

U. S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT

2016 LEVEE SAFETY MEETING

*"SHARED RISKS, SHARED SOLUTIONS"*

Sheraton Louisville Riverside Hotel,  
Jeffersonville, IN

9-10 February 2016



US Army Corps  
of Engineers  
Louisville District

AGENDA

Tuesday 9 February 2016

9:00 to 9:15	Opening Remarks - Day 1	Colonel Christopher Beck, P.E., Commander, Louisville District
9:15 to 10:15	Overview of the Levee Safety Program	Eric Halpin, P.E., HQ Assistant to Dam and Levee Safety
10:30 to 11:00	Presentation by Risk Cadre - Levee Risk Assessments	Greg Werncke, P.E., Senior Technical Advisor, Risk Management Center (RMC)
11:00 to 11:45	Understanding the Preservation of Large Diameter Gravity Pipes with Structural Epoxy - Spray-In-Place-Pipe Liner (SIPP)	Danny Warren, Warren Environmental Inc., A&W Maintenance Inc.
11:45 to 12:15	Interim Policy on Inspection	Matthew Whelan, P.E. - Levee Safety Area Representative (LSAR) Upper Wabash
1:15 to 1:45	Abandoning/Sealing/Removing Obsolete Project Components	Ross Wright, P.E. Levee Safety Area Representative (LSAR) Lower Ohio and Green Rivers
1:45 to 2:15	Controlling Water with Water - Dam-It Dams	Brian Francis, Dam-It Dams Product Specialist
2:15 to 2:45	Public Alerts and Warnings: What really matters?	Will Lehman, Economist at Hydrologic Engineering Center (HEC)
3:00 to 3:30	Installation and Inspection of Reinforced Concrete Pipes (RCP)	Trygve Hoff, American Concrete Pipe Association (ACPA) Region Engineer that serves KY, OH, & IN
3:30 to 4:30	Levee Safety Areas (LSA) - Levee sponsors will provide short discussions on lessons learned on their projects. For example - issues with gate replacements; rebuild of pumps, mowing techniques, etc.	Levee Safety Area Representatives (LSARs) - Alvey, Inspector; Bryan, PE; Lasoski, PE; Wright, PE; Whelan, PE.
7:30 to 8:00	<b>Presentation: Silver Jackets Overview</b>	Brandon Brummett, P.E., PMP - Louisville District Outreach Coordinator

**"Life Safety is Paramount"**

U. S. ARMY CORPS OF ENGINEERS LOUISVILLE DISTRICT

**2016 LEVEE SAFETY MEETING**

*"SHARED RISKS, SHARED SOLUTIONS"*

Sheraton Louisville Riverside Hotel,  
Jeffersonville, IN

**9-10 February 2016**



**US Army Corps  
of Engineers**  
Louisville District

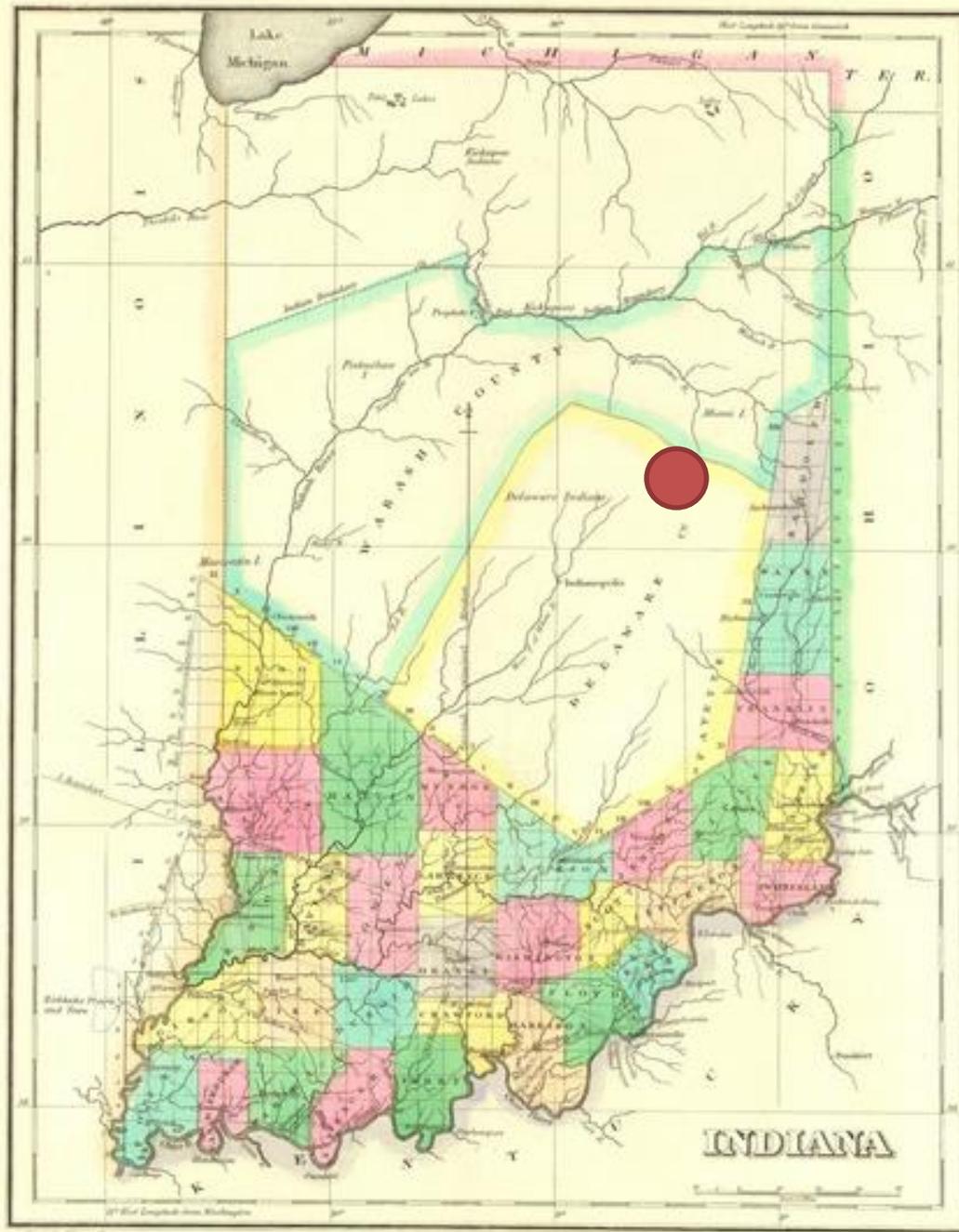


**AGENDA**

**Wednesday 10 February 2016**

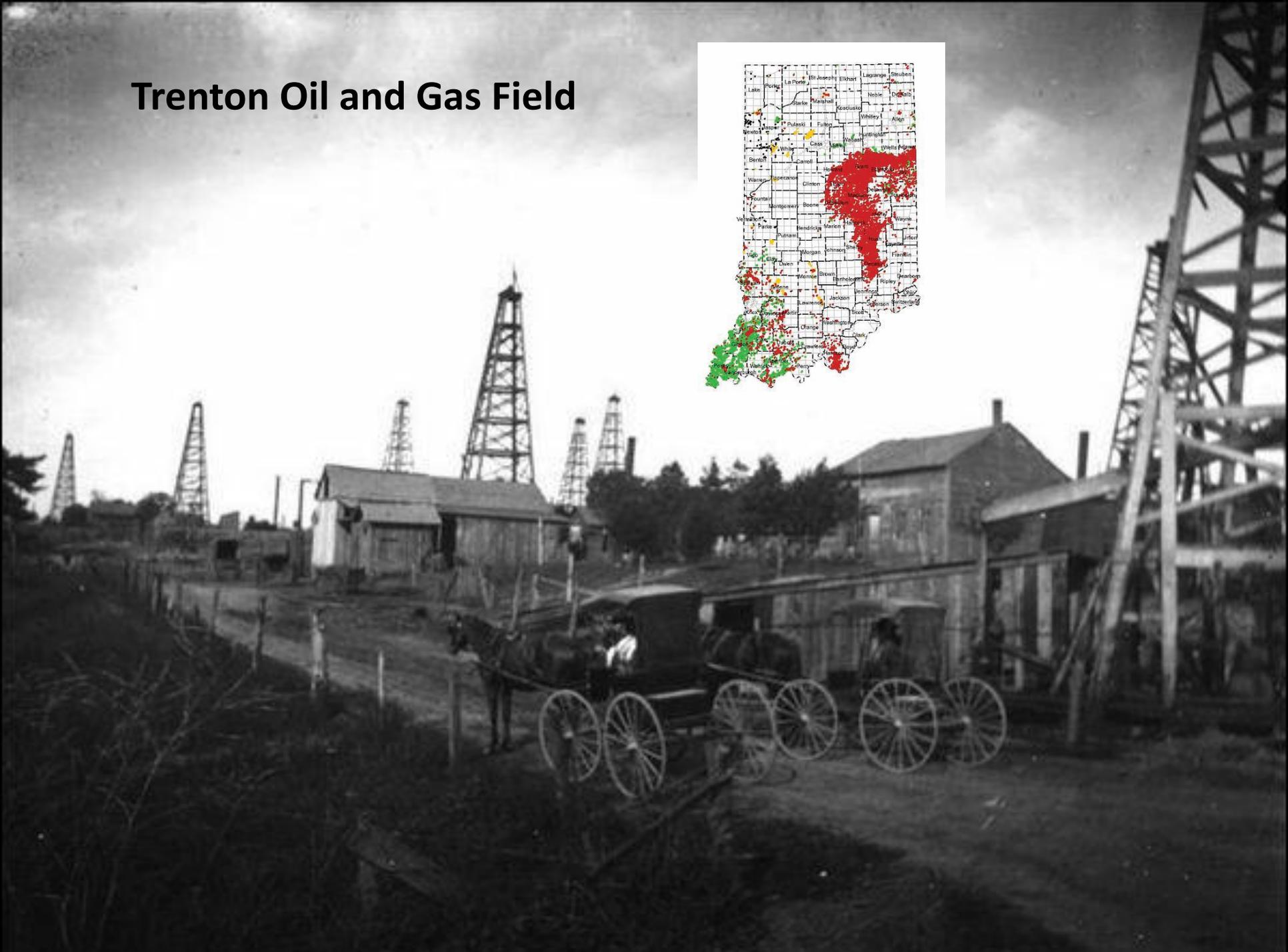
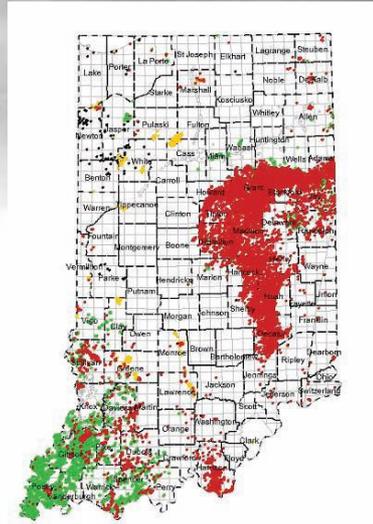
8:30 to 8:45	Opening Remarks - Day 2	John Bock, P.E., Chief, Engineering Division and Levee Safety Officer (LSO)
8:45 to 9:15	Painting and Repainting Waterfront Steel Structures	Mark Jelinek, Sherwin Williams
9:15 to 9:45	Programs and Project Management Studies	Amy Babey, PMP, Chief of Plan Formulation Section
9:45 to 10:15	Discuss Silver Jackets Study for Metro Louisville Emergency Preparedness Plan (EPP)	Nathan Bryan, P.E., Levee Safety, Geotechnical Engineer
10:30 to 11:00	Cannelton Relief Well Project	Rick Hockett, PG, Risk Cadre, Geologist
11:00 to 11:30	Overtopping Leading to Levee Breaches	Terry Sullivan, P.E., Geotechnical/Geology Branch Chief, Eastern Division, Risk Management Center, Institute of Water Resources
11:30 to 12:30	USACE Assistance During Emergency Operations	Don Walker, Emergency Operations Manager, Emergency Operations Center (EOC) Louisville District
1:30 to 2:00	Western Excelsior - Current Work on New Orleans Levee Systems	Lee Pierce, Western Excelsior
2:00 to 2:30	Mechanical Solutions to Pump Station & Levee Components	Mark Robertson, P.E., Regional Technical Specialist (RTS) Mechanical Engineer LRL
2:30 to 3:00	H&H Presentation on Revised Wabash River Discharges and Potential Impacts to Levee Sponsors Maintaining Levees Along the Wabash River; & Potential Update Study to Ohio River Discharges - Study.	Richard Pruitt, P.E., Chief of Hydrology & Hydraulics Section

**"Life Safety is Paramount"**

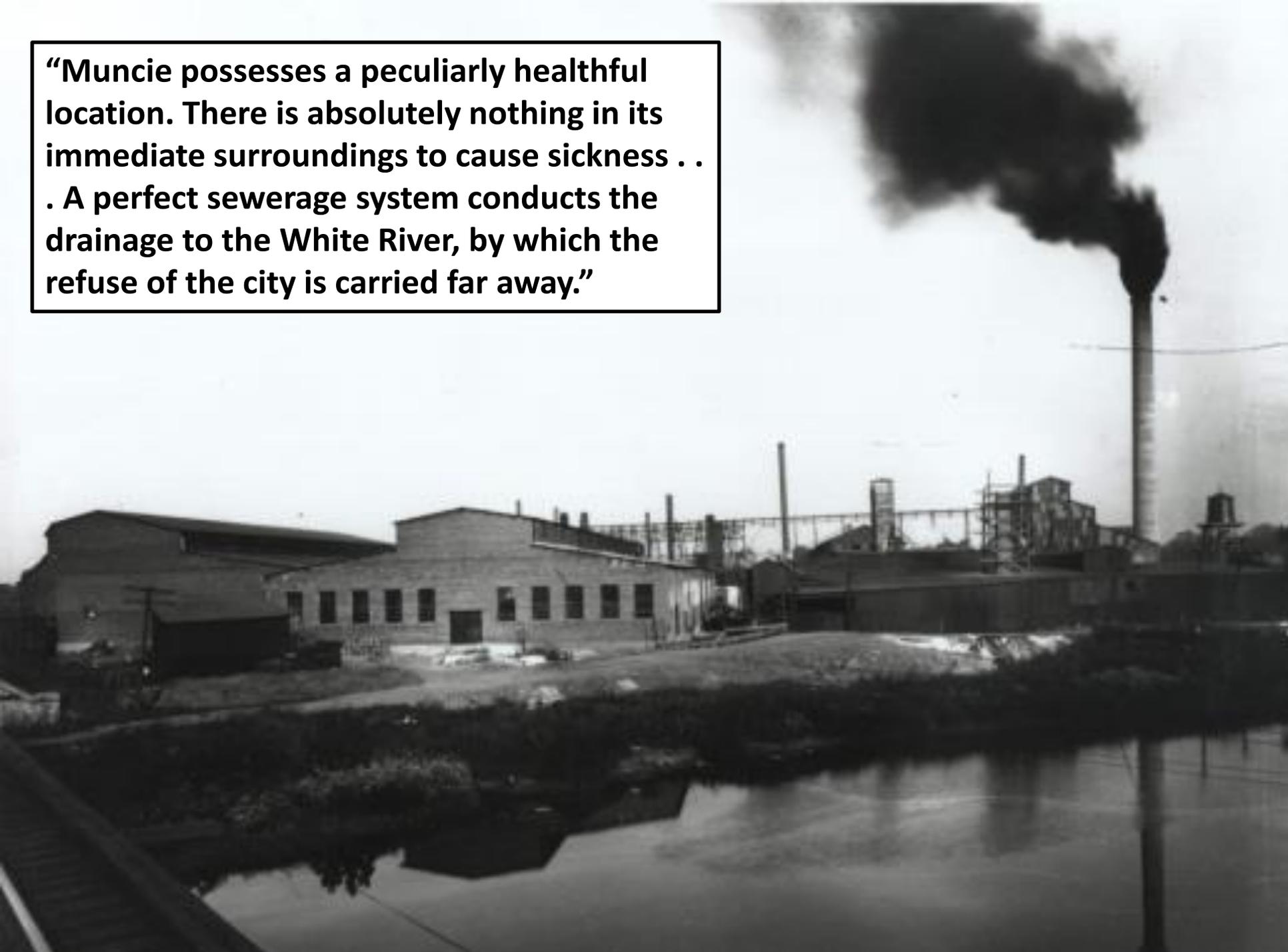


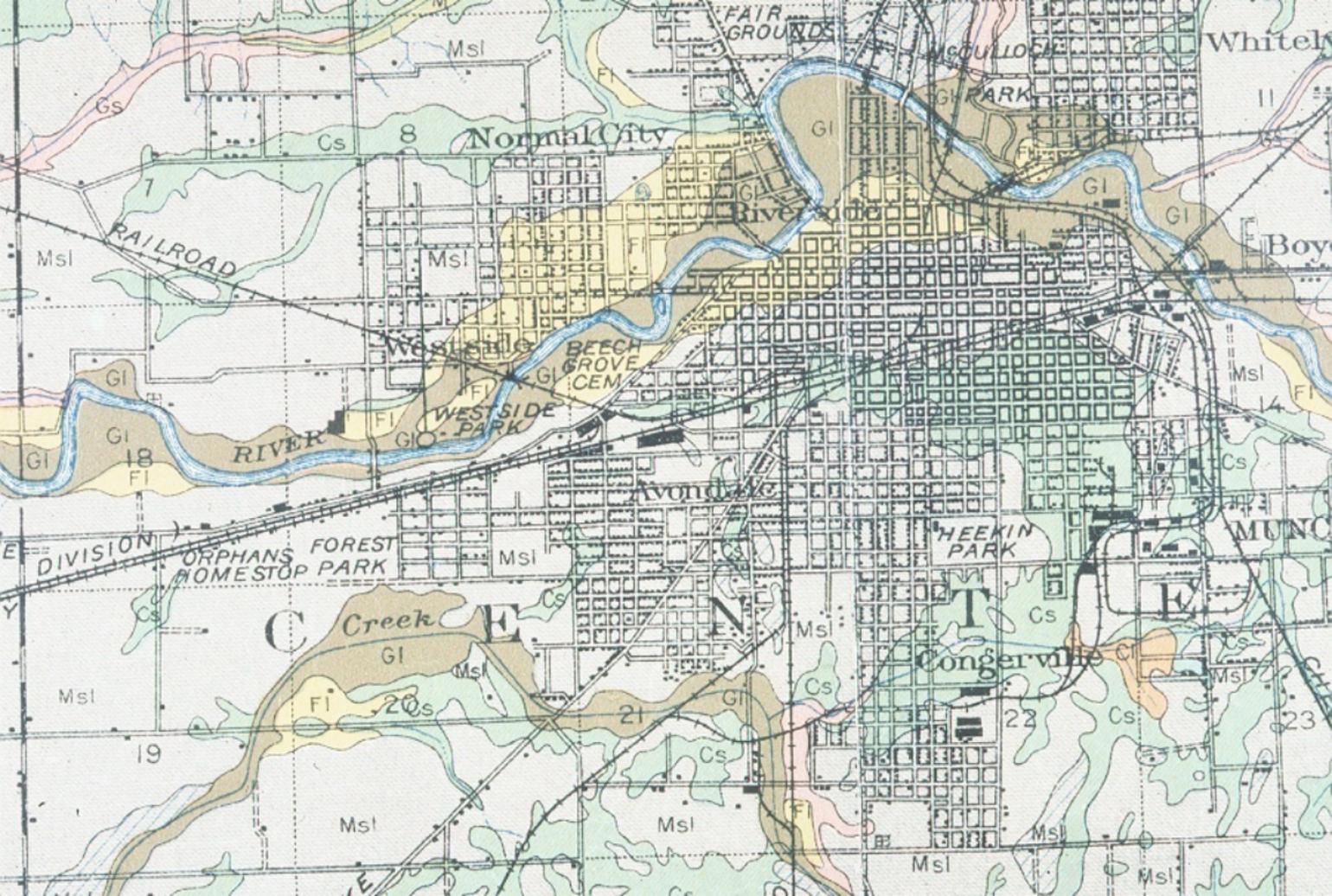


# Trenton Oil and Gas Field



**“Muncie possesses a peculiarly healthful location. There is absolutely nothing in its immediate surroundings to cause sickness . . . A perfect sewerage system conducts the drainage to the White River, by which the refuse of the city is carried far away.”**





1701

White River From Riverside Ave

March 25-13



C&O AND PENN. R.R. BRIDGES,  
MUNCIE, IND. 3-27-19.







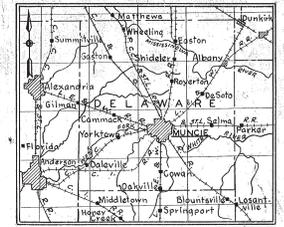
E. JACKSON ST BRIDGE, MUNCIE, IN. 9-29-13.





Construction  
3/2/51  
Dillingham

1877



VICINITY MAP

0 5 10 15 20 MILES



LEGEND

- NEW CHANNEL
- BOULEVARD IMPROVEMENT
- NEW LEVEE
- LEVEE, ENLARGEMENT
- WALL
- RAISED ROADWAY

PLAN

0 1000 2000 FT.

WABASH RIVER BASIN

FLOOD PROTECTION MUNCIE, IND.

GENERAL PLAN

SHEET 1 OF 40 SHEETS SCALES AS SHOWN

U. S. ENGINEER OFFICE LOUISVILLE, KY. APRIL 22, 1940

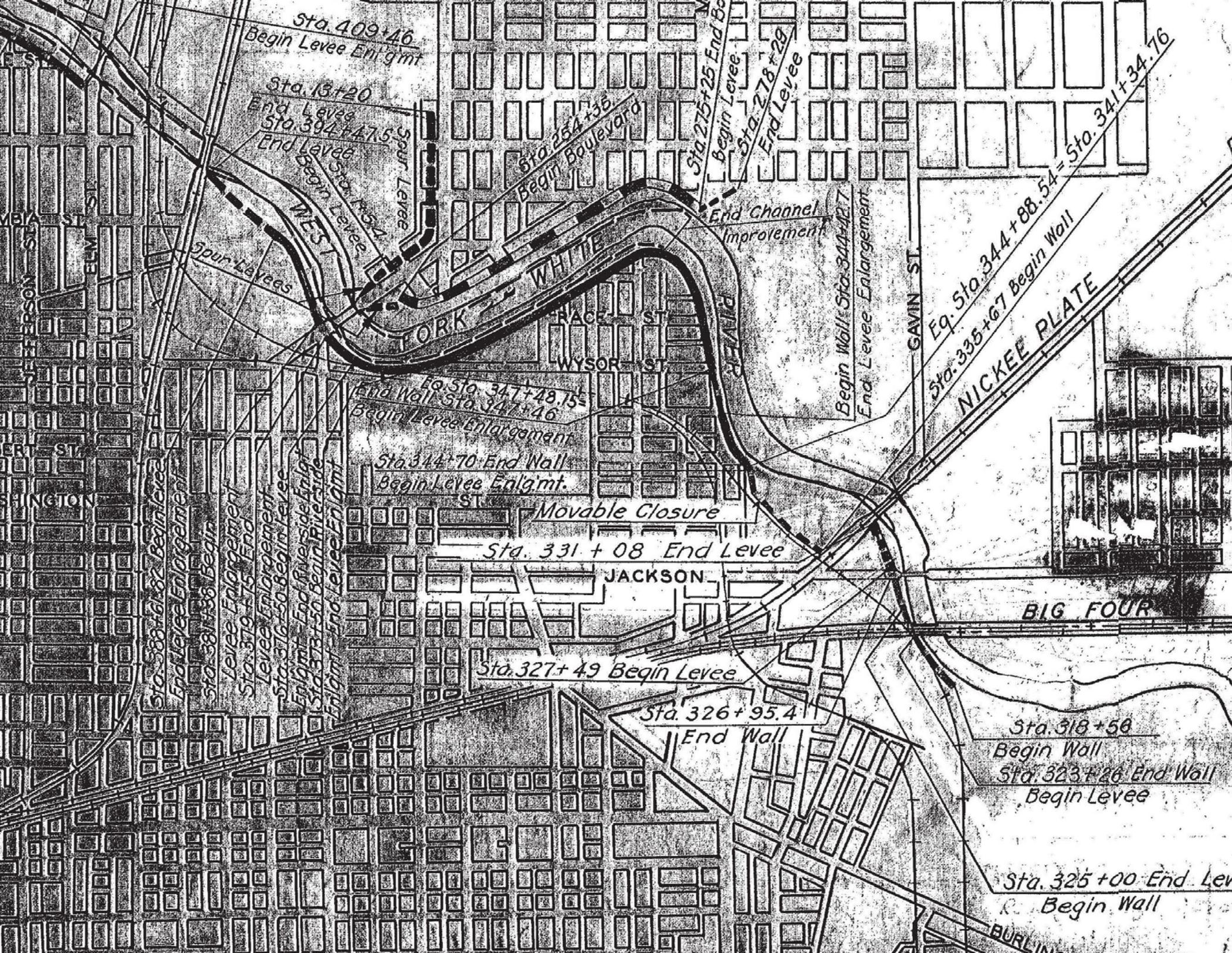
SUBMITTED: *J. M. Bailey*

APPROVAL RECOMMENDED BY  
*Wiley Haler*  
CAPT., CORPS OF ENGINEERS

APPROVED BY  
*W. C. ...*  
LT. COL., CORPS OF ENGINEERS

AS BUILT W7-12-21

PLN	DATE	CHARACTER	REVISIONS
319-40		Disposal Areas removed.	



Sta. 409+46  
Begin Levee Enlgmt

Sta. 13+20  
End Levee  
Sta. 394+47.5  
End Levee  
Sta. 164  
Begin Levee

Sta. 254+35  
Begin Boulevard

Sta. 275+25 End Levee  
Sta. 278+29  
End Levee

Eq. Sta. 344+88.54 = Sta. 341+34.76  
Sta. 335+67 Begin Wall

Sta. 388+61.62 Begin Levee  
End Levee Enlargement  
Sta. 381+36 Begin  
Levee Enlargement  
Sta. 379+15 End  
Levee Enlargement  
Sta. 376+50 Begin Levee  
Enlgmt - End Riverside Enlgmt  
Sta. 373+50 Begin Riverside  
Enlgmt - End Levee Enlgmt

Eq. Sta. 347+48.15 =  
End Wall Sta. 347+46  
Begin Levee Enlargement

Sta. 344+70 End Wall  
Begin Levee Enlgmt.

Movable Closure

Sta. 331+08 End Levee

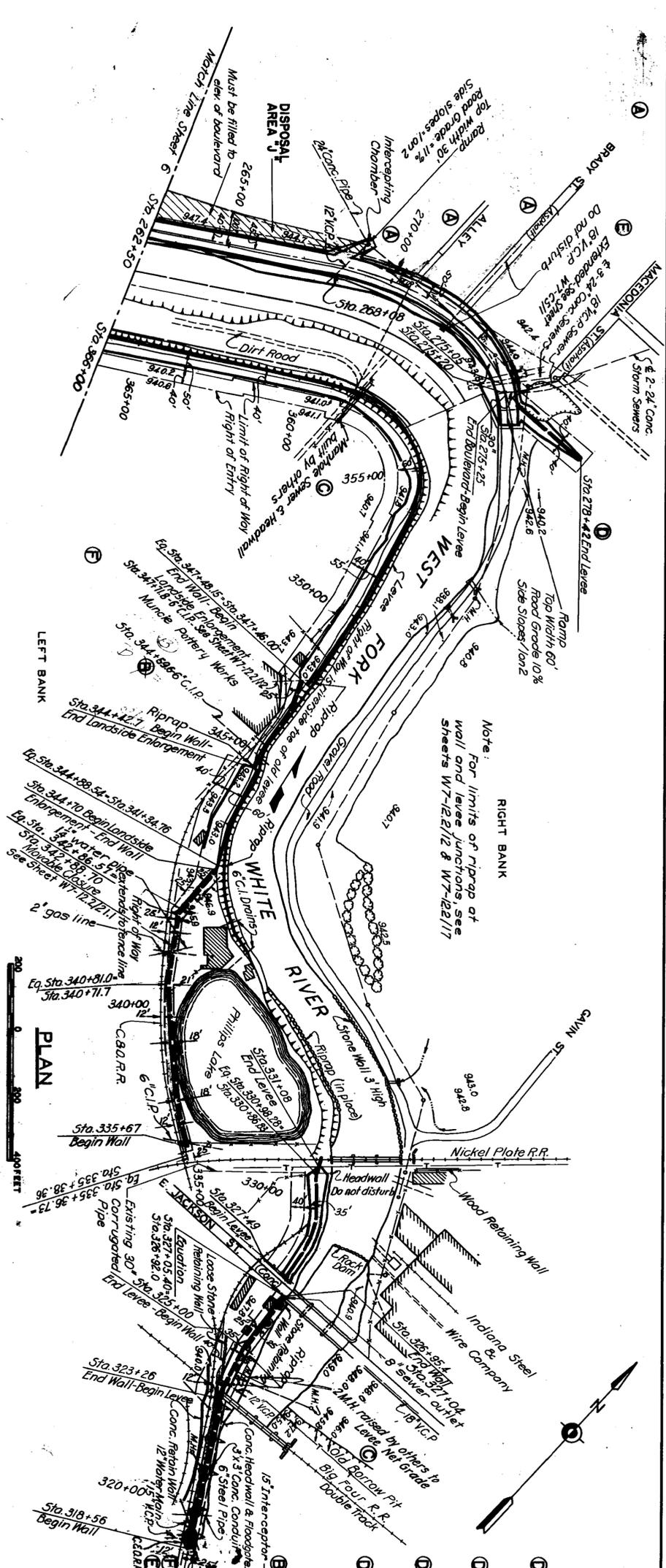
Sta. 327+49 Begin Levee

Sta. 326+95.4  
End Wall

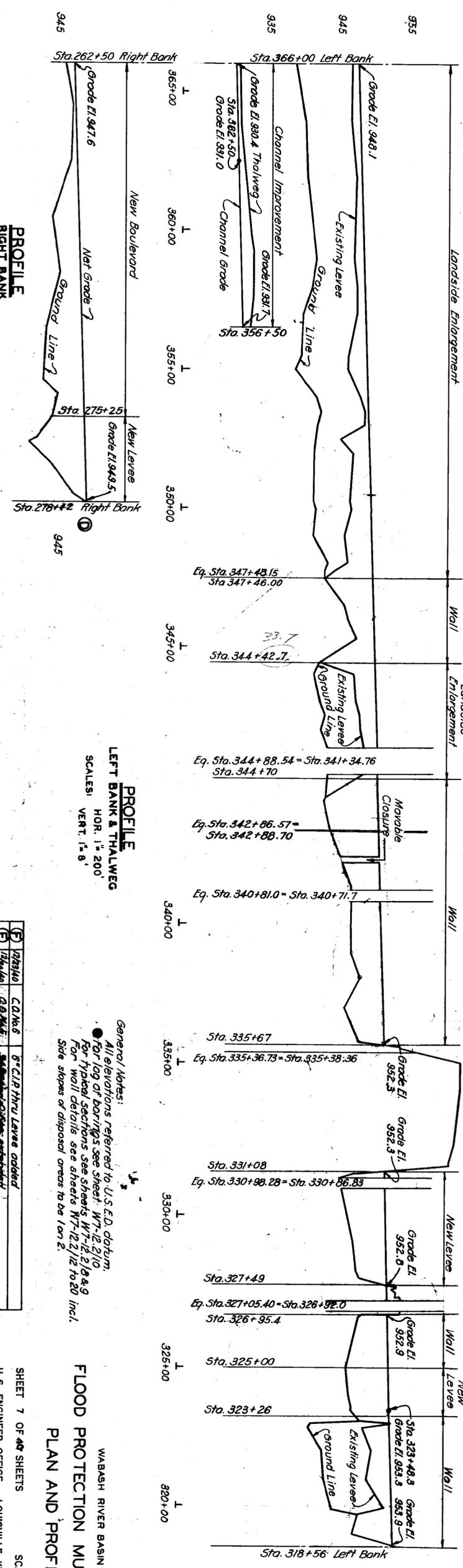
Sta. 318+50  
Begin Wall  
Sta. 323+26 End Wall  
Begin Levee

Sta. 325+00 End Levee  
Begin Wall

BURLIN



Station	Head-Gate Wall & Size	Remarks	Reference
263+08	1	New 12" sewer extension.	W7-12-2132
275+20		Remove existing concrete culvert, 30" dia. & 30' x 30' pipes	W7-12-2117
318+17.8		Remove 36" dia. 15' corr. 12" thru wall to existing rd. and connect to old rd. w/ relay water main thru wall.	W7-12-2118
319+10		Remove 36" dia. 15' corr. pipe sewer relay water main thru wall.	W7-12-2117
319+41		Remove 36" dia. 15' corr. pipe relay water main thru wall.	W7-12-2117
319+64		6" steel pipe thru wall.	W7-12-2117
321+07		3x3' box conduit under wall.	W7-12-2117
322+75		Remove 24" 30" Conc. pipe relay 24" 30" corr. iron pipe thru wall.	W7-12-2117
326+134		12" 5'-New 12" corr. pipe thru wall.	W7-12-2117
327+07		8" sewer thru bridge abutment.	W7-12-2117
335+75		6" C.I.P. thru wall.	W7-12-2112
344+136		6" C.I.P. with new 8" sleeve 1'-6" long thru wall.	W7-12-2112
341+60		1/2" water line thru wall.	W7-12-2112
341+01		2" gas line thru wall.	W7-12-2112
341+11.8		6" C.I.P. thru levee.	W7-12-2112
274+13		3'-24" 3'-24" corr. pipes attached to existing structure.	W7-12-2112



**PROFILE**  
RIGHT BANK

SCALES: HOR. 1" = 200'  
VERT. 1" = 8'

**PROFILE**  
LEFT BANK & THALWEG

SCALES: HOR. 1" = 200'  
VERT. 1" = 8'

General Notes:  
All elevations referred to U.S. E.D. datum.  
For log of borings see sheet W7-12-2110.  
For typical sections see sheets W7-12-2108 & 9.  
For wall details see sheets W7-12-2112 to 20 incl.  
Side slopes of disposal areas to be 1 on 2.

**FLOOD PROTECTION MUNCIE, IND.**  
**PLAN AND PROFILE**

WABASH RIVER BASIN  
SHEET 7 OF 48 SHEETS  
U. S. ENGINEER OFFICE, LOUISVILLE, KY. APRIL 22, 1940

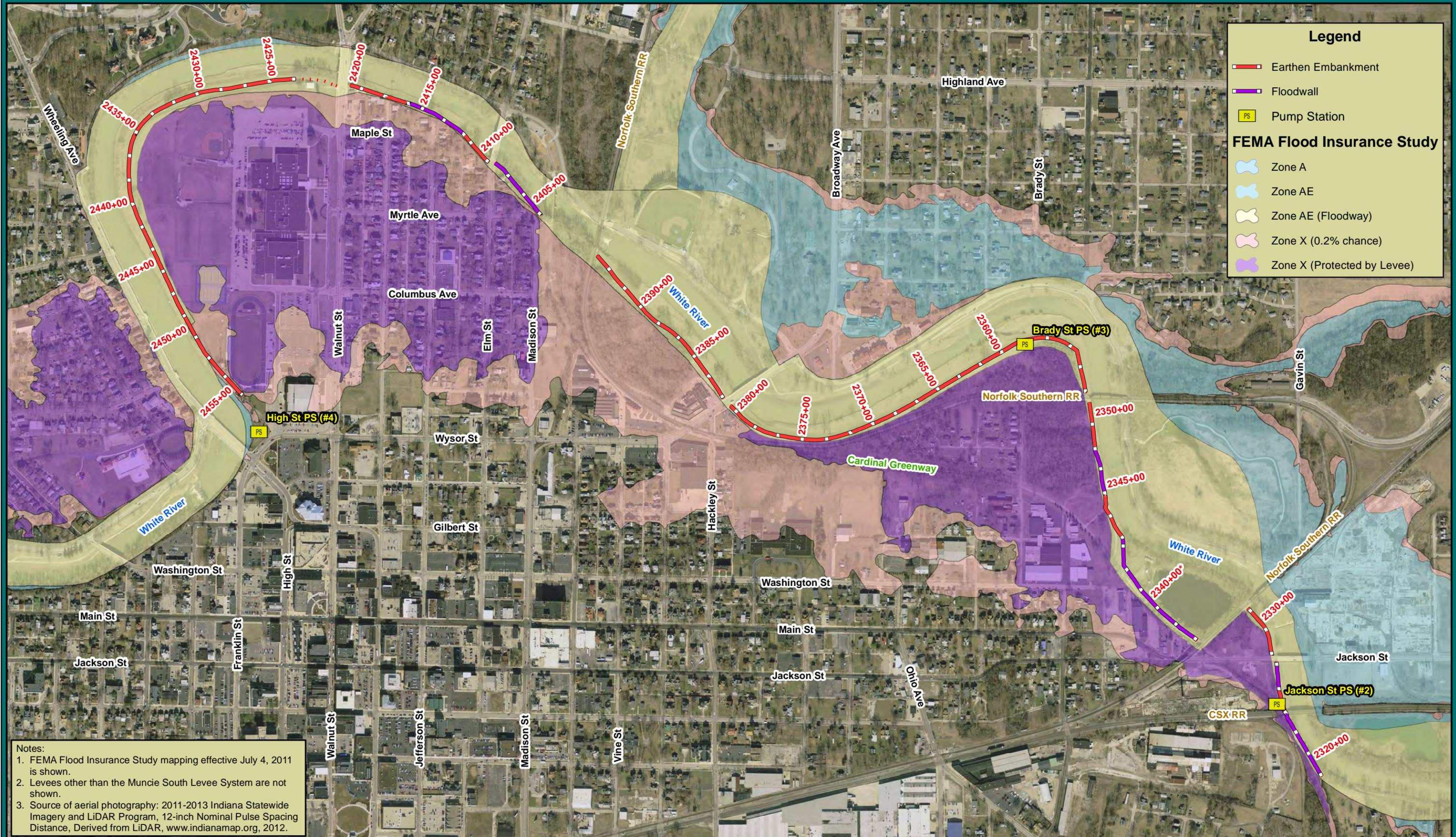
BY	DATE	CHARACTER	REVISIONS
RLM	3-19-40	Added disposal area 'J'	
RLM	2-16-40	Longside R.R.W. revised Sta. 318+56 to Sta. 322+00	
RLM	2-16-40	Alignment & Landside R.R.W. revised Sta. 335+67 to 342+88.57	
WBF	11-4-39	MINOR CORRECTIONS	

NO.	DATE	BY	REVISIONS
1	3-19-40	RLM	Added disposal area 'J'
2	2-16-40	RLM	Longside R.R.W. revised Sta. 318+56 to Sta. 322+00
3	2-16-40	RLM	Alignment & Landside R.R.W. revised Sta. 335+67 to 342+88.57
4	11-4-39	WBF	MINOR CORRECTIONS

APPROVAL, RECOMMENDED:  
SENIOR ENGINEER  
APPROVED:  
LT. COL. CORPS OF ENGINEERS  
AS BUILT REVISIONS

AS BUILT W7-12-2117





### Legend

- Earthen Embankment
- Floodwall
- PS Pump Station

### FEMA Flood Insurance Study

- Zone A
- Zone AE
- Zone AE (Floodway)
- Zone X (0.2% chance)
- Zone X (Protected by Levee)

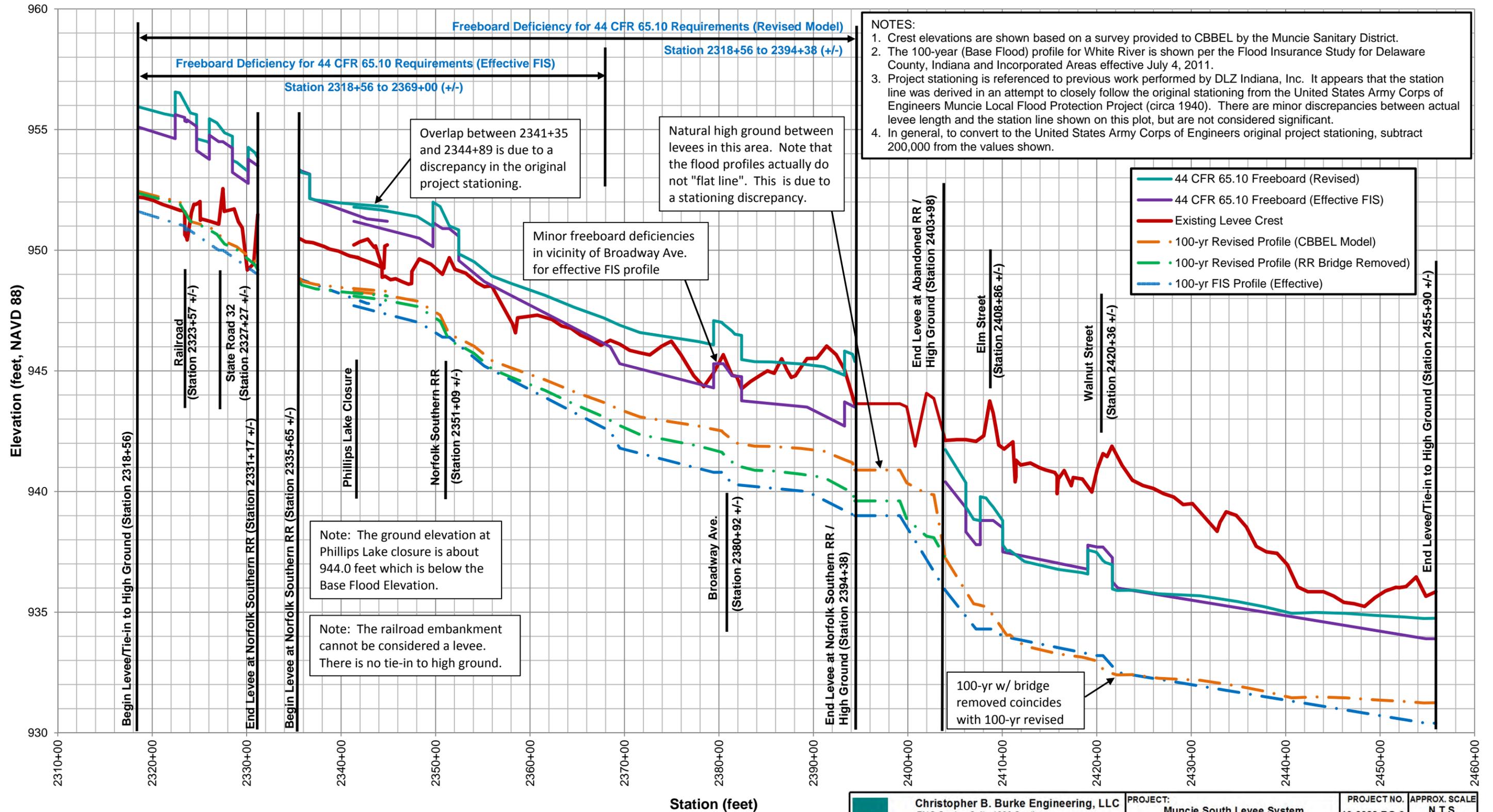
Notes:

1. FEMA Flood Insurance Study mapping effective July 4, 2011 is shown.
2. Levees other than the Muncie South Levee System are not shown.
3. Source of aerial photography: 2011-2013 Indiana Statewide Imagery and LiDAR Program, 12-inch Nominal Pulse Spacing Distance, Derived from LiDAR, www.indianamap.org, 2012.



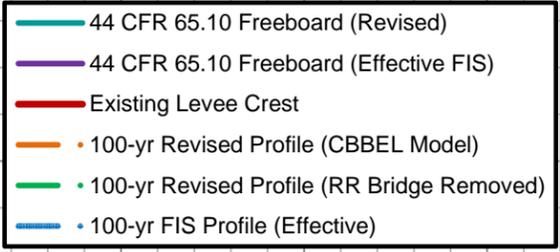
**Christopher B. Burke Engineering, LLC**  
 PNC Center, Suite 1368 South  
 115 West Washington Street  
 Indianapolis, Indiana 46204  
 (t) 317.266.8000 (f) 317.632.3306

PROJECT: <b>Muncie South Levee System FEMA Certification Feasibility Study</b>	PROJECT NO. 13-0028 BG 3	APPROX. SCALE 1" = 600'
TITLE: <b>Effective FEMA Flood Insurance Study Mapping</b>	DATE: 01/2016	EXHIBIT 2

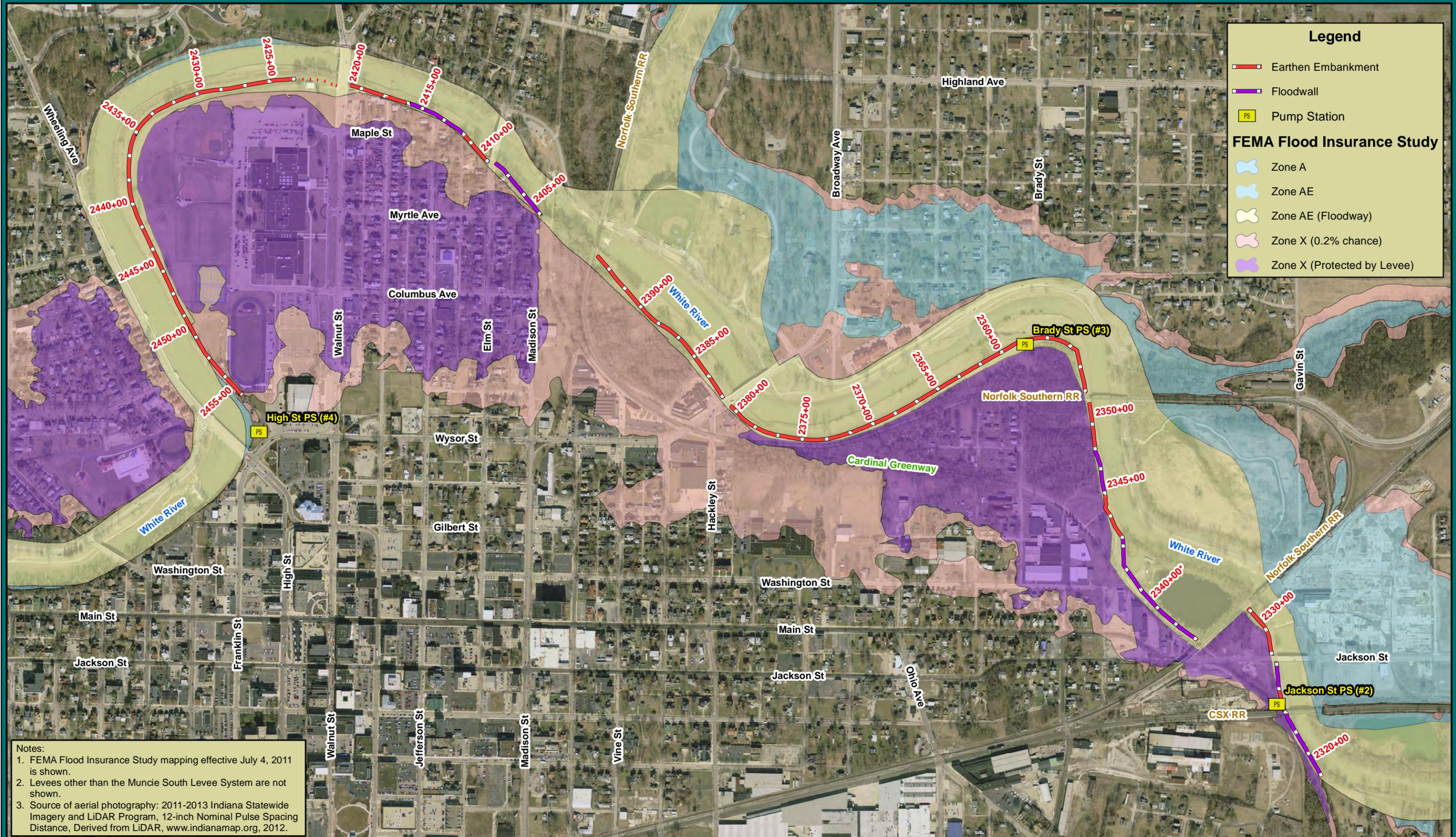


**NOTES:**

1. Crest elevations are shown based on a survey provided to CBBEL by the Muncie Sanitary District.
2. The 100-year (Base Flood) profile for White River is shown per the Flood Insurance Study for Delaware County, Indiana and Incorporated Areas effective July 4, 2011.
3. Project stationing is referenced to previous work performed by DLZ Indiana, Inc. It appears that the station line was derived in an attempt to closely follow the original stationing from the United States Army Corps of Engineers Muncie Local Flood Protection Project (circa 1940). There are minor discrepancies between actual levee length and the station line shown on this plot, but are not considered significant.
4. In general, to convert to the United States Army Corps of Engineers original project stationing, subtract 200,000 from the values shown.



 <b>Christopher B. Burke Engineering, LLC</b> PNC Center, Suite 1368 South 115 West Washington Street Indianapolis, Indiana 46204 (t) 317.266.8000 (f) 317.632.3306	<b>PROJECT:</b> Muncie South Levee System FEMA Certification Feasibility Study	<b>PROJECT NO.:</b> 13-0028 BG 3	<b>APPROX. SCALE:</b> N.T.S.
	<b>TITLE:</b> Freeboard Analysis Profiles		<b>DATE:</b> 01/2016
	<b>EXHIBIT 3</b>		



### Legend

- Earthen Embankment
- Floodwall
- PS Pump Station

### FEMA Flood Insurance Study

- Zone A
- Zone AE
- Zone AE (Floodway)
- Zone X (0.2% chance)
- Zone X (Protected by Levee)

Notes:

1. FEMA Flood Insurance Study mapping effective July 4, 2011 is shown.
2. Levees other than the Muncie South Levee System are not shown.
3. Source of aerial photography: 2011-2013 Indiana Statewide Imagery and LiDAR Program, 12-inch Nominal Pulse Spacing Distance, Derived from LiDAR, www.indianamap.org, 2012.



**Christopher B. Burke Engineering, LLC**  
 PNC Center, Suite 1368 South  
 115 West Washington Street  
 Indianapolis, Indiana 46204  
 (t) 317.266.8000 (f) 317.632.3306

PROJECT: <b>Muncie South Levee System FEMA Certification Feasibility Study</b>	PROJECT NO. 13-0028 BG 3	APPROX. SCALE 1" = 600'
TITLE: <b>Effective FEMA Flood Insurance Study Mapping</b>	DATE: 01/2016	EXHIBIT 2

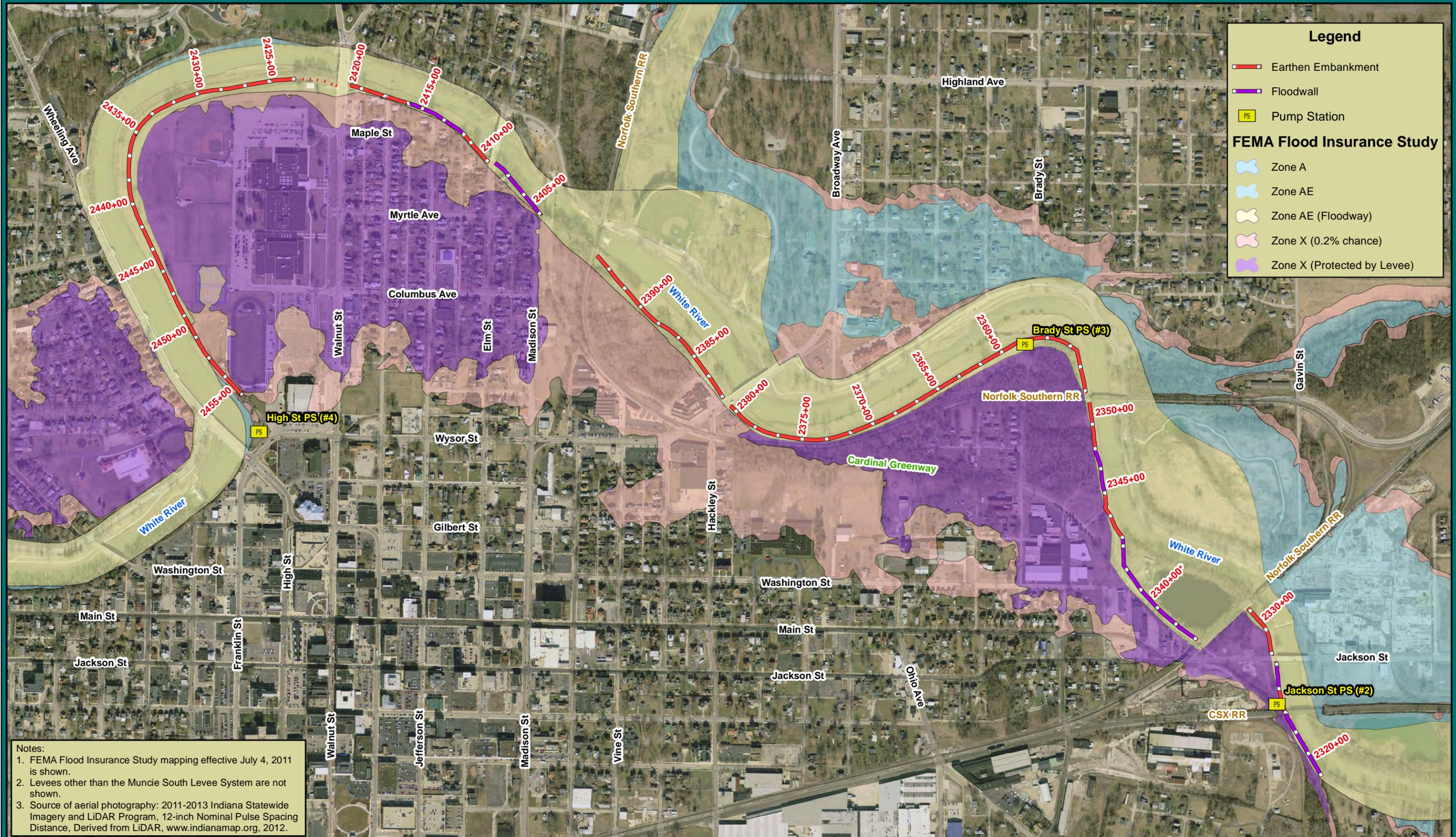




Google earth

Roads





### Legend

- ▬ Earthen Embankment
- ▬ Floodwall
- PS Pump Station

### FEMA Flood Insurance Study

- Zone A
- Zone AE
- Zone AE (Floodway)
- Zone X (0.2% chance)
- Zone X (Protected by Levee)

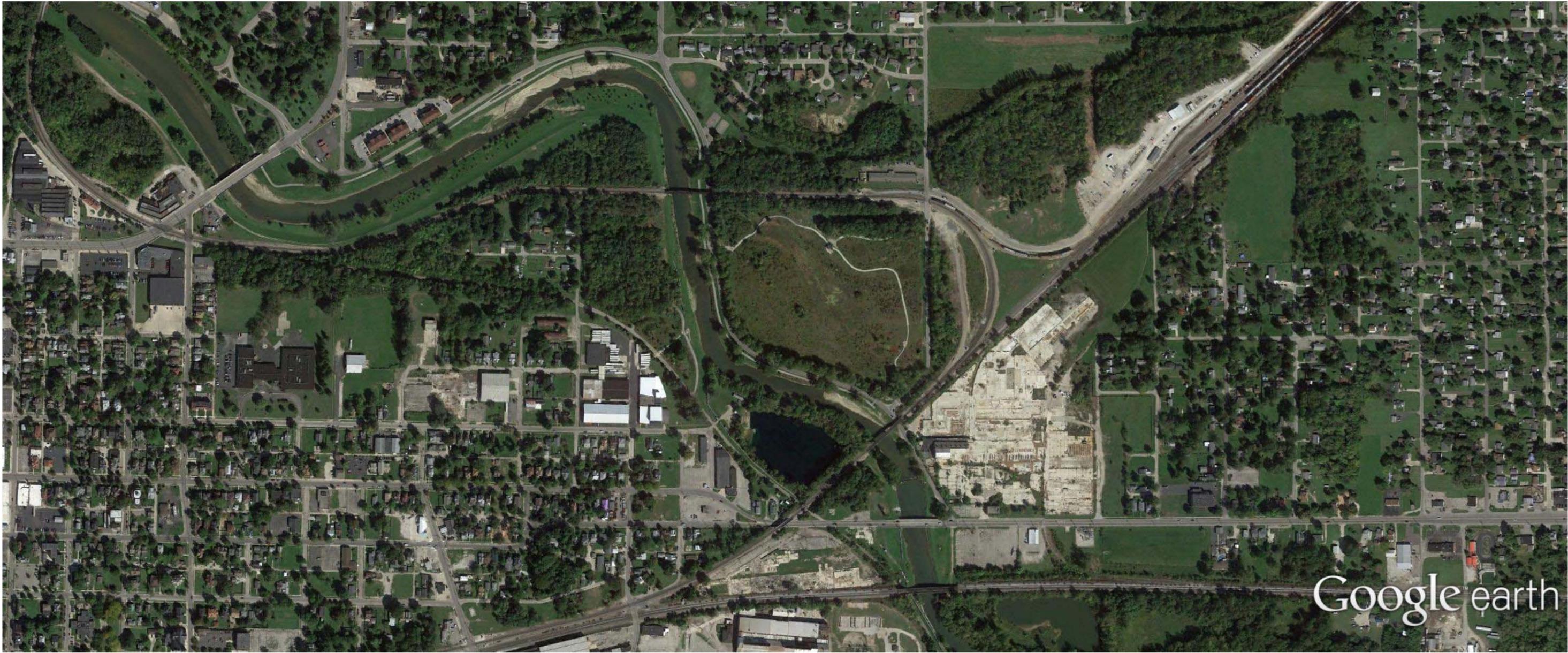
Notes:

1. FEMA Flood Insurance Study mapping effective July 4, 2011 is shown.
2. Levees other than the Muncie South Levee System are not shown.
3. Source of aerial photography: 2011-2013 Indiana Statewide Imagery and LiDAR Program, 12-inch Nominal Pulse Spacing Distance, Derived from LiDAR, www.indianamap.org, 2012.



**Christopher B. Burke Engineering, LLC**  
 PNC Center, Suite 1368 South  
 115 West Washington Street  
 Indianapolis, Indiana 46204  
 (t) 317.266.8000 (f) 317.632.3306

PROJECT: <b>Muncie South Levee System FEMA Certification Feasibility Study</b>	PROJECT NO. 13-0028 BG 3	APPROX. SCALE 1" = 600'
TITLE: <b>Effective FEMA Flood Insurance Study Mapping</b>	DATE: 01/2016	EXHIBIT 2



Google earth

Roads

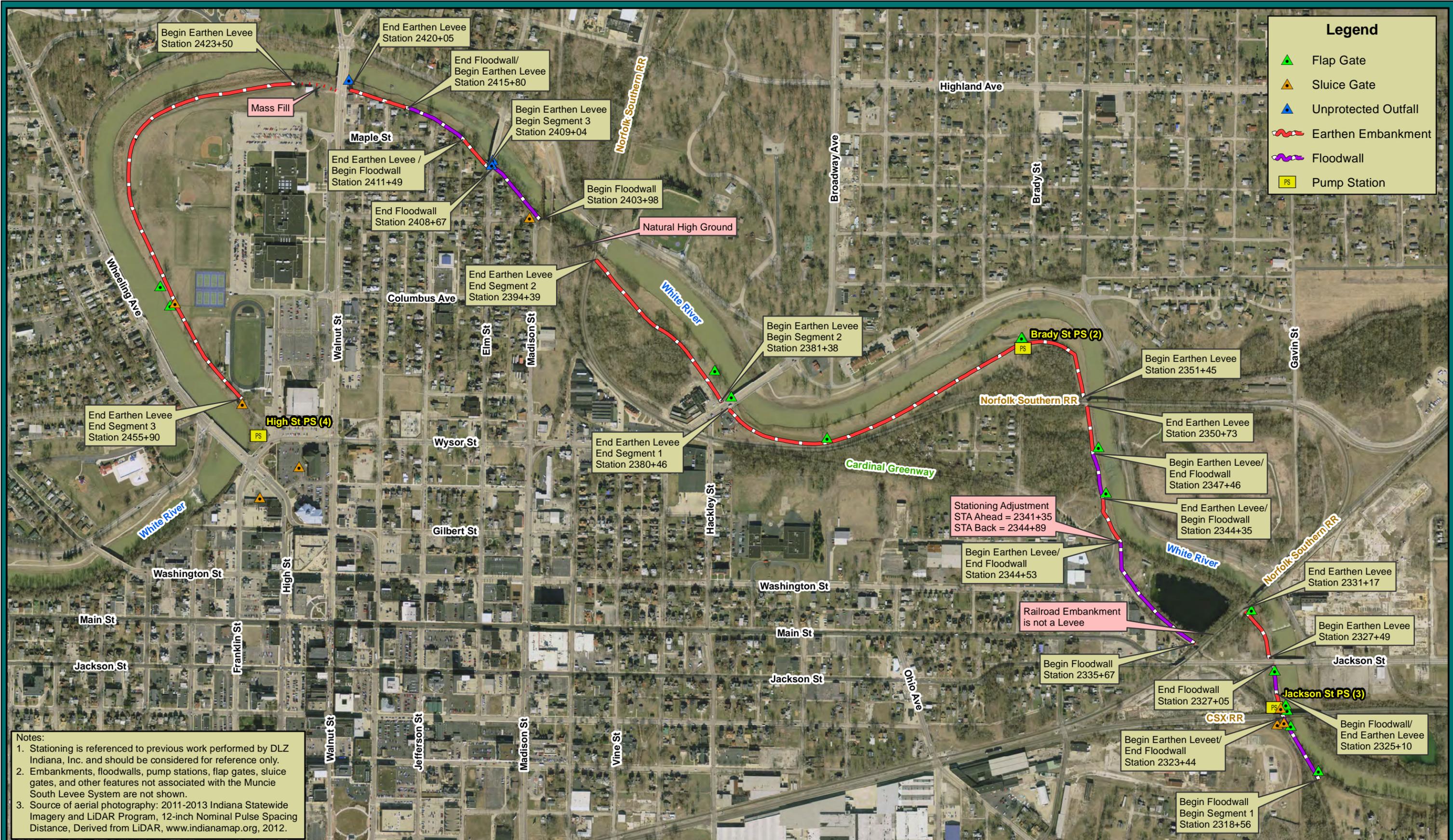


# MIDDLETOWN

**A STUDY  
IN MODERN  
AMERICAN  
CULTURE**

**Robert S. Lynd  
and Helen Merrell Lynd**

A Harvest Book



### Legend

- Flap Gate
- Sluice Gate
- Unprotected Outfall
- Earthen Embankment
- Floodwall
- Pump Station

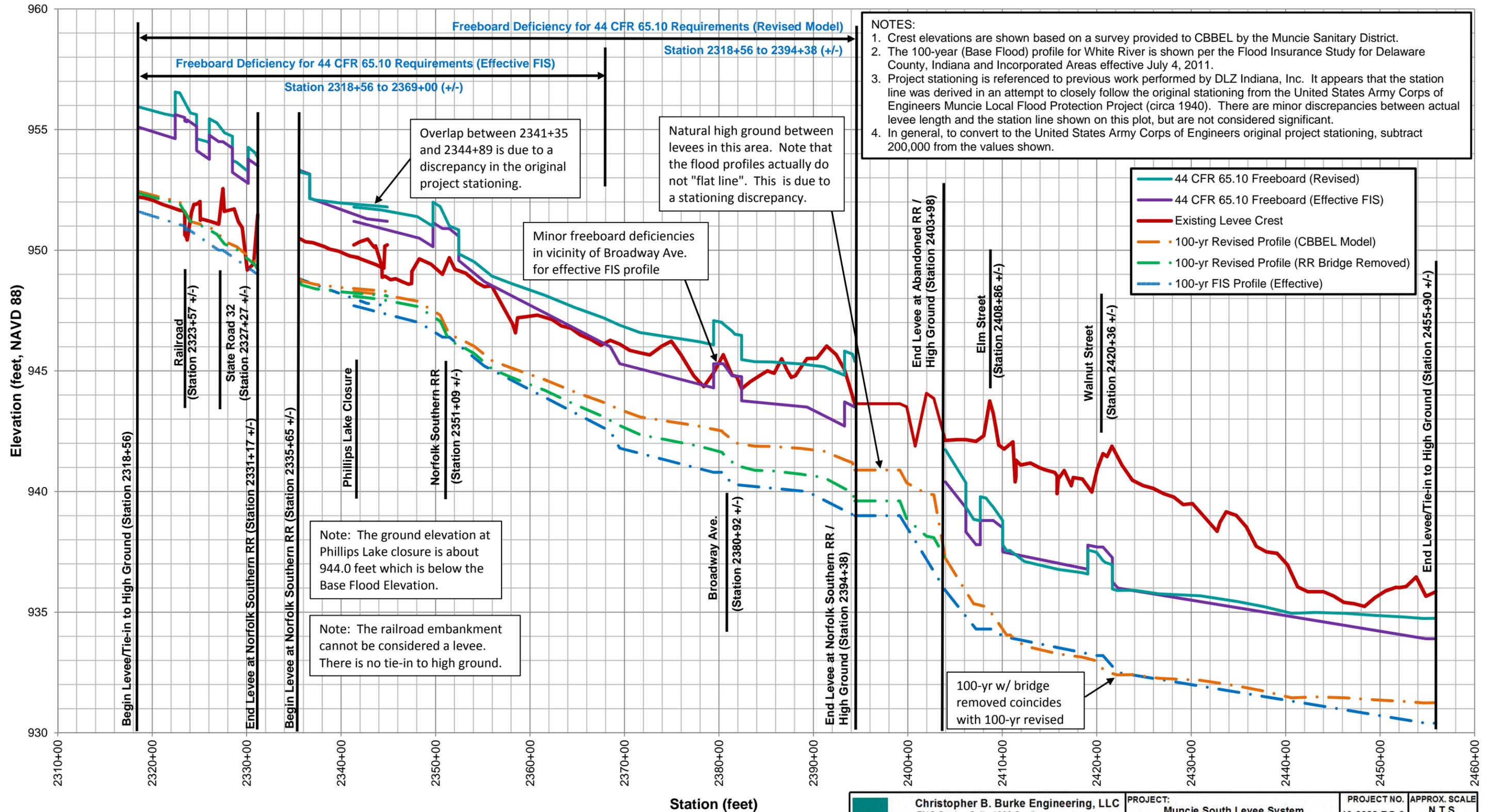
Notes:

1. Stationing is referenced to previous work performed by DLZ Indiana, Inc. and should be considered for reference only.
2. Embankments, floodwalls, pump stations, flap gates, sluice gates, and other features not associated with the Muncie South Levee System are not shown.
3. Source of aerial photography: 2011-2013 Indiana Statewide Imagery and LiDAR Program, 12-inch Nominal Pulse Spacing Distance, Derived from LiDAR, www.indianamap.org, 2012.



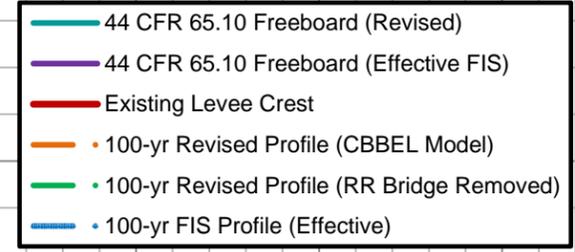
**Christopher B. Burke Engineering, LLC**  
 PNC Center, Suite 1368 South  
 115 West Washington Street  
 Indianapolis, Indiana 46204  
 (t) 317.266.8000 (f) 317.632.3306

PROJECT: <b>Muncie South Levee System FEMA Certification Feasibility Study</b>	PROJECT NO. 13-0028 BG 3	APPROX. SCALE 1" = 600'
TITLE: <b>Muncie South Levee System Map</b>	DATE: 06/2015	EXHIBIT 1



**NOTES:**

1. Crest elevations are shown based on a survey provided to CBBEL by the Muncie Sanitary District.
2. The 100-year (Base Flood) profile for White River is shown per the Flood Insurance Study for Delaware County, Indiana and Incorporated Areas effective July 4, 2011.
3. Project stationing is referenced to previous work performed by DLZ Indiana, Inc. It appears that the station line was derived in an attempt to closely follow the original stationing from the United States Army Corps of Engineers Muncie Local Flood Protection Project (circa 1940). There are minor discrepancies between actual levee length and the station line shown on this plot, but are not considered significant.
4. In general, to convert to the United States Army Corps of Engineers original project stationing, subtract 200,000 from the values shown.



 <b>Christopher B. Burke Engineering, LLC</b> PNC Center, Suite 1368 South 115 West Washington Street Indianapolis, Indiana 46204 (t) 317.266.8000 (f) 317.632.3306	<b>PROJECT:</b> Muncie South Levee System FEMA Certification Feasibility Study	<b>PROJECT NO.:</b> 13-0028 BG 3	<b>APPROX. SCALE:</b> N.T.S.
	<b>TITLE:</b> Freeboard Analysis Profiles		<b>DATE:</b> 01/2016
	<b>EXHIBIT 3</b>		



Sec 10 T 20  
 Sec 11 T 20

GENERAL NOTES	
1.	THIS PLAN IS FOR THE BRIDGE AND APPROACHES AS SHOWN.
2.	THE BRIDGE IS TO BE CONSTRUCTED OF STEEL AND CONCRETE.
3.	THE APPROACHES ARE TO BE CONSTRUCTED OF CONCRETE.
4.	THE BRIDGE IS TO BE OPEN TO NAVIGATION.
5.	THE BRIDGE IS TO BE OPEN TO TRAFFIC.
6.	THE BRIDGE IS TO BE OPEN TO RAILROAD TRAFFIC.
7.	THE BRIDGE IS TO BE OPEN TO POWER LINES.
8.	THE BRIDGE IS TO BE OPEN TO UTILITY LINES.
9.	THE BRIDGE IS TO BE OPEN TO WATER LINES.
10.	THE BRIDGE IS TO BE OPEN TO GAS LINES.
11.	THE BRIDGE IS TO BE OPEN TO TELEPHONE LINES.
12.	THE BRIDGE IS TO BE OPEN TO CABLE LINES.
13.	THE BRIDGE IS TO BE OPEN TO LIGHTNING RODS.
14.	THE BRIDGE IS TO BE OPEN TO FLOOD LIGHTS.
15.	THE BRIDGE IS TO BE OPEN TO SIGNALS.
16.	THE BRIDGE IS TO BE OPEN TO BELL SIGNALS.
17.	THE BRIDGE IS TO BE OPEN TO TELEGRAPH LINES.
18.	THE BRIDGE IS TO BE OPEN TO TELEVISION LINES.
19.	THE BRIDGE IS TO BE OPEN TO RADIO LINES.
20.	THE BRIDGE IS TO BE OPEN TO TELEPHONE EXCHANGES.
21.	THE BRIDGE IS TO BE OPEN TO TELEPHONE CENTRAL OFFICES.
22.	THE BRIDGE IS TO BE OPEN TO TELEPHONE SWITCHES.
23.	THE BRIDGE IS TO BE OPEN TO TELEPHONE CABLES.
24.	THE BRIDGE IS TO BE OPEN TO TELEPHONE WIRING.
25.	THE BRIDGE IS TO BE OPEN TO TELEPHONE EQUIPMENT.
26.	THE BRIDGE IS TO BE OPEN TO TELEPHONE MATERIALS.
27.	THE BRIDGE IS TO BE OPEN TO TELEPHONE LABORERS.
28.	THE BRIDGE IS TO BE OPEN TO TELEPHONE TOOLS.
29.	THE BRIDGE IS TO BE OPEN TO TELEPHONE SUPPLIES.
30.	THE BRIDGE IS TO BE OPEN TO TELEPHONE SERVICES.
31.	THE BRIDGE IS TO BE OPEN TO TELEPHONE CONTRACTORS.
32.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ENGINEERS.
33.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ARCHITECTS.
34.	THE BRIDGE IS TO BE OPEN TO TELEPHONE SURVEYORS.
35.	THE BRIDGE IS TO BE OPEN TO TELEPHONE MECHANICAL ENGINEERS.
36.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTRICAL ENGINEERS.
37.	THE BRIDGE IS TO BE OPEN TO TELEPHONE CIVIL ENGINEERS.
38.	THE BRIDGE IS TO BE OPEN TO TELEPHONE CHEMICAL ENGINEERS.
39.	THE BRIDGE IS TO BE OPEN TO TELEPHONE METALLURGICAL ENGINEERS.
40.	THE BRIDGE IS TO BE OPEN TO TELEPHONE AERONAUTICAL ENGINEERS.
41.	THE BRIDGE IS TO BE OPEN TO TELEPHONE AGRICULTURAL ENGINEERS.
42.	THE BRIDGE IS TO BE OPEN TO TELEPHONE MARINE ENGINEERS.
43.	THE BRIDGE IS TO BE OPEN TO TELEPHONE MINING ENGINEERS.
44.	THE BRIDGE IS TO BE OPEN TO TELEPHONE FUEL ENGINEERS.
45.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ICE ENGINEERS.
46.	THE BRIDGE IS TO BE OPEN TO TELEPHONE REFRIGERATION ENGINEERS.
47.	THE BRIDGE IS TO BE OPEN TO TELEPHONE HEATING ENGINEERS.
48.	THE BRIDGE IS TO BE OPEN TO TELEPHONE SANITARY ENGINEERS.
49.	THE BRIDGE IS TO BE OPEN TO TELEPHONE VENTILATION ENGINEERS.
50.	THE BRIDGE IS TO BE OPEN TO TELEPHONE LIGHTING ENGINEERS.
51.	THE BRIDGE IS TO BE OPEN TO TELEPHONE SOUND ENGINEERS.
52.	THE BRIDGE IS TO BE OPEN TO TELEPHONE VIBRATION ENGINEERS.
53.	THE BRIDGE IS TO BE OPEN TO TELEPHONE OPTICS ENGINEERS.
54.	THE BRIDGE IS TO BE OPEN TO TELEPHONE MECHANICAL VIBRATION ENGINEERS.
55.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ACOUSTICS ENGINEERS.
56.	THE BRIDGE IS TO BE OPEN TO TELEPHONE OPTICAL ENGINEERS.
57.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROMAGNETIC ENGINEERS.
58.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROSTATIC ENGINEERS.
59.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTRODYNAMIC ENGINEERS.
60.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROTECHNICAL ENGINEERS.
61.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSICAL ENGINEERS.
62.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROCHEMICAL ENGINEERS.
63.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROBIOLOGICAL ENGINEERS.
64.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPSYCHOLOGICAL ENGINEERS.
65.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSIOLOGICAL ENGINEERS.
66.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSIOLOGICAL ENGINEERS.
67.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSIOLOGICAL ENGINEERS.
68.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSIOLOGICAL ENGINEERS.
69.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSIOLOGICAL ENGINEERS.
70.	THE BRIDGE IS TO BE OPEN TO TELEPHONE ELECTROPHYSIOLOGICAL ENGINEERS.

DELAWARE CO, IND.

NO.	DESCRIPTION	AMOUNT	TOTAL
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

# Silver Jackets Overview

Brandon R. Brummett, P.E., PMP

Outreach Coordinator

US Army Corps of Engineers Louisville District



US Army Corps of Engineers  
**BUILDING STRONG**®



**U.S. ARMY**



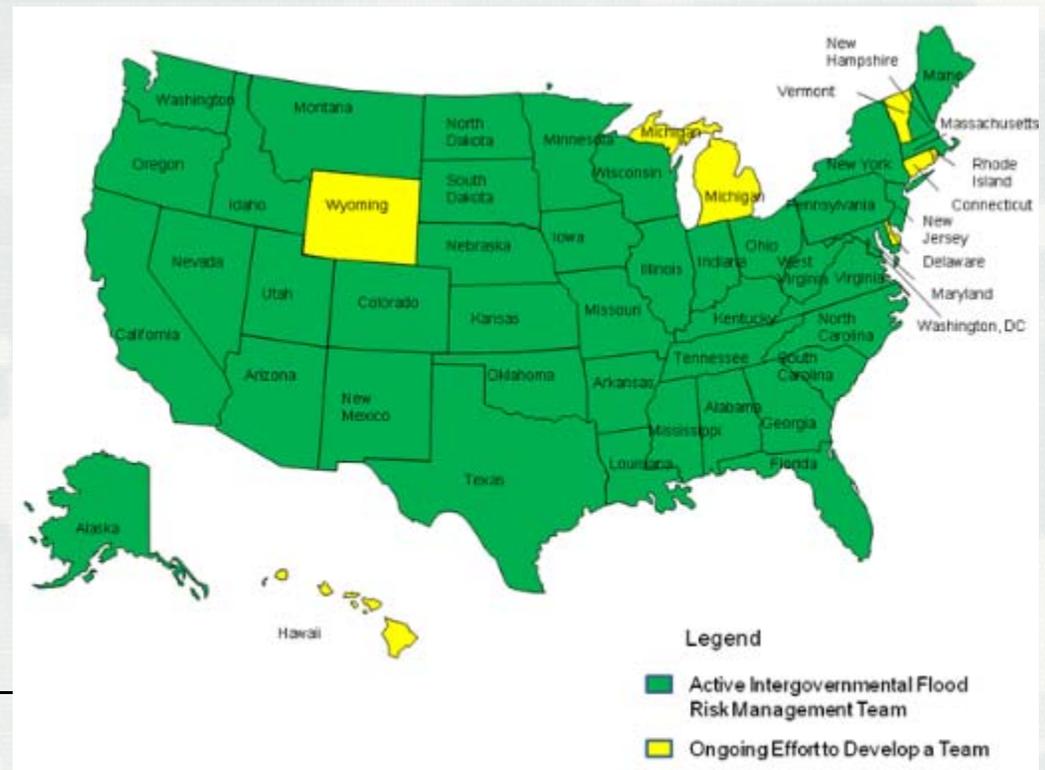
# What is/are Silver Jackets?



**BUILDING STRONG®**

# What is/are Silver Jackets?

- State-Led ( Voice of our ~~Customers~~ *Partners*)
  - States set priorities for Interagency Federal support
- Interagency Method of Delivery ( MOD )
  - Collaboration across agencies / levels of government
  - Leverage resources: talent, data, funding
- Continuous, not project-specific
- Life-Cycle Risk Management
- Watershed Perspective
  - State teams facilitate regional, state-to-state flood risk management



U.S. ARMY

# Team History

- Ohio Silver Jackets Established 2005
  - ▶ Lead is shared between Ohio Emergency Management and Ohio Department of Natural Resources
- Indiana Silver Jackets Established 2006
  - ▶ Lead is Indiana Department of Homeland Security
- Kentucky Silver Jackets Established 2009
  - ▶ Lead is Kentucky Division of Water
- Illinois Silver Jackets Established 2008/2009
  - ▶ Lead is the Illinois Emergency Management Agency



U.S. ARMY



BUILDING STRONG®

# Participants

## Federal

US Army Corps of Engineers  
Federal Emergency Management Agency  
Natural Resources Conservation Service  
National Oceanic and Atmospheric Administration

US Geological Survey  
US Housing and Urban Development  
National Weather Service

## State

Department of Homeland Security  
Department of Environmental Management  
Transportation Cabinet / DOT  
National Guard

Department of Natural Resources  
Division of Water  
Emergency Management

## Other

Academia/Universities  
River Basin Commissions

ASFPM Chapters  
Local Governments



**BUILDING STRONG®**

# Federal and National Partners



Many Agencies



One Solution



# State, Local, and Educational Partners



# Kentucky Silver Jackets



# Silver Jackets Efforts

## ▪ Inundation Maps

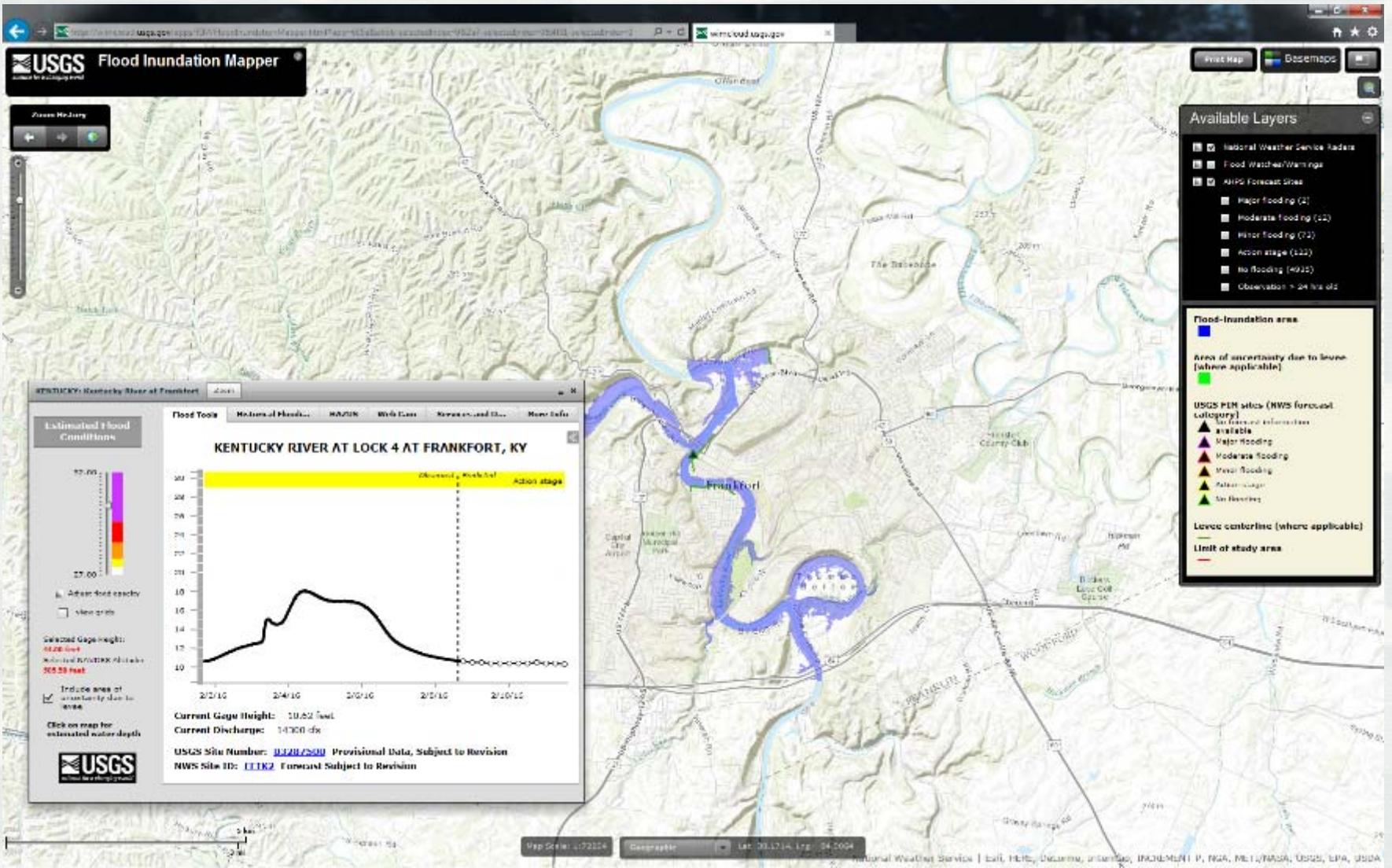
- ▶ Created a model that paired up technologies not normally used together to identify flood areas and when those areas would be impacted through the use of real time river gage data.
- ▶ Model successfully calibrated against actual river flow data.
- ▶ Outputs can be integrated with HAZUS damage model, GIS, and local Property Valuation Administration (PVA) databases.
- ▶ Real time access for citizens
- ▶ Cost typically less than \$20K per stream mile



U.S. ARMY



BUILDING STRONG®



**U.S. ARMY**



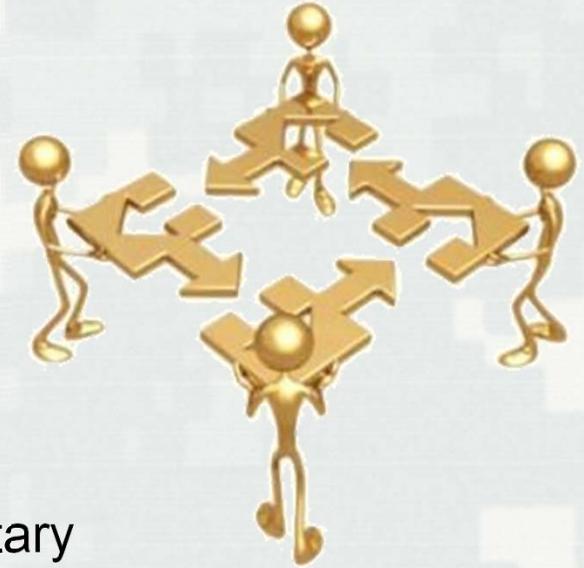
# Silver Jackets Efforts

- Statewide LiDAR
- Interagency Disaster Guide for KY
  - ▶ Utilizing other States Guides as templates (PA, TN)
- Louisville Levee System EAP
- North Branch Elkhart River Report



# Silver Jackets Efforts

- Orange County Indiana H&H
- 1913 Flood Outreach
  - ▶ Website
  - ▶ Signage
  - ▶ Museum Exhibit
  - ▶ Regional Emmy award Winning Documentary
- Fluvial Erosion Hazards Program in Indiana
- Non Levee Embankment ID



U.S. ARMY



BUILDING STRONG®

**"STAY AFLOAT"  
FLOOD AWARENESS CAMPAIGN  
CHILDREN'S ACTIVITY BOOK**



**INDIANA DEPARTMENT  
OF HOMELAND SECURITY**

# Activity Books



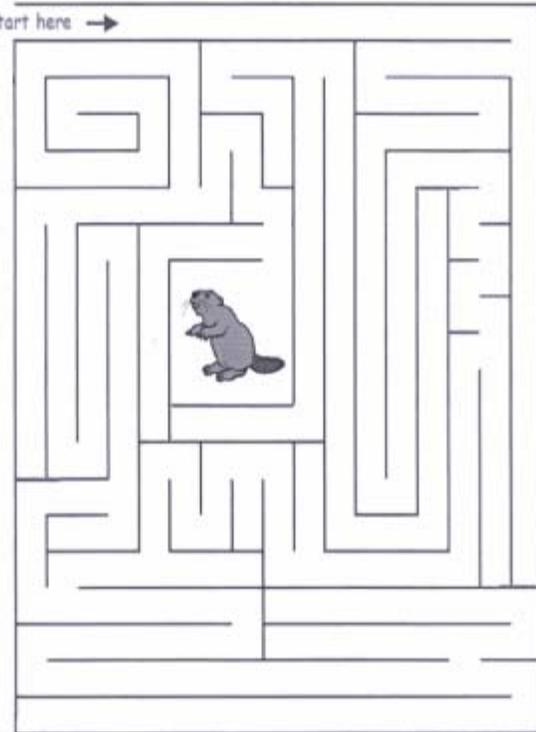
Help!!! The state animal has run off!  
You can help... draw a path through  
the maze to help me find it.

Start here →

Use your mouse to  
trace the route or  
print this page and  
mark with a pencil.

Can't find it either?

Click here  
for the path.

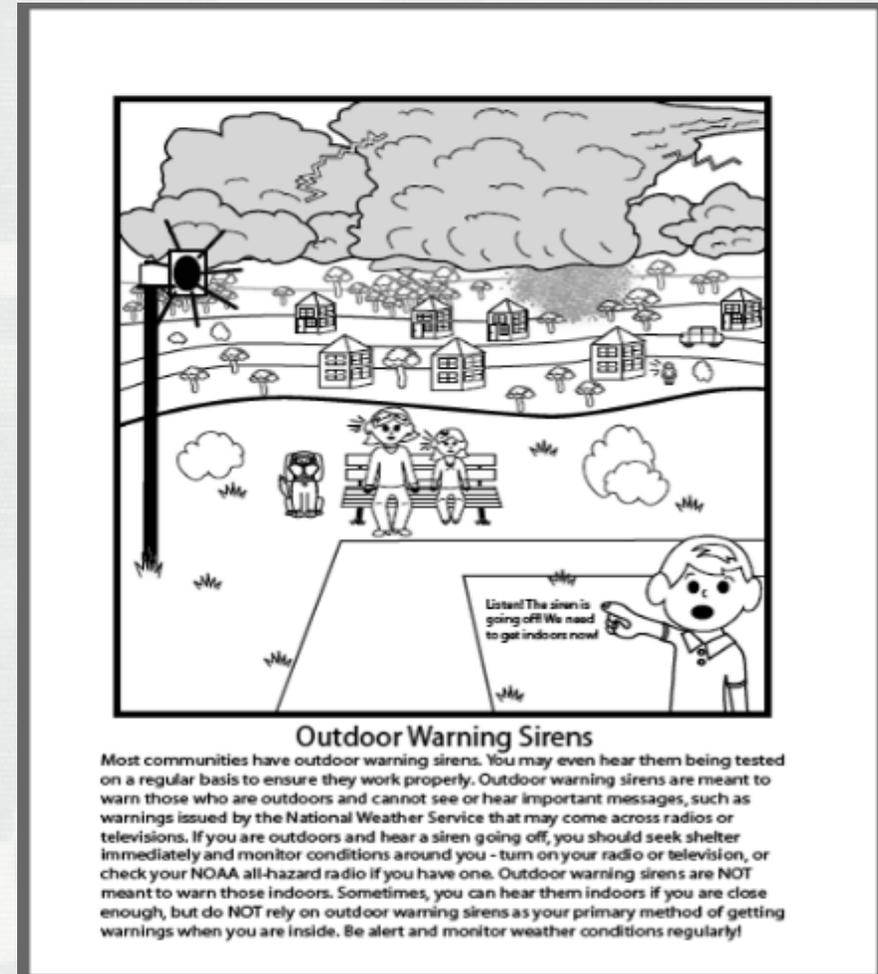
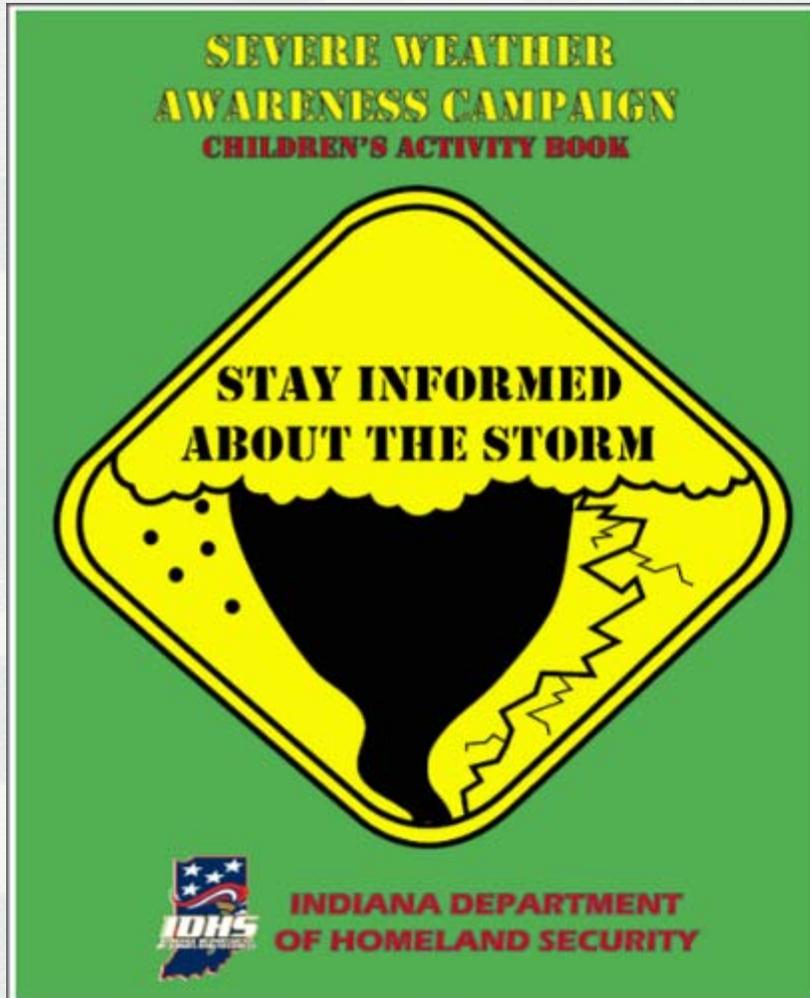


**U.S. ARMY**



®

# Activity Books

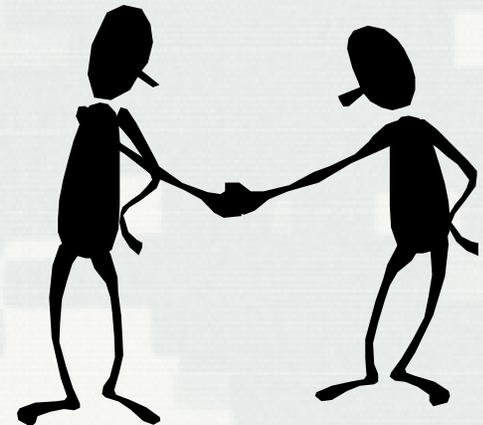


U.S. ARMY



# Silver Jackets Efforts

- Update to the State Hazard Mitigation Plans
  - ▶ Participation on State Hazard Mitigation Teams
- Enhanced ***relationships*** between federal and state agencies
  - ▶ Better responses from agencies
  - ▶ Improved Cooperation
  - ▶ Better overall agency image
  - ▶ Unified voice



# *Questions?*

Contact Information:

Brandon R. Brummett, PE, PMP

Louisville District Outreach Coordinator

502-315-6883 office

502-649-3190 blackberry

[brandon.r.brummett@usace.army.mil](mailto:brandon.r.brummett@usace.army.mil)

