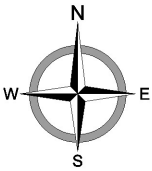


Figure 10



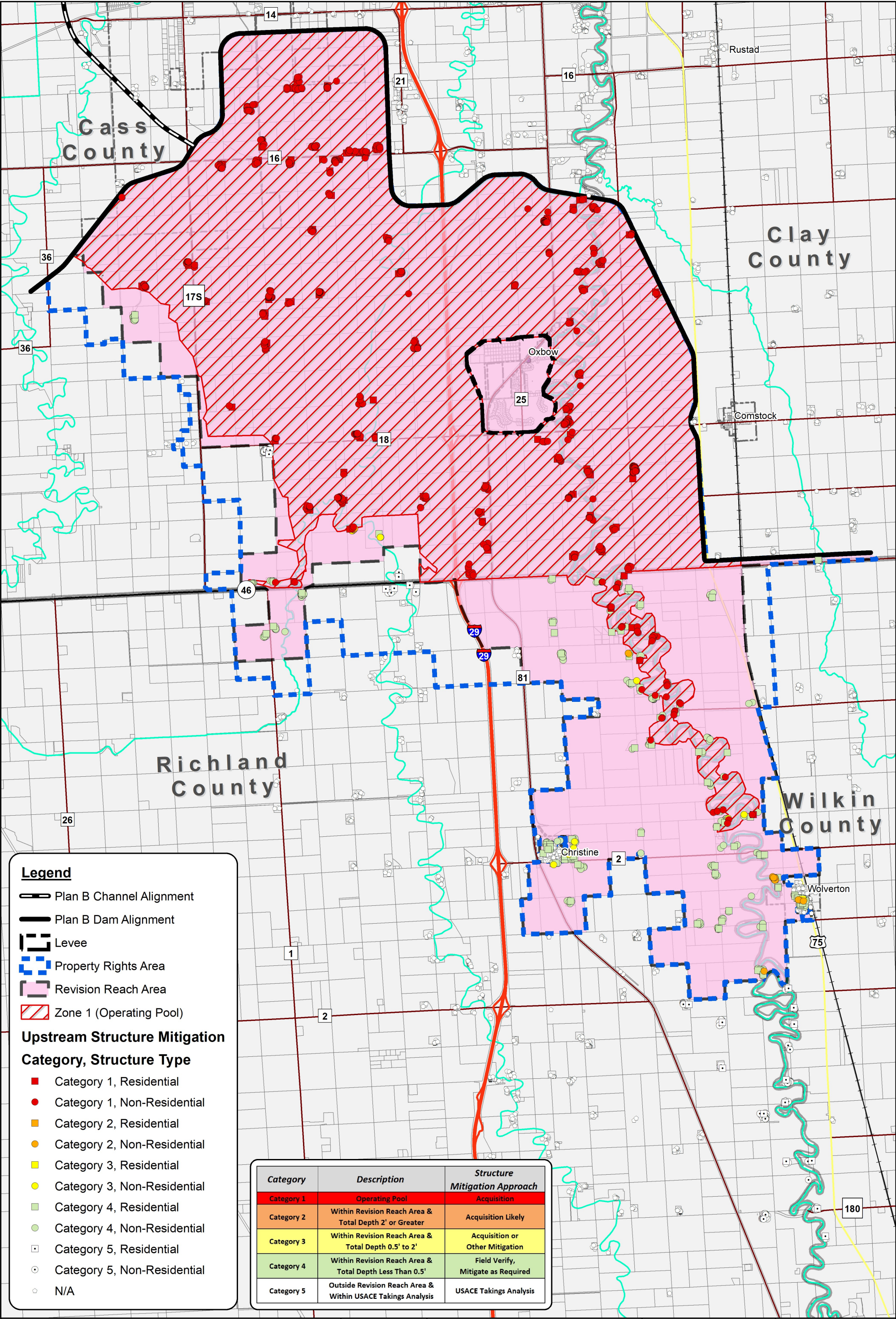
**FM AREA DIVERSION PROJECT
UPSTREAM MITIGATION AREA**



0 0.6 1.2 2.4
Miles

FIGURE 11





**FM AREA DIVERSION PROJECT
POTENTIALLY IMPACTED STRUCTURES**

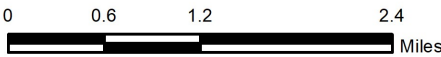
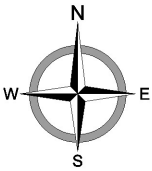
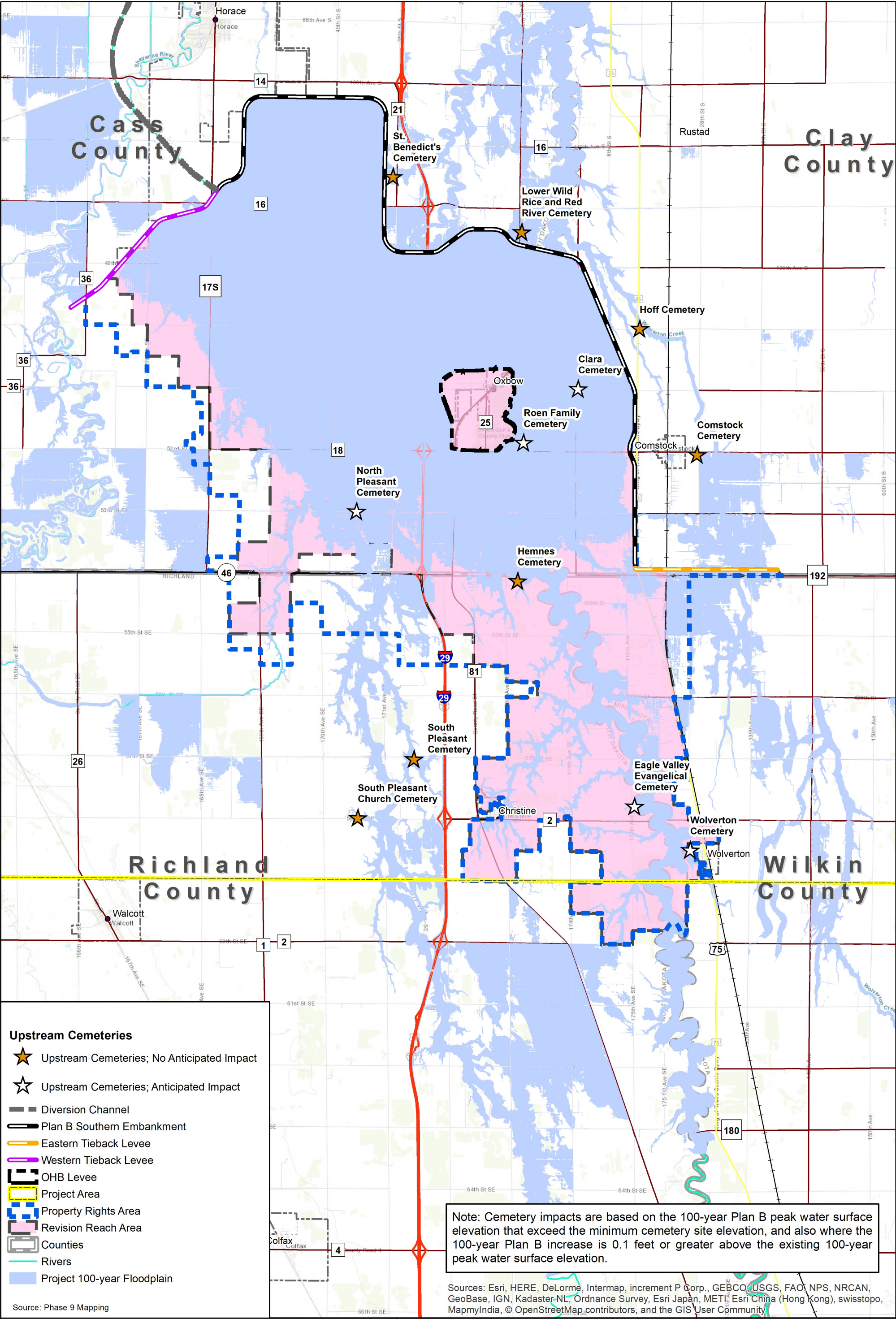


FIGURE 12





**Upstream Cemeteries;
Plan B 100-year Event;
Property Rights Areas**

Created By: kyle.volk Date Created: 5/25/2018 Date Exported: 8/15/2018 Image: ESRI World Topographic Elevation Data: USACE DEM
Coordinate System: NAD 1983 UTM Zone 14N Datum: North American 1983
T:\Projects\177001\177382\11\MDNR_ADA_Maps\DNR_Fig_13_CemeteryMap_2018_08_10_DNR_100yr.mxd

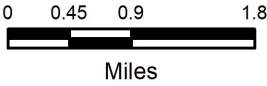
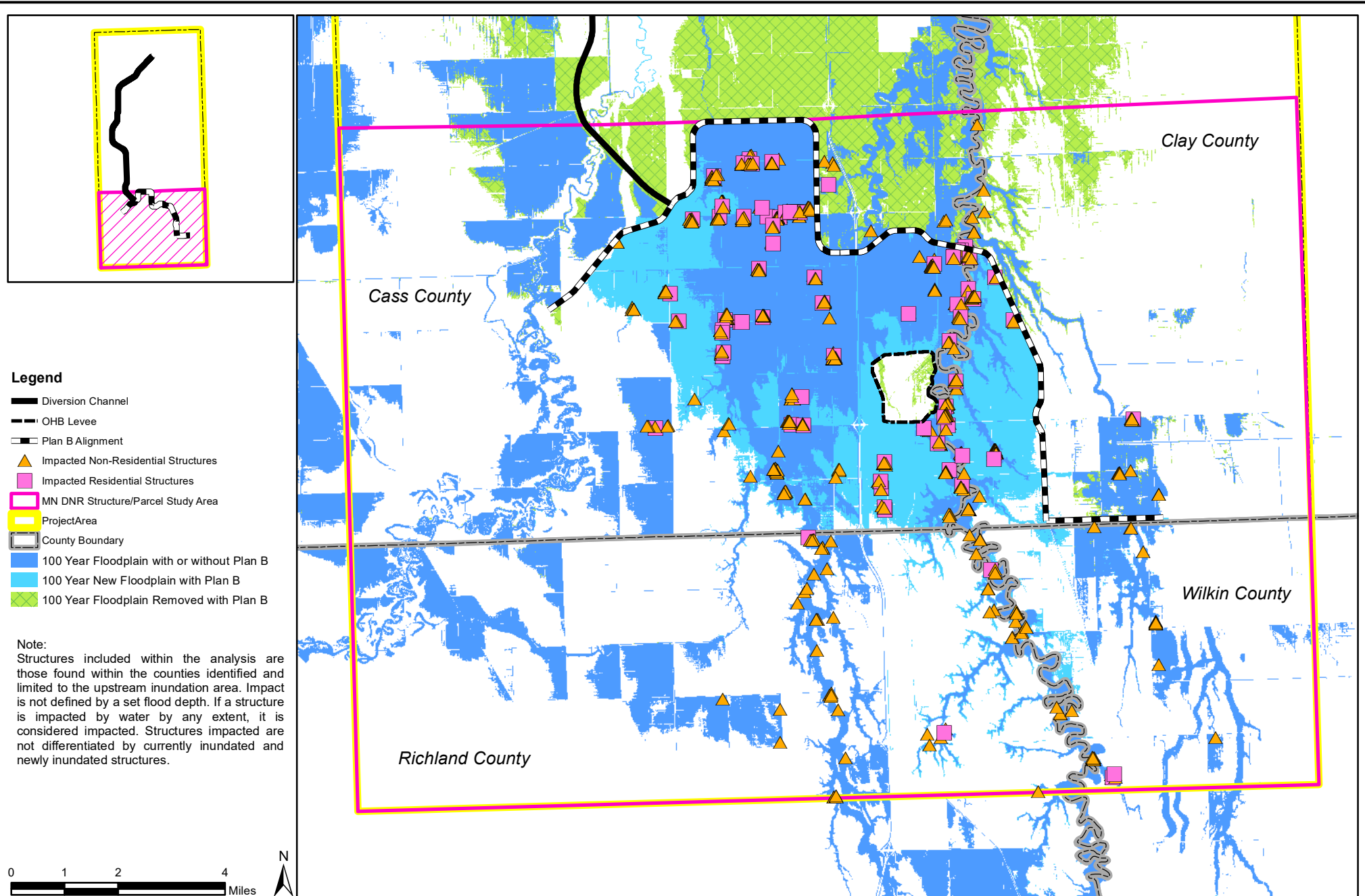


Figure 13



FARGO-MOORHEAD FLOOD RISK MANAGEMENT PROJECT

Plan B Impacted Structures, Upstream Inundation Area, 100-year Flood

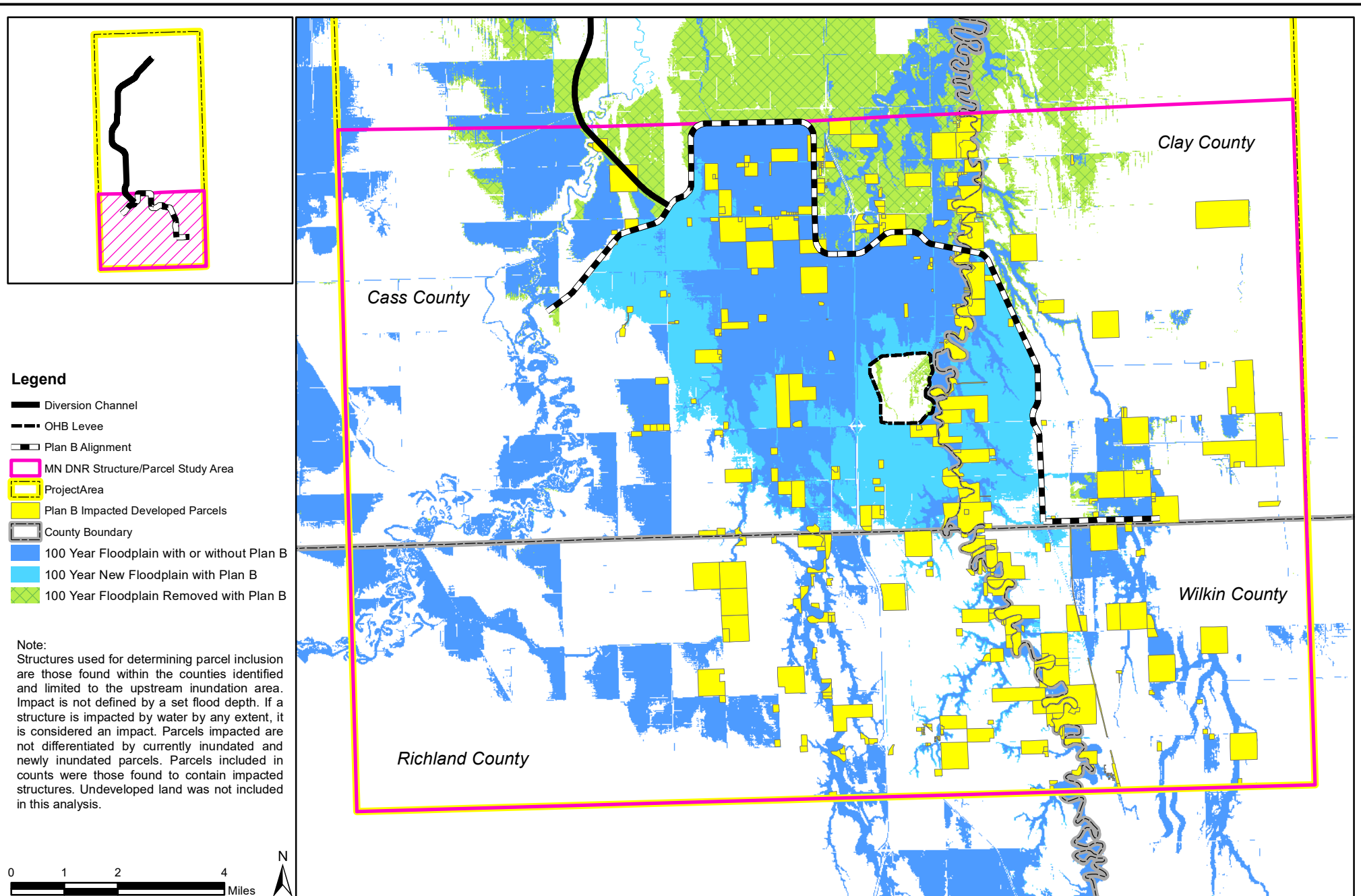
Created by: Forward K. Date Created: 08/09/2018 Exported Date: 08/09/2018



Figure 14

Source: Phase9_Polygons_Updates.gdb, ExCond_CombRPTP_FP_100yr, WP_CombRPTP_FP_100yr, MN_DNR_100YR_PlanB_Structures_Merged.shp

Coordinate System: NAD 1983 UTM Zone 14N



FARGO-MOORHEAD FLOOD RISK MANAGEMENT PROJECT

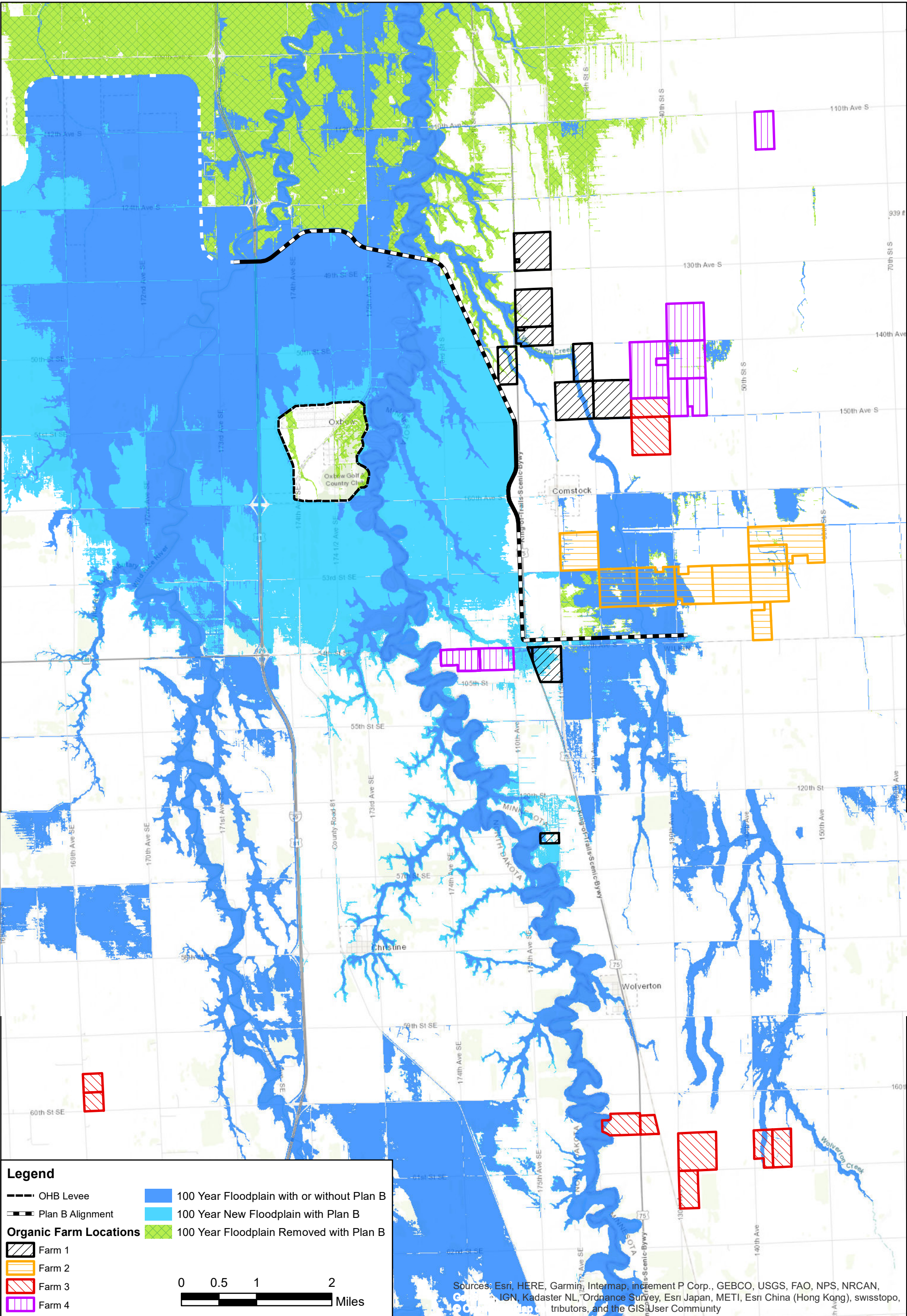
Plan B Impacted Parcels, Upstream Inundation Area, 100-year Flood

Created by: Forward K. Date Created: 08/09/2018 Exported Date: 08/09/2018



Figure 15

Source: Phase9_Polygons_Updates.gdb, ExCond_CombRPTP_FP_100yr, WP_CombRPTP_FP_100yr, RichlandParcels_100YR_PlanB, CassParcels_100YR_PlanB, WilkinParcels_100YR_PlanB, ClayParcels_100YR_PlanB.



Legend

OHB Levee

Plan B Alignment

Organic Farm Locations

Farm 1

Farm 2

Farm 3

Farm 4

100 Year Floodplain with or without Plan B

100 Year New Floodplain with Plan B

100 Year Floodplain Removed with Plan B

00.512

Miles

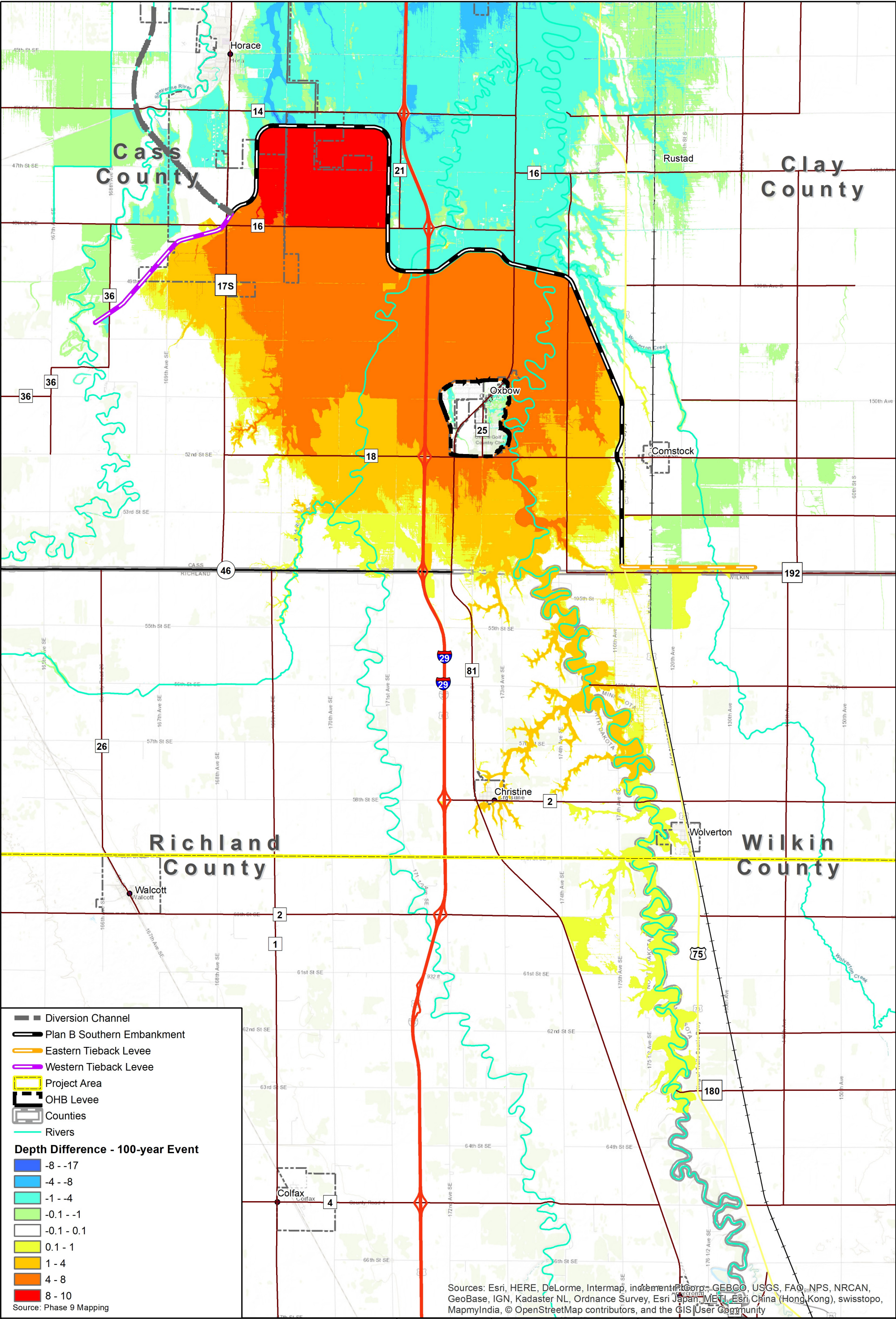
FARGO-MOORHEAD FLOOD RISK MANAGEMENT PROJECT

Plan B Impacted Organic Farms, 100-year Flood

Created by: Forward K. Date Created: 08/09/2018 Exported Date: 08/09/2018

Figure 16

Source: Phase9_Polygons_Updates.gdb, ExCond_CombRPTP_FP_100yr, WP_CombRPTP_FP_100yr. Organic_Farm_Locations.shp
Coordinate System: NAD 1983 UTM Zone 14N

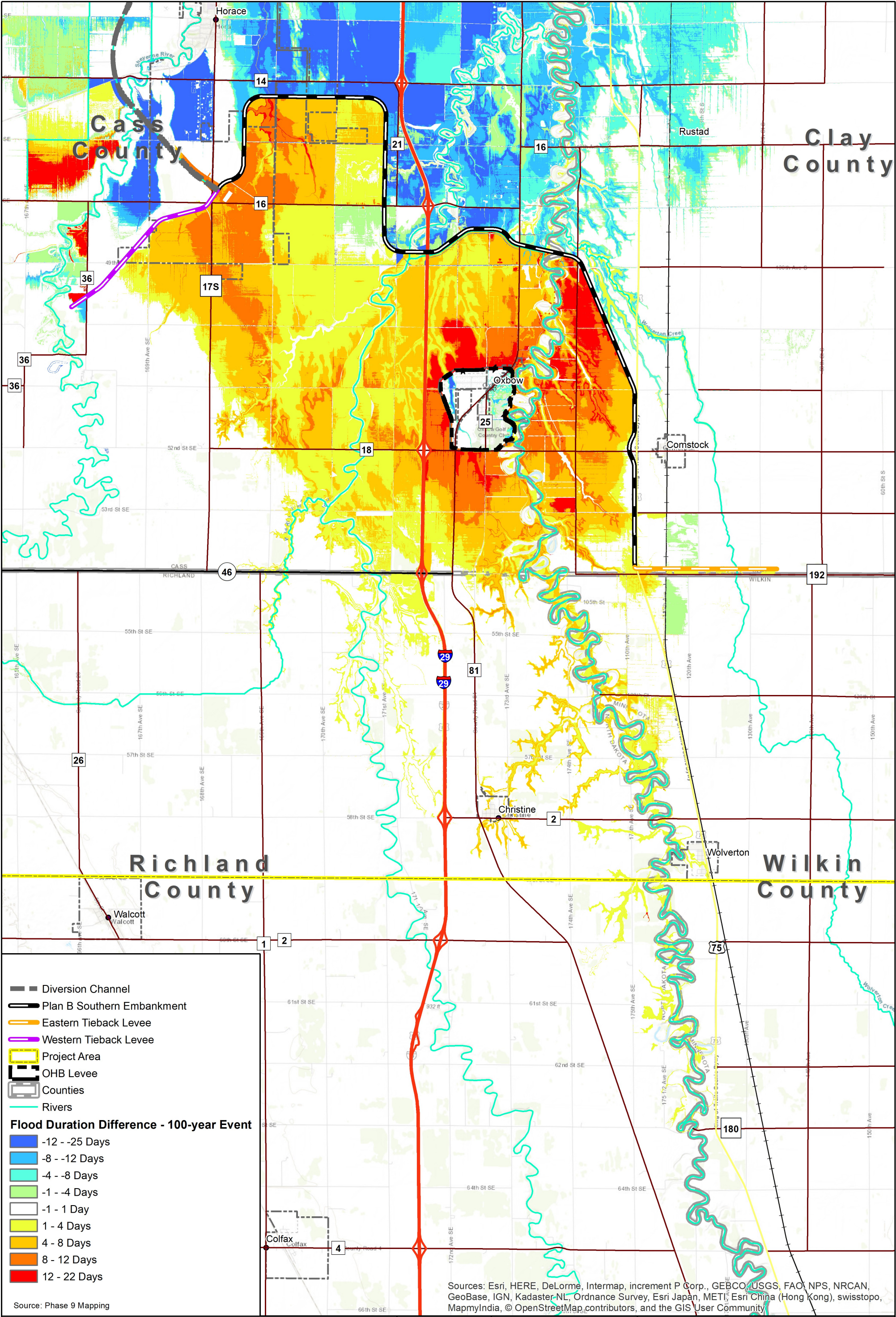


Plan B – 100-year Event
Depth Difference Map

Created By: kyle.volk Date Created: 5/25/2018 Date Exported: 8/15/2018 Image: ESRI World Topographic Elevation Data: USACE DEM
Coordinate System: NAD 1983 UTM Zone 14N Datum: North American 1983
T:\Projects\1770017738211\MDNR_ADA_Maps\DNR_Fig_17_DepthDiffMap_2018_08_10_DNR_100yr.mxd



Figure 17



Plan B – 100-year Event
Duration Difference Map

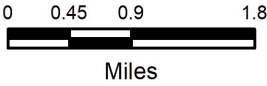


Figure 18

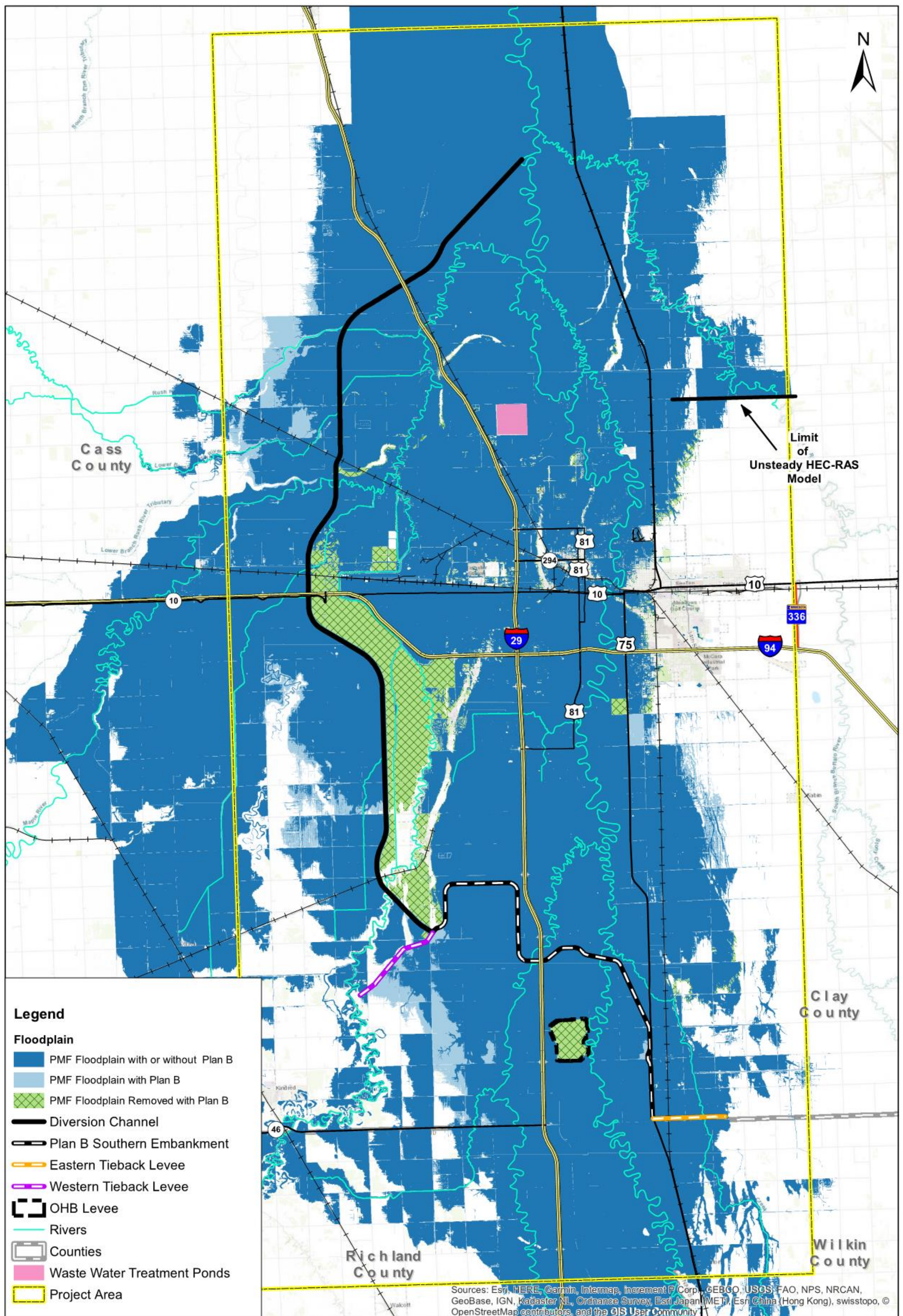


Figure 19