

Appendix B

Consultation and Coordination with Regulatory & Review Agencies

**Vincennes Levee Modification & Wastewater Infrastructure Project
(George Rogers Clark National Historical Park)
Early Coordination Packet Sent to the Following Agencies:**

Christie Stanifer
Environmental Coordinator
IDNR, Div. of Fish & Wildlife
402 W. Washington St.
Rm W-264
Indianapolis, IN 46204-2641
****EMAIL TO:**
environmentalreview@dnr.in.gov

Department of the Army
Louisville District, ACE
ED-T-G; M. Whelan
PO Box 59
Louisville, KY 40201-0059
****EMAIL TO:**
Matthew.S.Whelan@us.army.mil

Ms. Jane Hardisty
State Conservationist NRCS
6013 Lakeside Boulevard
Indianapolis, IN 46278

Mr. Scott Pruitt
Field Supervisor
U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, IN 47403-2121

Ms. Nancy Hasenmueller
Indiana Geological Survey
**** EMAIL TO:**
IGSenvir@indiana.edu

IDEM
On-Line Submission
http://www.in.gov/idem/enviroreview/hwy_earlyenviroreview.html

Chief, Groundwater Section
Indiana Department of
Environmental Management
100 N. Senate Avenue
Indianapolis, IN 46204
http://www.in.gov/idem/files/wellhead_proxform.pdf
**** EMAIL TO:**
jsulliva@idem.IN.gov

City of Vincennes
Attention: Mayor Joe Yockum
201 Vigo St.
Vincennes, IN 47591
****EMAIL TO:**
jyochum@vincennes.org

City of Vincennes Water Utilities
Attention: Kirk Bouchie
403 Busseron St.
Vincennes, IN 47591
****EMAIL TO:**
kbouchie@vnutilities.com

City of Vincennes Engineering Dept
Attention: John P. Sprague, P.E.
201 Vigo St.
Vincennes, IN 47591

City of Vincennes Streets &
Sanitation
Attention: Bryce Anderson
1600 Bayou Street
Vincennes, IN 47591

Brevoort Levee Conservancy District
Attention: Rex Marchino
PO Box 215
Vincennes, IN 47591
****EMAIL TO:**
ram@echowireless.net

Knox County Soil & Water
Conservation District
2015 Hart St.
Vincennes, IN 47591

Knox County Drainage Board
101 N. 7th St.
Vincennes, IN 47591

Knox County Surveyor
Attention: Richard A. Vermillion, PLS
111 N. 7th St., Suite 12
Vincennes, IN 47591

INDOT Vincennes District
3650 S. US Highway 41
Vincennes, IN 47591

green • 3



Historic Fountain Square
1104 Prospect Street
Indianapolis, Indiana 46203

p 317.634.4110
f 866.422.2046 (toll free)

www.green3studio.com

Environmental Design
Landscape Architecture
Grant Writing

September 30, 2013

Dear Environmental Reviewer,

An Environmental Assessment (EA) is being prepared for the National Park Service (NPS) for the Vincennes Levee & Wastewater Infrastructure Rehabilitation project in George Rogers Clark National Historical Park (GERO Park) in the City of Vincennes, Indiana. The partnering agency and project sponsor is the City of Vincennes.

The purpose of the Vincennes Levee and Wastewater Infrastructure Rehabilitation project is to address deficiencies and desired modifications in flood protection along the Wabash River and within the GERO Park boundaries. Also proposed in this project is the rehabilitation of the B&O railroad corridor (currently owned by CSX Railroad) located between the Wabash River and the George Rogers Clark Memorial building. The purpose of this part of the overall project is to rehabilitate the area to the standards of the existing cultural landscape and to complete the area, as close as practical, to the original intent of the George Rogers Clark Memorial and landscape designers.

This project will also address the aging condition of wastewater infrastructure currently located along the southeastern edge of the George Rogers Clark Memorial building, generally following the sidewalk located there. There is a need to address the condition of this wastewater infrastructure in order to prevent future damage to surrounding roadways and to GERO Park, and to prevent adverse impacts to the local environment in the event of contamination due to infrastructure failure.

Information specific to your agency's area of expertise concerning the effects of the project should be forwarded to Erin Mulryan, Green 3, 1104 Prospect Street, Indianapolis, IN 46203. If you have any questions or comments regarding this request, please contact Erin at (317) 634-4110 or direct e-mail to erin@green3studio.com. Your response is requested within 30 days.

Thank you for your assistance.

Sincerely,

Erin Mulryan

Vincennes Levee & Wastewater Infrastructure Rehabilitation project in George Rogers Clark National Historical Park

Project Description

Purpose & Need

The National Park Service (NPS) is preparing an Environmental Assessment (EA) to evaluate the potential impacts associated with the modification of the Brevoort and Vincennes levees and the repair of sanitary sewer infrastructure in the City of Vincennes, Indiana. The project is located in George Rogers Clark National Historical Park (GERO) in Knox County, Vincennes, Indiana. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) and the Council of Environmental Quality (40 CFR 1500-1508) and the US Department of Interior DO-12 Handbook. This EA provides information on the potential adverse environmental effects to allow the NPS to make an informed decision on the appropriateness of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

The purpose of the Vincennes Levee and Wastewater Infrastructure Rehabilitation project in GERO is to address deficiencies and desired modifications in flood protection along the Wabash River and within the park boundaries. Currently the Brevoort Levee has a temporary closure near Willow Street at the southern end of the park that is inconsistent with current US Army Corps of Engineers (USACE) standard operating procedures. There is also a temporary closure at Main Street, near Culbertson Boulevard and the Wabash River, which is part of the Vincennes Levee system. These closures are located at the B&O Railroad corridor (currently owned and controlled by CSX) that generally parallels the Wabash River and are shut during flood events to protect this portion of the city from flood damage. Also, the Brevoort Levee system begins at the southern park property boundary and does not extend into the park, leaving the park and surrounding areas vulnerable to flooding from the Wabash River.

Also proposed in this project is the rehabilitation of the B&O railroad corridor located between the Wabash River and the George Rogers Clark Memorial. The metal rails and wooden ties have been removed and the stone ballast remains in place. The purpose of this part of the overall project is to rehabilitate the area to the standards of the existing cultural landscape and to complete the area, as close as practical, to the original intent of the George Rogers Clark Memorial and landscape designers. This will allow for construction of a sidewalk from the existing stone patio around the Memorial to the Francis Vigo memorial statue and to the walking path along the Wabash River. The railroad right-of-way is being reviewed by CSX for abandonment, at which point the property would revert to the owner of property on either side of the easement; in this case that would be the NPS.

This project also will address the aging condition of wastewater infrastructure currently located along the southeastern edge of the George Rogers Clark Memorial, generally following the sidewalk located there. The infrastructure likely dates to the early 20th century and carries approximately 30% of the city's wastewater, including all wastewater

from Vincennes University. There is a need to address the condition of this wastewater infrastructure in order to prevent future damage to surrounding roadways and to GERO Park and to prevent adverse impacts to the local environment in the event of contamination due to infrastructure failure.

The existing condition of the levee system does not meet the flood protection needs of the City of Vincennes as identified by the USACE. The two closures (at Main and Willow Streets) that are utilized during flood events must be operated manually and require extensive manpower and maintenance to set in place and remove. The aging sanitary sewer line has needed repairs in recent years and is in need of considerable maintenance or replacement in order to prevent future leaks and potential damage to the Park and nearby roadway infrastructure. Also, the ballast of the now out of use B&O Railroad corridor sits below the surrounding grade and reduces the overall visual aesthetics and cultural landscape of GERO Park. Rehabilitating the corridor by removing the ballast and bringing the corridor up to existing surrounding grade level will provide park users with a consistent visual experience with the landscape of the park.

Alternatives

The alternatives and their associated environmental and social impacts to be included in the EA for the levee modifications and sanitary sewer repairs in this project include:

Levee modifications:

No action (“Do Nothing”) alternative: This alternative would require no action. This alternative will include discussion of future conditions and potential flood impacts to environmental, cultural, and social resources if the project were not to take place. Without improvements, the Federal Emergency Management Agency (FEMA) and USACE may decertify the levee systems, potentially affecting federal disaster assistance.

Conversion of temporary Main and Willow Street closures to permanent closures: This alternative involves only constructing concrete closure walls in place of the current temporary closures.

Construction of levee along B&O railroad corridor right-of-way (now out of use): This alternative involves constructing a levee along the existing railroad corridor right-of-way if the corridor were abandoned and ownership was reverted to the NPS. As stated, the metal tracks and wooden ties have been removed for the entire length of the project area. The railroad corridor is located adjacent to the Wabash River, between the river’s eastern bank and the George Rogers Clark Memorial.

Construction of a permanent levee to replace the Main and Willow Street closures and construction of a high ground area within GERO Park: This alternative will involve constructing permanent levee structures to replace the two temporary closures as well as constructing a high ground area in the open space to the southwest of the memorial. **For the purposes of the EA, this alternative is the preferred action.**

Wastewater infrastructure modifications:

No action (“Do Nothing”) alternative: The No Action Alternative would leave the wastewater infrastructure inside the Park boundaries untouched. This alternative represents future conditions, public safety concerns, and potential impacts if the aging sewer line conditions were not addressed.

Open trench cuts to repair/replace aging wastewater infrastructure: In order to access the piping for repair/replacement, this alternative proposes digging up the existing sewer line piping from the current grade level. This would most likely require the removal of several trees and the sidewalk that extends the full length of the Park. Because the Old Cathedral “French and Indian” Cemetery lies directly adjacent to the sanitary sewer line, a Cemetery Plan may be required to delineate the boundaries of this cemetery in accordance with Indiana Department of Natural Resources Division of Historic Preservation and Archeology regulations.

Pipe bursting technique: This alternative would involve no physical disturbance above ground. The technique involves the insertion of a conically shaped tool (bursting head) into the old pipe, using existing manholes for access, forcing fragments of the old pipe into the surrounding soil. At the same time, a new pipe is pulled or pushed in behind the bursting head. The rear of the bursting head is connected to the new pipe, while its front end is connected to a cable or pulling rod. The bursting head and the new pipe are launched from the insertion pit, and the cable or pulling rod is pulled from the reception pit. The cable/rod pull together with the shape of the bursting head keeps the head following the existing pipe.

Trenchless repairs to aging wastewater infrastructure: This alternative would involve no physical disturbance above ground; liners or other methods would be installed inside the existing piping using existing manholes for access. **For the purposes of the EA, this alternative is the preferred action.**

Rehabilitation of B&O Railroad Corridor:

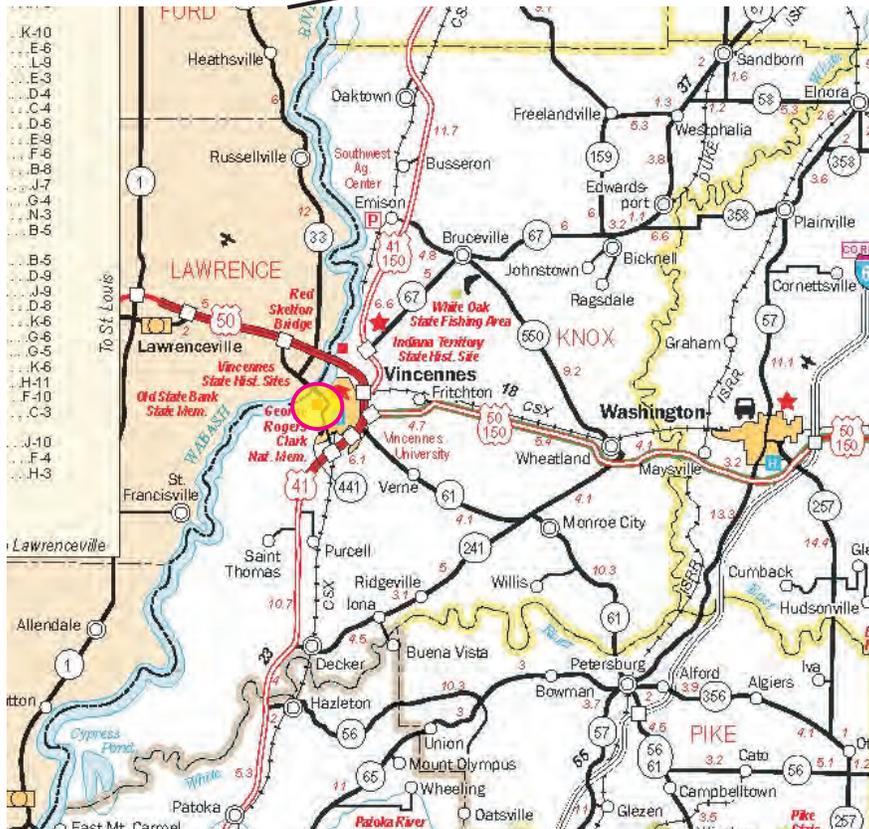
No Action (“Do Nothing”) Alternative: The No Action Alternative would leave the railroad corridor inside the Park boundaries in its current condition. This alternative would cost nothing but would not address the need to rehabilitate the area to the cultural landscape standards and intent of GERO Park and memorial.

Rehabilitate Railroad Corridor to Match Existing Cultural Landscape of GERO Park: This alternative would involve removing the existing ballast of the B&O Railroad corridor and filling in the corridor to bring it up to the level of the surrounding grade. This alternative would rehabilitate the area to the standards of the existing cultural landscape as close as practical to the original intent of the George Rogers Clark Memorial, the Park, and landscape designers. **For the purposes of the EA, this alternative is the preferred action.**

Impact Topics

The resource areas to be addressed in the EA will include:

- Ecology and water resources
- Threatened & endangered species
- Floodplains & flood protection
- Air quality
- Noise pollution
- Demographics, socioeconomics, and neighborhood/commercial districts
- Environmental justice
- Visual & aesthetic conditions
- Parklands & Section 6(f) evaluation
- Historic and archaeological resources & Section 4(f) evaluation
- Economic impacts
- Contaminated materials & hazardous waste sites
- Utilities (public and private)
- Indirect & cumulative effects

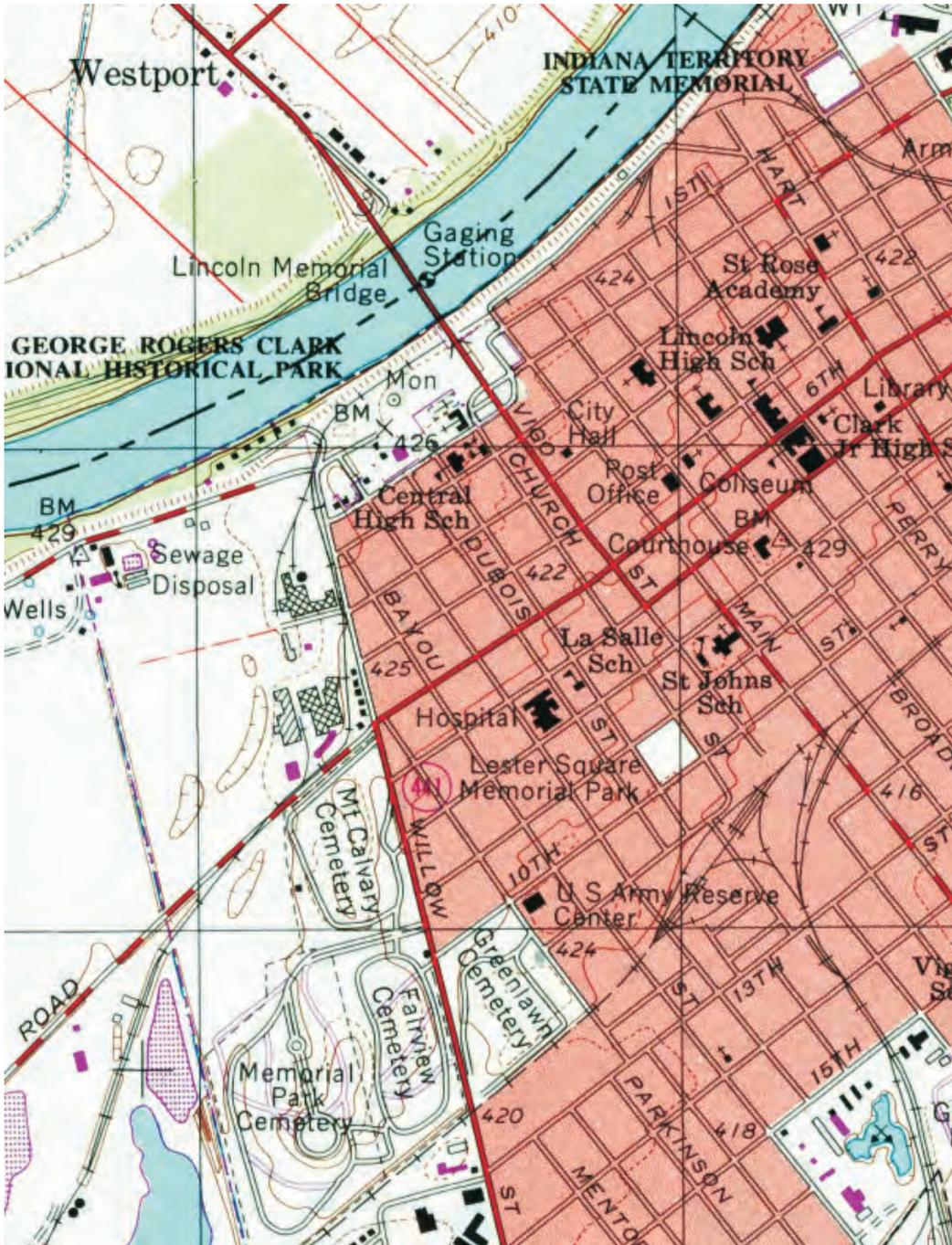


 Project Location

Source of Maps: INDOT website, www.IN.gov



State-County Project Location Map
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana



Produced by the United States Geological Survey
 Topography compiled by photogrammetric methods from imagery dated 1958 and 1962 and planimetric surveys 1961 and 1965. Planimetry derived from imagery taken 1987 and other sources. Photoinspected using imagery dated 1998; no major culture or drainage changes observed. PLS and survey control current as of 1965. Boundaries, other than corporate, revised 1999.
 North American Datum of 1927 (NAD 27)
 Projection: Illinois coordinate system, east zone (Lambert conformal conic)
 10 000-foot ticks: Illinois coordinate system, east zone and Indiana coordinate system, west zone
 1000-meter Universal Transverse Mercator grid, zone 16
 North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software
 There may be private inholdings within the boundaries of the National or State reservations shown on this map.
 Information shown in purple may not meet USGS content standards and may conflict with previously mapped contours.

Map Source: USGS; 7.5 minute, 1998 Vincennes Quad



**USGS Topographic Map
 Vincennes Levee Modification & Wastewater Infrastructure Project
 George Rogers Clark National Historical Park
 City of Vincennes, Indiana**



Map Source: Indiana Geological Survey, www.maps.indiana.edu

- - - - - Brevoort Levee
- Willow Street temporary closure location
- - - - - Vincennes Levee
- Main Street temporary closure location
- - - - - Wastewater Infrastructure Alignment
- George Rogers Clark National Historical Park boundaries
- M George Rogers Clark Memorial Building
- C Old Cathedral “French and Indian” Cemetery
- - - - - B&O Railroad corridor alignment

**Aerial Map of Key Sites & Structures
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana**



Photo #1: facing southeast to open space from a point within George Rogers Clark National Historical Park. The building next to the levee is owned by National Park Service.

Photo #2: facing northwest toward the Lincoln Memorial Bridge over the Wabash River and Francis Vigo statue. The view of the George Rogers Clark Memorial building is partially blocked by trees.



Site Photos, pg. 1
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana



Photo #3: facing northeast to memorial building from a point within George Rogers Clark National Historical Park. These trees may be affected by the proposed project.

Photo #4: facing north toward the Lincoln Memorial Bridge over the Wabash River and Francis Vigo statue. The gravel strip is the B&O Railroad corridor.

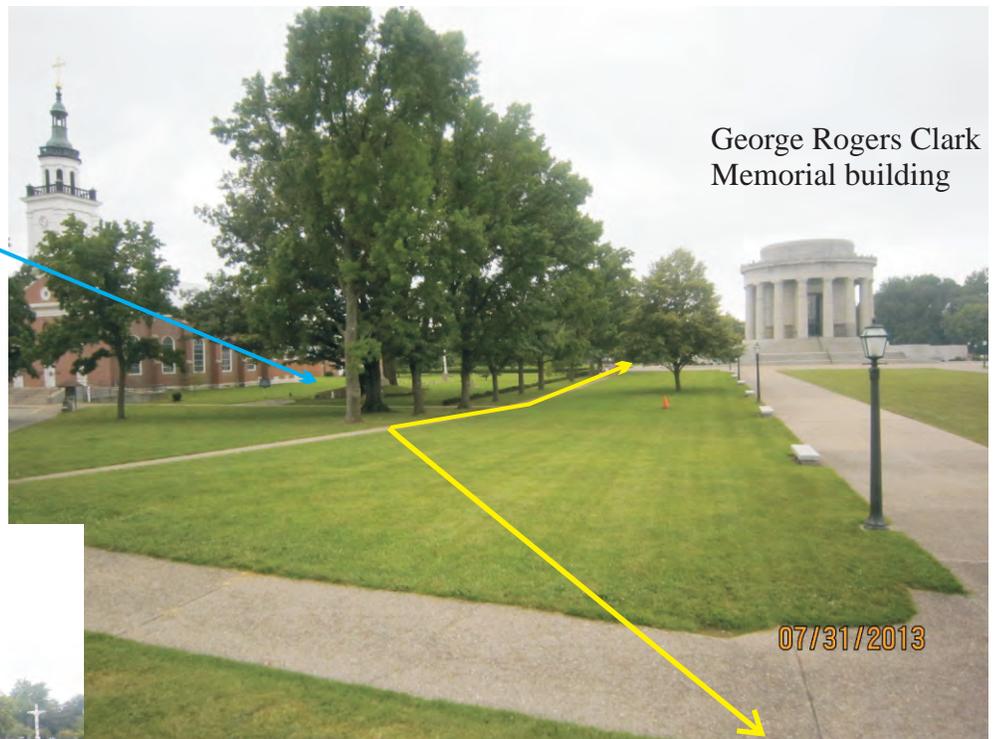


Site Photos, pg. 2
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana



Photo #5: Main Street temporary closure, in place.

Photo #6: Facing southeast from Vigo Street/SR 441 to the Old Cathedral “French and Indian” Cemetery. Yellow line indicates approximate location of wastewater infrastructure to be rehabilitated.

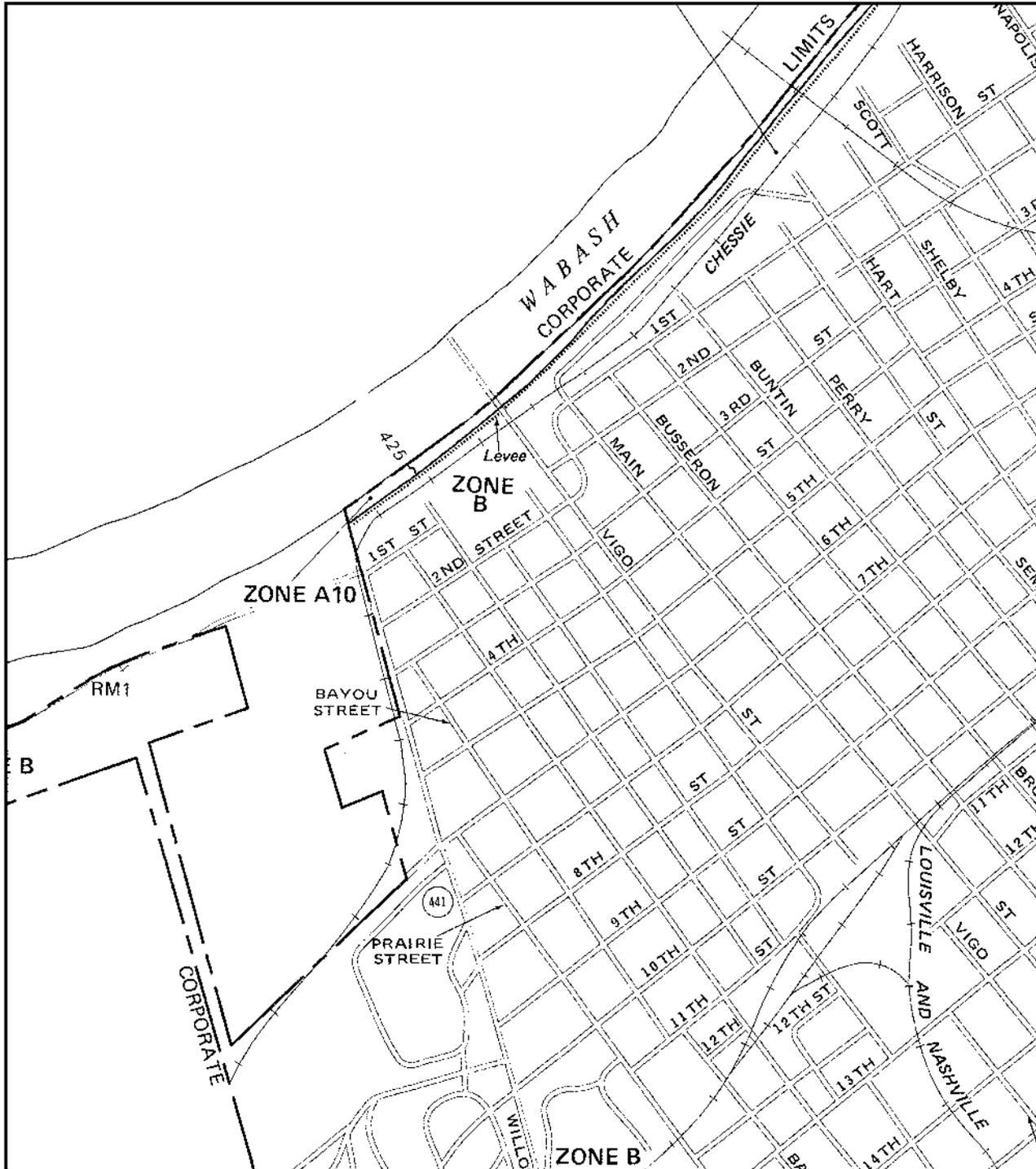


George Rogers Clark Memorial building

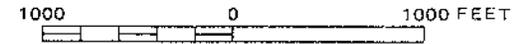


Site Photos, pg. 3

Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
VINCENNES,
INDIANA
KNOX COUNTY

(ONLY PANEL PRINTED)

COMMUNITY-PANEL NUMBER
180120 0005 C

EFFECTIVE DATE:
DECEMBER 18, 1984



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

From: Whelan, Matthew S LRL Matthew.S.Whelan@us.army.mil 
Subject: RE: RE: [EXTERNAL] Vincennes Levee project agency coordination (UNCLASSIFIED)
Date: September 24, 2013 at 8:13 AM
To: Hunter Pinnell hunter@vintilities.com, Erin erin@green3studio.com, Frank Doughman frank_doughman@nps.gov, Douglas Blome doug_blome@nps.gov, Nicholas Chevance nicholas_chevance@nps.gov, Kevin Steely ksteely@banning-eng.com, Joe Yochum work jyochum@vincennes.org, Kirk Bouchie kbouchie@vintilities.com, Rex Marchino ram@echowireless.net
Cc: Dawn Kroh dawn@green3studio.com

Classification: UNCLASSIFIED
Caveats: NONE

Hello Erin,

I am the contact for a levee permit application. Please reference the attached documents.

Thanks,

Matthew Whelan, P.E.
USACE, Louisville District
Geotechnical Section
p: (502)315-6330
f: (502)315-6454

-----Original Message-----

From: Hunter Pinnell [mailto:hunter@vintilities.com]
Sent: Friday, September 20, 2013 10:13 AM
To: 'Erin'; 'Frank Doughman'; 'Douglas Blome'; 'Nicholas Chevance'; 'Kevin Steely'; 'Joe Yochum work'; 'Kirk Bouchie'; 'Rex Marchino'; Whelan, Matthew S LRL
Cc: 'Dawn Kroh'
Subject: [EXTERNAL] RE: Vincennes Levee project agency coordination

Thanks Erin,

I'm cramming to get ready for my IDEM audit next Wednesday so if I can wait and review it after that is done it would be a great boon to my schedule. I can try to look at it in the meantime but things are getting pretty backed up at this point and I'm about ready to stop taking email and phone calls so I can get some stuff done after another morning of other issues cropping up.

As far as our Corps contact, I have never heard of your guy and the main person we deal with for our region is Matthew Whelan. I have copied him on this email and he can confirm that he is the person to coordinate with and provide his information directly or send you to the appropriate person if not.

Thanks,

Hunter Pinnell
MS4 Coordinator
Levee Superintendent
Vincennes Water Utilities
(812) 882-7877 Office
(812) 887-0681 Cell
hunter@vintilities.com

-----Original Message-----

From: Erin [mailto:erin@green3studio.com]
Sent: Friday, September 20, 2013 9:54 AM
To: Frank Doughman; Douglas Blome; Nicholas Chevance; Kevin Steely; Hunter Pinnell; Joe Yochum work; Kirk Bouchie; Rex Marchino
Cc: Dawn Kroh
Subject: Vincennes Levee project agency coordination

Hi Team, attached are draft documents to be sent to agencies for consultation/review:

- List of agencies with addresses



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

October 1, 2013

66-33
Ms. Erin Mulryan
Green 3
1104 Prospect Street
Indianapolis, Indiana 46203

Dear Ms. Mulryan:

RE: Wellhead Protection Area Proximity
Determination
Levee And Wastewater Infrastructure
Rehabilitation, Vincennes, Indiana, Knox
County

Upon review of the above referenced site, it has been determined that the site is **located** within a Wellhead Protection Area. This information is accurate to the best of our knowledge. However, there are in some cases, a few factors that could impact the accuracy of this determination. For example, some Wellhead Protection Area Delineations have not been submitted or many have not been approved by this office. In these cases, we use a 3,000 foot fixed radius buffer to make the proximity determination. To find the status of a Public Water Supply System's Wellhead Protection Area Delineation, please visit our tracking database at <http://www.in.gov/idem/4289.htm>.

Note, the Drinking Water Branch has launched a new self service feature which allows one to determine a wellhead proximity without submitting the application form. Use the following instructions: 1) Go to <http://idemmaps.idem.in.gov/apps/whpa/>; 2) Using the icon/tools in the upper right hand corner of the application, zoom to your site location or address; and 3) Once you have located your site of interest click on the "I" icon, and then using your mouse click on your location. The site wellhead protection area proximity determination will be displayed below the icon tools in the upper right hand corner of tool. In the future, please consider using this self service feature if it is suitable for your needs.

If you have any additional questions, please feel free to contact me at the address above or at (317) 234-7476.

Sincerely,

James Sullivan, Chief
Ground Water Section
Drinking Water Branch
Office of Water Quality



Natural Resources Conservation Service
6013 Lakeside Blvd.
Indianapolis, IN 46278

October 23, 2013

Erin Mulryan
Green 3
Historic Fountain Square
1104 Prospect Street
Indianapolis, IN 46203

Dear Ms. Mulryan:

The project to rehabilitate the levee and wastewater infrastructure in the George Rogers Clark National Historical Park in the City of Vincennes, Knox County, Indiana, as referred to in your letter received October 1, 2013, will not cause a conversion of prime farmland.

If you need additional information, please contact Lisa Bolton at 317-295-5842.

Sincerely,

A handwritten signature in blue ink that reads "Jane E. Hardisty".

JANE E. HARDISTY
State Conservationist

Helping People Help the Land

An Equal Opportunity Provider and Employer



United States Department of the Interior Fish and Wildlife Service



Bloomington Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

October 23, 2013

Ms. Erin Mulryan
Green 3
Historic Fountain Square
1104 Prospect Street
Indianapolis, IN 46203

Dear Ms. Mulryan:

This responds to your letter dated September 30, 2013 (received in this office October 17, 2013), requesting U.S. Fish and Wildlife Service (FWS) review of a proposed levee and wastewater infrastructure rehabilitation project for the George Rogers Clark National Historical Park (GERO Park) in Knox County, Indiana.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

According to your letter the proposed project consists of the construction of a permanent levee and high ground area within GERO Park, repairs to the current wastewater infrastructure, and rehabilitation of an abandoned railroad corridor. All of these activities will occur on previously disturbed land. To avoid physical impacts to the Wabash River, minimize erosion and cover or contain soil piles to prevent runoff during construction. Stabilize disturbed stream banks as quickly as possible after construction is completed. Revegetate with native plant species in areas that are currently dominated by natural vegetation.

Endangered Species

The proposed project is within the range of the federally endangered Indiana bat (*Myotis sodalis*), fat pocketbook mussel (*Potamilus capax*), sheepsnose mussel (*Plethobasus cyphus*), and a species proposed as endangered, the Northern long-eared bat (*Myotis septentrionalis*). There are no known occurrences of these species or their habitat within or near the project area, therefore we concur that the proposed project is not likely to adversely affect these listed species.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. If, however, new information on endangered species at the site becomes available or if project plans are changed significantly, please contact our office for further consultation.

For further discussion, please contact Marissa Reed at (812) 334-4261 ext. 1215 or Marissa_Reed@fws.gov.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Scott E. Pruitt", with a large loop at the end of the last name.

Scott E. Pruitt
Field Supervisor

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-17208

Request Received: October 2, 2013

Requestor: Green 3 LLC
Erin Mulryan
1104 Prospect Street
Indianapolis, IN 46203

Project: Vincennes Levee & Wastewater Infrastructure Rehabilitation Environmental Assessment; George Rogers Clark National Historical Park (GERO Park)

County/Site info: Knox

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: This proposal will require the formal approval for construction in a floodway under the Flood Control Act, IC 14-28-1. Please submit a copy of this letter with the permit application.

Natural Heritage Database: The Natural Heritage Program's data have been checked. The mussel species below have been recorded in the Wabash River within ½ mile of the project area.

1. Fat Pocketbook (*Potamilus capax*); State & Federally Endangered
2. Eastern Fanshell Pearlymussel (*Cyprogenia stegaria*); State & Federally Endangered
3. Rabbitsfoot (*Quadrula cylindrica cylindrical*); State Endangered & Federal Candidate
4. Ohio Pigtoe (*Pleurobema cordatum*); State Special Concern

Fish & Wildlife Comments: The mussel species above are no longer found live in the section of the Wabash River near this project. Therefore, we do not foresee any impacts to these mussel species as a result of the project.

The measures below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

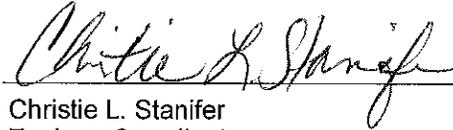
1. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion; low endophyte tall fescue may be used in the ditch bottom and side slopes only.
2. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
3. Seed and protect all disturbed slopes that are 3:1 or steeper with heavy duty biodegradable erosion control blankets (follow manufacturer's recommendations for selection and installation; seed and apply mulch on all other disturbed areas.

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

Contact Staff:

Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.



Date: October 25, 2013

Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife



INDIANA GEOLOGICAL SURVEY

611 N. Walnut Grove Ave., Bloomington, IN 47405-2208 • (812) 855-7636

<http://igs.indiana.edu> • IGSinfo@indiana.edu

November 5, 2013

Erin Mulryan
green 3
1104 Prospect Street
Indianapolis, IN 46203

Dear Ms. Mulryan,

This letter is in response to your request, dated September 30, 2013, regard the proposed levee and wastewater infrastructure rehabilitation project in George Rogers Clark National Historical Park, in the city of Vincennes, Knox County, IN. Knox County is situated in Indiana Seismic Zone 2A, meaning soils are prone to seismic-wave amplification during major earthquake shaking. With proper precautions, the proposed activities you describe should not affect or be affected by the geology of the area.

Additional geologic information may be found on our [INDIANA MAP](#) Web site or you may contact me at 812-855-1366 or [Marni Karaffa](#)

Sincerely,

Marni D. Karaffa
Geologist

Appendix C

Site Photos



Photo #1: facing southeast to open grassy area from a point within George Rogers Clark National Historical Park. The building next to the levee is owned by National Park Service.

Photo #2: facing northwest toward the Lincoln Memorial Bridge over the Wabash River and Francis Vigo statue. The view of the George Rogers Clark Memorial building is partially blocked by trees.



Photos taken on 7/31/2013.

Site Photos, pg. 1
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana



Photo #3: facing northeast to memorial building from a point within George Rogers Clark National Historical Park. These trees would be affected by the preferred alternative to construct a high ground area.

Photo #4: facing north toward the Lincoln Memorial Bridge over the Wabash River and Francis Vigo statue. The gravel strip is the B&O Railroad corridor.



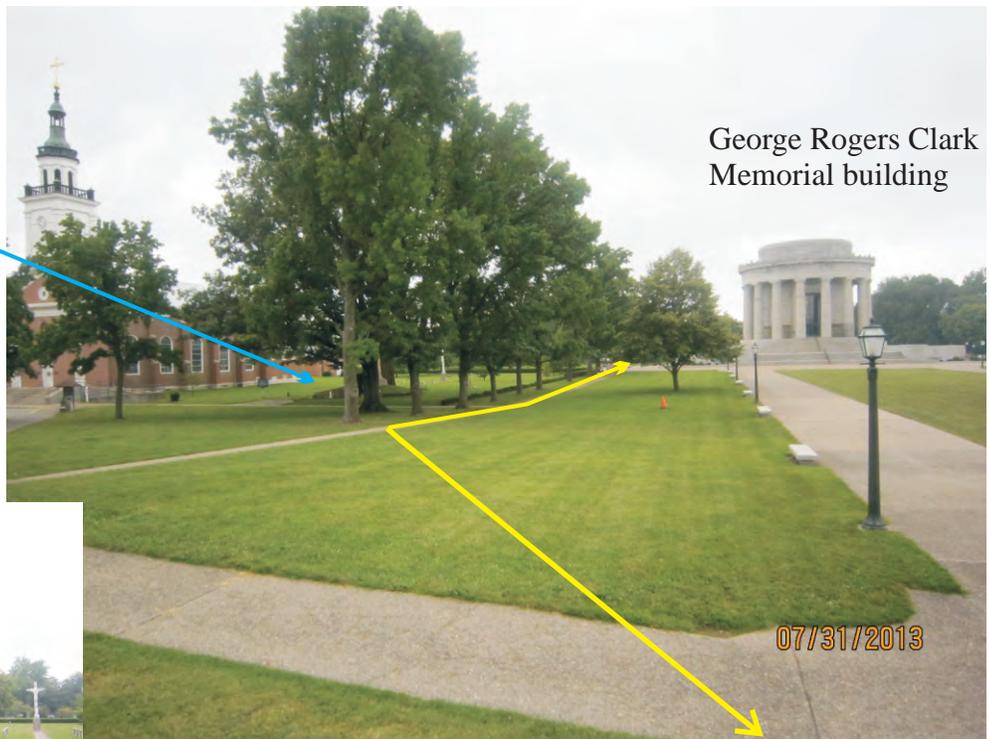
Photos taken on 7/31/2013.

Site Photos, pg. 2
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana



Photo #5: Main Street temporary closure, in place.

Photo #6: Facing southeast from Vigo Street/SR 441 to the Old Cathedral “French and Indian” Cemetery. Yellow line indicates approximate location of wastewater infrastructure to be rehabilitated.



George Rogers Clark Memorial building



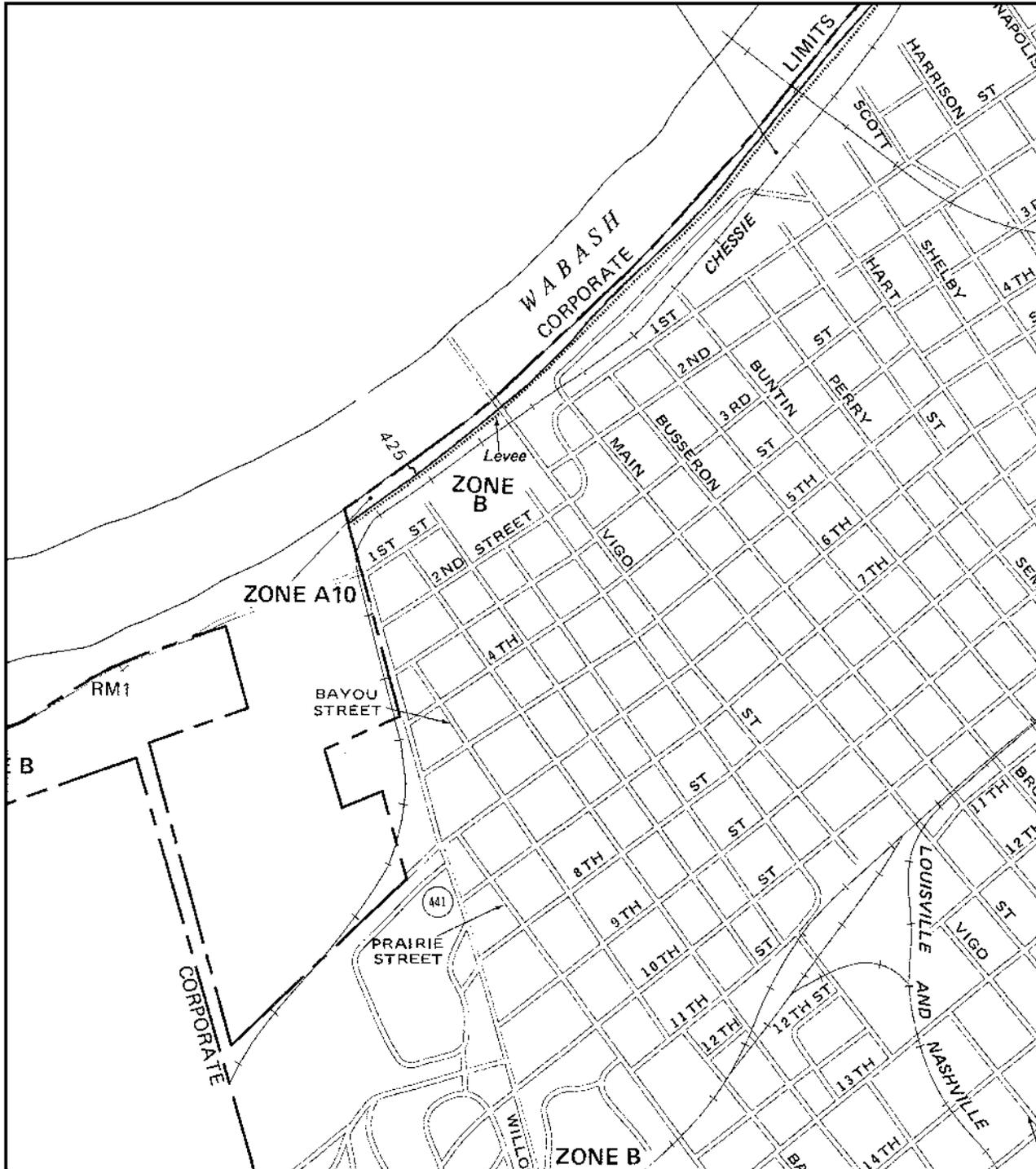
Photos taken on 7/31/2013.

Site Photos, pg. 3

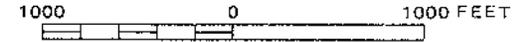
Vincennes Levee Modification & Wastewater Infrastructure Project
George Rogers Clark National Historical Park
City of Vincennes, Indiana

Appendix D

Floodplains



APPROXIMATE SCALE



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY OF
VINCENNES,
INDIANA
KNOX COUNTY

(ONLY PANEL PRINTED)

COMMUNITY-PANEL NUMBER
180120 0005 C

EFFECTIVE DATE:
DECEMBER 18, 1984



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Levee Certification vs. Accreditation

What is Levee Certification?

Levee certification is the process that deals specifically with the design and physical condition of the levee, and is the responsibility of the levee owner or community in charge of the levee's operations and maintenance. Certification must be completed for the levee to be eligible for accreditation by the Federal Emergency Management Agency (FEMA). Certification consists of documentation, signed and sealed by a registered Professional Engineer, as defined in Chapter 44 of the Code of Federal Regulations (44 CFR), Section 65.2. This documentation must state the following:

- The levee meets the requirements of 44 CFR, Section 65.10
- The data is accurate to the best of the certifier's knowledge
- The analyses are performed correctly and in accordance with sound engineering practices

This documentation is provided to FEMA to demonstrate that a registered Professional Engineer certified the levee, and meets the specific criteria and standards to provide risk reduction from at least the one-percent-annual-chance flood. Once the levee meets the other requirements of 44 CFR 65.10, FEMA can accredit the levee and show the area behind it as being a moderate-risk area on a Flood Insurance Rate Map (FIRM). If a community or levee owner wants the area behind a levee to be shown as reducing risk from the one-percent-annual-chance flood, they must first complete the process for having the levee certified.

How is a Levee Certified?

To certify a levee, the community or levee owner must work with a licensed engineer or a Federal agency responsible for levee design to develop and certify documentation that the levee meets design construction standards for at least the one-percent-annual-chance flood. *Levee certification does not warrant or guarantee performance*, and it is the responsibility of the levee owner to ensure the levee is being maintained and operated properly.



Levees

FEMA defines a levee as a “man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide a level of protection from temporary flooding.”

Levees reduce the risk of flooding, but do not eliminate all flood risk. As levees age, their ability to reduce this risk can change and regular maintenance is required to retain this critical ability. In serious flood events, levees can fail or be overtopped and, when this happens, the flooding that follows can be catastrophic.

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What is Accreditation?

A levee cannot be accredited until the certification process is completed. FEMA accredits a levee as providing adequate risk reduction on the FIRM if the certification and adopted operation and maintenance plan provided by the levee owner are confirmed to be adequate. An operations and maintenance plan specifies key operating parameters and limits, maintenance procedures and schedules, and documentation methods. FEMA's accreditation is not a health and safety standard – it only affects insurance and building requirements.

An area impacted by an accredited levee is shown as a moderate-risk area, and is labeled Zone X (shaded) on a FIRM. In this case, the National Flood Insurance Program (NFIP) floodplain management regulations do not have a mandatory flood insurance purchase requirement. However, FEMA recommends the purchase of flood insurance due to the risk of flooding from potential levee failure or overtopping.

If the levee is not accredited, the area will be mapped as a high-risk area, known as a Special Flood Hazard Area, or SFHA. In this case, the NFIP floodplain management regulations must be enforced and the federal mandatory purchase of flood insurance applies.

FEMA's Role

FEMA does not own, operate, maintain, inspect, or certify levees. FEMA's role is limited to identifying and mapping the level of flood risk associated with levees and only accredits them where data showing compliance with 44 CFR 65.10 is provided by the community, levee owner, or other interested parties. FEMA has a responsibility to the public to identify the risks associated with levees that are either not certified or no longer compliant with 44 CFR 65.10. Areas behind non-accredited levees will be shown on FIRMs as a high-risk floodplain.

What is a Provisionally Accredited Levee or PAL?

FEMA created the PAL designation to facilitate the certification and accreditation process for communities unable to readily provide certification documents, but who reasonably expect levees in the community to provide one-percent-annual-chance flood risk reduction. A PAL is a designation for a levee that FEMA previously accredited on an effective FIRM, and is now awaiting certified data and/or documentation to show the levee remains compliant with NFIP regulations. Levees with structural deficiencies are not eligible for the PAL designation. However, a PAL may

include a 12-month period for the correction of maintenance deficiencies.

A community or levee owner's failure to provide full documentation of the status of a levee does not mean the levee doesn't provide the designated level of risk reduction. However, it does impact how the levee will be mapped on a FIRM because it will be de-accredited, and the impacted area will be mapped as an SFHA.

Before FEMA will apply the PAL designation to a levee, the community or

levee owner must sign and return an agreement that indicates the data and documentation required for accreditation will be provided within 24 months or less. The procedures for PALs are clarified and documented

in FEMA Procedure Memorandum No. 43, *Guidelines for Identifying Provisionally Accredited Levees*.



For More Information

Living with levees is a shared responsibility. It is important for both levee owners and those who live and work near levees to understand the risk associated with levees. FEMA has a number of resources available for further information about levees, including the certification and accreditation process. Below are links to additional information:

- A levee-specific webpage has been set up on the FEMA.gov. Please visit <http://www.fema.gov/living-levees-its-shared-responsibility>.
- For additional information on NFIP criteria for accrediting levees, visit: www.fema.gov/library/viewRecord.do?id=2517.
- For more background on Provisionally Accredited Levees, download the fact sheet at: www.fema.gov/library/viewRecord.do?id=1987.
- For more specific information regarding levee construction and restoration, visit: <http://www.fema.gov/living-levees-its-shared-responsibility/levee-system-construction-restoration-projects>
- For additional information on Procedure Memorandums visit: <http://www.fema.gov/ctp-main/guidelines-specifications-flood-hazard-mapping-partners>.

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Provisionally Accredited Levees

Introduction

Flood hazard maps, known as Flood Insurance Rate Maps (FIRMs), provide communities with information regarding their flood risks. Under the Risk Mapping, Assessment, and Planning (Risk MAP) program, the Federal Emergency Management Agency (FEMA) is leading a major effort to update these maps. As part of this effort, FEMA requests specific data and documentation from levee owners or the communities responsible for maintaining the levees. This information is used to determine whether the levee provides protection from at least the one-percent-annual-chance flood, known as the base flood. This is the minimum protection level federally required¹ to accredit the levee system, therefore designating areas behind levees as moderate flood risk areas instead of high risk areas on the FIRM. Accreditation does not guarantee the performance of the levee. A levee is defined by FEMA as “a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water in order to reduce the risk from temporary flooding.”

What is a Provisionally Accredited Levee (PAL)?

When a community with an existing accredited levee is being remapped, the levee owner must provide the proper documentation to certify it still meets at least the minimum Federal requirements. To assist owners who cannot provide FEMA with the required professional engineer-certified data and/or documentation to show the levee continues to provide protection from at least the base flood, FEMA established the Provisionally Accredited Levee (PAL) designation to facilitate the levee accreditation process. Before FEMA will apply the PAL designation to a levee system, the community or levee owner must sign and submit an agreement indicating the data and documentation required for compliance with 44 CFR 65.10 will be provided within a specified time frame. This time frame will be no longer than 24 months.

¹ Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR 65.10)



For More Information

FEMA has a variety of resources available to provide more information on levees and PALs:

- For more information about PALs, visit: <http://www.fema.gov/living-levees-its-shared-responsibility/fema-levee-resources-library>
- To review 44 CFR, please visit: www.access.gpo.gov/nara/cfr/waisidx_00/44cfrv1_00.html
- To download a formatted version of 44 CFR 65.10, visit: www.fema.gov/library/viewRecord.do?id=2741
- For additional information on levees and links to fact sheets, visit: <http://www.fema.gov/living-levees-its-shared-responsibility>
- For additional information on flood hazard mapping, visit: <http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping>
- For more information on Risk MAP, visit: www.fema.gov/rm-main

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How is a PAL Mapped on a FIRM?

The area behind a PAL is shown on a FIRM as Zone X (shaded); however, those areas of residual flooding, such as ponding areas, internal drainage areas through levees, or riverine flooding from other flooding sources are shown as high-risk Special Flood Hazard Areas (SFHAs). Flood insurance is federally required by most lenders in SFHAs, but not in Zone X (shaded) areas, although purchasing coverage is highly encouraged. Additionally, a warning note is placed on the FIRM in the vicinity of the PAL. The warning note, as shown below, explains the levee has been provisionally accredited and the steps a levee owner must take to maintain accreditation.

How do PAL Designations Affect Communities?

If the status of the levee is in question, using the PAL designation allows communities to adopt and use the updated flood hazard information on the FIRM while collecting the certification documentation for the FEMA levee accreditation process. Communities have up to 24 months to document the levee's compliance with the requirements in 44 CFR 65.10. In the interim, the PAL note on the map alerts residents the Zone X (shaded) designation behind the levee is temporary and may change when the levee accreditation process is complete.

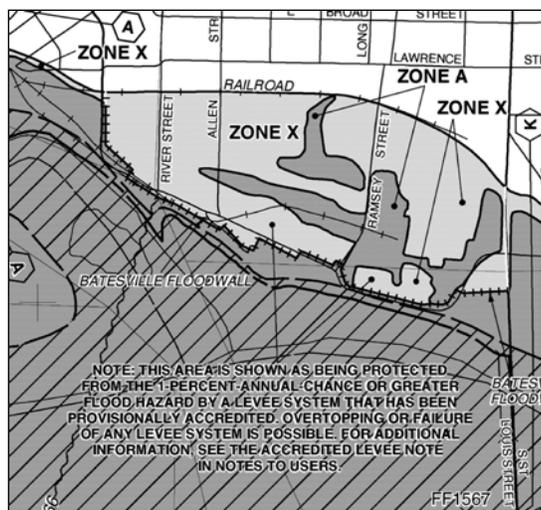
What Happens if a PAL is *not* Accredited within the Designated Timeframe?

If a levee owner does not provide full documentation of the status of a levee system, it does not necessarily mean the levee system is not providing the designated level of risk reduction. It does, however, impact how the levee will be mapped on the FIRM as it will be de-accredited and the impacted area will be mapped as high risk. If the 24-month PAL period expires and the community has not submitted all of the required documentation, FEMA will prepare a revised preliminary FIRM mapping the levee system as de-accredited. This preliminary FIRM will be released to the community, which will have a six-month public comment period. After the comment period, FEMA will issue a letter of final determination, and a new FIRM will go into effect. Any changes in the Federal mandatory purchase requirements for flood insurance will also then take effect.

What Happens if a Levee System Meets the PAL Requirements?

When the PAL requirements are met, FEMA will remap the impacted area to reflect accreditation of the levee system. Even after FEMA's accreditation process has been completed, there is still a flood risk associated with levees. While levees are designed to reduce risk, even properly maintained levees can fail or be overtopped by large flood events. Levees reduce risk; they do not eliminate risk.

FEMA and other government agencies are working to make citizens aware of their flood risk through various forms of outreach. Local officials are adopting protocols and procedures for ensuring public safety. Residents and business owners are learning more about their flood risk and the steps to take for protecting their families, businesses, and communities from the threat of flooding. Remember, levees are not fail proof – protect your future by knowing your flood risk, knowing your role in reducing the risk from flood, and taking the steps today to ensure the safety of lives and property in areas behind levees.



WARNING: Provisionally Accredited Levee. For explanation, see the Notes to Users.

Note to Users: WARNING: This levee, dike, or other structure has been provisionally accredited and mapped as providing protection from the one-percent-annual-chance flood. To maintain accreditation, the levee owner or community is required to submit documentation necessary to comply with 44 CFR 65.10 by [insert date]. Because of the risk of overtopping or failure of the structure, communities should take proper precautions to protect lives and minimize damages in these areas, such as issuing an evacuation plan and encouraging property owners to purchase flood insurance.

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FEMA

April 29, 2011

Vincennes Water Utilities
Attn: Hunter Pinnell
403 Busseron St.
PO Box 749
Vincennes, IN 47591

Dear Mr. Pinnell:

This letter is a follow-up to discussions the City of Vincennes had with the Federal Emergency Management Agency (FEMA), Indiana Department of Natural Resources (IN-DNR), and United States Army Corps of Engineers (USACE)-Louisville District on March 29, 2011, and April 5, 2011. The purpose of these discussions was to determine actionable items for the Vincennes Local Flood Protection Project (LFPP) and impacts of the Breevort Levee within the City of Vincennes corporate limits. FEMA appreciates the City of Vincennes' cooperation and input during these productive discussions.

While the Vincennes LFPP portion of the levee system appears to be eligible for a Provisionally Accredited Levee (PAL) designation; the Breevort portion of the levee system is not PAL eligible. PAL eligibility is based upon whether a levee is believed to satisfy minimum design requirements defined in Code of Federal Regulations Title 44 Part 65.10 (44 CFR 65.10) using the effective Flood Insurance Study (FIS) information, where more time is needed for the community of levee owner to gather the data and documentation to demonstrate compliance. These PAL determinations were made in coordination with USACE-Louisville District.

The Breevort levee is currently mapped as providing flood protection on the effective Flood Insurance Rate Maps (FIRMs). Since the Breevort levee was determined to have inadequate freeboard based on 44 CFR 65.10 criteria and the effective FIS information, it is not PAL eligible. The levee must be mapped as no longer accredited on the revised flood map, with flood risk depicted landward of the levee. The flood risk depicted landward of the Breevort levee system will be based upon a new engineering analysis approach. In response to Congress, FEMA has convened a task force to examine alternate ways to map areas impacted by levees that cannot be accredited as providing protection per the 44 CFR 65.10. The new approach will better meet the needs of communities and citizens while providing more precise results that better reflect the flood risk in areas impacted by levees. The details of this new approach will take some time to finalize, but the procedures are projected to be ready in approximately six months. After that time, in consultation with the affected communit(ies), FEMA will base the Breevort levee modeling upon these new procedures. It may take another six to 12 months for FEMA to complete the analysis and issue a preliminary FIRM.

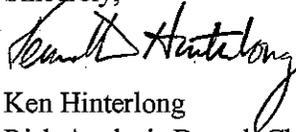
Prior to issuance of the preliminary FIRMs but after the levee modeling procedures are finalized, FEMA will again reach-out to impacted communities to discuss options for mapping of the levee systems. The period of time that FEMA will utilize to establish new levee modeling procedures allows for two things. First, this gives FEMA time to properly implement them and analyze the flood risk landward of the Breevort levee.

This may also help Vincennes determine the base flood impacts the Breevort Levee has within the City of Vincennes corporate limits. Second, this will give Vincennes additional time to collect the 44 CFR 65.10-compliant data and documentation.

It is FEMA's understanding that Vincennes is currently working on a levee evaluation with the USACE-Louisville District. Vincennes and USACE-Louisville District are also examining the effective FIS hydrologic and hydraulic information for the Wabash River. If Vincennes completes one or both of these objectives prior to or during the anticipated PAL period or offer, a Letter of Map Revision (LOMR) may be submitted through the MT-2 process. A LOMR is FEMA's standard procedure for addressing most mapping changes, including levee certification per 44 CFR 65.10 and updates to effective hydraulic and hydrologic information. LOMR's are required to be submitted by communities when there are changes impacting the base flood elevation. A LOMR may be necessary for any Breevort Levee segments where certification is sought. This is due to the fact that the Breevort levee is not PAL eligible against the current effective FIS information but may found to be certifiable as the result of possible hydraulic and hydrologic updates to the Wabash River.

FEMA appreciates Vincennes' continued commitment to the National Flood Insurance Program and the accurate identification of flood hazards within the City. Please continue to refer questions and concerns to Mike Hanke, Senior Engineer, Risk Analysis Branch. Mr. Hanke is available by phone at (312) 408-5364, or by email at mike.hanke@dhs.gov.

Sincerely,



Ken Hinterlong
Risk Analysis Branch Chief, Mitigation Division

December 18, 2013

Erin Maloney, PE, CFM
FEMA
U.S. Department of Homeland Security
536 S. Clark Street, 6th Floor
Chicago, IL 60605

Re: Vincennes/Brevoort Levee Accreditation

Dear Erin,

This letter is an update based on "Vincennes' Comments on FEMA Analysis and Mapping Procedures for Non-Accredited Levees January 27, 2012".

Hunter Pinnell from Vincennes and Rex Marchino from the Brevoort Levee Conservancy District (BLCD) met with FEMA representative Erin Maloney at the US Army Corps of Engineers (USACE) Levee Safety Conference on December 12, 2013 to discuss the unique situation with Vincennes' accreditation efforts. Also in attendance were Dan Frank and Richard Pruitt from the USACE and Kevin Steely from Banning Engineering.

FEMA has discussed with Vincennes the possibility of using the Sound Reach method for the Vincennes Levee plus the five miles of the Brevoort Levee that protects the city, and then using the Freeboard Deficient approach on the remainder of the Brevoort Levee. We still don't believe that we fit in those categories, nor is Vincennes willing to submit to them at this point. We would argue that we should not fall under the new policy at all as we should be an accreditable levee system in the first place based on the results of the recent USACE H&H Study proving that Vincennes and five miles of Brevoort is a hydraulically independent levee system.

The bottom line is that even if our community did fall under the new policy, we still wouldn't fit into the new approach very well in our still unique situation. Our original understanding of the new approach was that the areas behind levees that currently didn't quite meet the strict base flood protection requirements would be remapped to show what actual level of protection the levee did provide. For example, a levee that could protect against the 90 year flood would be remapped inside to reflect that with a smaller Zone B (now Zone X) area and a larger Zone A. That would minimize the impacts versus the "without levee" scenario and could be accomplished under current mapping efforts since they are already being remapped anyway. Unfortunately FEMA disregarded our comments and situation, choosing to go in a different direction so we are dealing with this as it stands now, even if it isn't what we think is the best approach if it applied to us.

As stated by FEMA and the US Army Corps of Engineers (USACE) in past conversations, the Vincennes Levee is technically PAL eligible even though the south two sections weren't finished and were actually defunded and deauthorized by Congress in 1986 due to the results of USACE economic study of 1983. A more comprehensive history can be provided upon request but in short, the 1983 USACE economic study stated that the Brevoort agricultural Levee south of Vincennes provided enough protection to Vincennes that it was not economically feasible to

complete the remaining unconstructed portions of the Vincennes Levee. The report states that the Brevoort Levee only officially provides a 50-year level of protection when including the FEMA required 3' of freeboard but was considered adequate because the USACE stated it does provide 100-year protection with minimal freeboard (1.5'). In simple terms the report said that even though Brevoort didn't meet the exact FEMA requirements to provide a 100 year level of flood protection for the 100 year base flood event (BFE), it provided enough protection to terminate the completion of the Vincennes Levee. Consequently, when FEMA created the most current Flood Insurance Rate Map (FIRM) for Vincennes and Knox County in 1984, FEMA accepted the USACE conclusion that the levee protection was suitable and both the Vincennes and Brevoort Levees were shown as providing protection "from the one-percent annual chance (100-year) flood by levee, dike, or other structures". All development within the protection of these levees was built under the minimal requirements for levee protected Zone B. The only exceptions in the Brevoort area were the areas in the southern reaches away from Vincennes that were rated as Zone A due to internal drainage issues.

The 2011 USACE H&H study showed that approximately five miles of the Brevoort Levee adjacent to the end of the Vincennes Levee does have adequate freeboard and provides enough protection to the City of Vincennes that the two levees together in a system (Vincennes-Brevoort Levee System) can be fully accredited as a hydraulically independent levee system. This is what we are still working hard to achieve.

A previous hydrologic analysis performed by the USACE also showed that due to the reservoirs upstream the discharges were much less on the Wabash River in our area and as a result, the Base Flood Elevations and discharges are lower than previously published. The other factor in all of this is that the Russell-Allison Levee across the river is lower than the Vincennes Levee System and has failed due to overtopping in two of the last three major floods in 2008 and 2011. There is ponding storage area in Illinois when their levee fails and is accounted for in the latest hydraulic study performed by the USACE for Vincennes.

As said before, Vincennes does not want to settle for the lesser results produced in the policy change unless we were unable to be accredited in any way and it was an absolute last resort. The other option that we have considered before accepting Zone D is resurrecting the original Vincennes levee project and completing the two sections of the Vincennes Levee that were not built. Vincennes could go under a Zone AR designation for the time it took to finish the levee if federal funding was available, although that would have a mandatory insurance requirement that Zone D does not. We have been working with our Congressman and Senator over the last two years to help us with authorization and appropriations through the WRDA Bill.

One of the primary problems we have with the new approach is Zone D. The definition of Zone D is: "Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk." Based on the 2011 USACE H&H study done for our community, the flood risk can be and has been determined to continue to be Zone B/Zone X as it has been since the original maps were released in 1984, so we already don't meet that definition. FEMA echoed in a past conference call what is stated in the new policy document that even though FEMA wouldn't have any regulatory duties or requirements for Zone D, the local community could enforce their own floodplain ordinance. The problem is how can you regulate something that is undetermined by definition? The flood risks would have to be determined before you could make a regulation and that doesn't make sense.

Another problem with Zone D is that it basically deregulates our city and would cause problems as a result that would affect us all. New construction could build at whatever elevation they wanted to, which would make it worse if there ever were a levee breach or flood inundating our city. Also, with an undetermined flood risk, how would insurance rates be set? It is difficult to

believe that the rates wouldn't be significantly higher in an area with undetermined flood risk. Insurance companies typically err on the conservative side and would assume it was a high risk area, even though in our case it is protected by a levee that provides ample protection.

Flood insurance also wouldn't be required in Zone D and that seems to take the immediate pressure off initially but makes it worse if there ever were a disaster. The unregulated new construction would be built right at grade and they wouldn't have any flood insurance either. This would make flood disaster impacts even worse for our community and require more disaster recovery dollars from an already strapped federal government, if our community was even eligible for those disaster recovery funds.

Another issue we have with the approach overall is that it is all tied to the discharges that were current when the original mapping was completed in 1984. Vincennes took the proactive approach to commission the USACE at a cost of \$50,000 to complete the 2011 H&H study. As stated before, the lower discharges determined by the study would correspond to a lower Base Flood Elevation. The Brevoort Levee does provide base flood protection with minimal freeboard in many locations using the old discharges but provides significantly better protection and lower risk under the proposed lower discharges. FEMA doesn't have to perform those studies itself but merely has to accept the proposed new discharges from the USACE. Indiana DNR is in agreement with these proposed flows and will revise these coordinated discharges if Illinois DNR also agrees. Otherwise the Brevoort Levee outside of the five miles protecting Vincennes will most likely not be PAL eligible. FEMA should allow the inclusion of new information such as the 2011 USACE study and any other new, proven data to make the mapping as current as possible.

The last point we would like to make stems from the January 4th, 2012 conference call with Vincennes, FEMA and the USACE. It was stated by FEMA at that time that since the approximately five miles of Brevoort Levee that protects Vincennes doesn't have a definite end nor does it tie back into high ground, it would not meet the strict definition of 65.10b(1) and would not be considered hydraulically independent. When questioned, FEMA said that it is their interpretation of the definition however, we read it completely different. In our minds this definition is for riverside structures like bridges and it means that the levee would have to be higher at this point than if there were no structures and this is a different matter than hydraulic independence and the termination of a levee. The experts at the USACE agree that the Vincennes-Brevoort Levee System is hydraulically independent any way you look at it. Vincennes and the USACE have submitted the initial 2011 USACE H&H study to FEMA as well as the computer models from the study and will submit the additional information they have determined in the interim to prove our case.

In summary, Vincennes is continuing to pursue full accreditation of the Vincennes-Brevoort Levee System and has hired the USACE to perform the evaluation, which is near completion. We continue to believe that the only tenable course for us at this time is to pursue accredited levee status based on the H&H study proving our levee system is hydraulically independent. Hopefully a place can be found for us inside of FEMA's regulations if some common sense is used to evaluate our issues. We request that Vincennes would remain as Zone X if the Levee System Evaluation study conducted by the USACE shows we meet all of the criteria from 44CFR 65.10 as we expect. Zone D would be an absolute last resort, even if FEMA could define it more to specify exactly what happens in that undetermined area.

In the interim, Erin provided information on the Levee Seclusion Method for preliminary maps to us. The preliminary maps could be issued showing Vincennes and BLCD as secluded and FEMA could study the USACE H&H study conclusions, hopefully using the new discharges for the mapping. If the revised discharges were accepted by FEMA then we wouldn't have to submit a LOMR with our certification report and the Vincennes Levee System could be

measured against the modern information. This would be an excellent way to allow time to solve the issues while allowing the map work to continue.

The only issue we have with seclusion is the verbiage for the note. The default note is:
“ATTENTION: The levee, dike, or other structure inside this boundary does not comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure. The flood hazard data shown inside this boundary (which have been re-published from the May 5, 2004 FIRM for the City of Floodville), should continue to be used until this FIRM panel is revised to update the flood hazard information in this area.”

We would argue that the first sentence is not correct in our case and would be harmful to development in our community in the interim without a full understanding of the issues. Instead, we would suggest that our note read: *“ATTENTION: The levee, dike or other structure inside this boundary is under extended review for compliance with section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure. The flood hazard data shown inside this boundary (which have been re-published from the December 1984 FIRM for the City of Vincennes and Knox County), should continue to be used until this FIRM panel is revised to update the flood hazard information in this area.”*

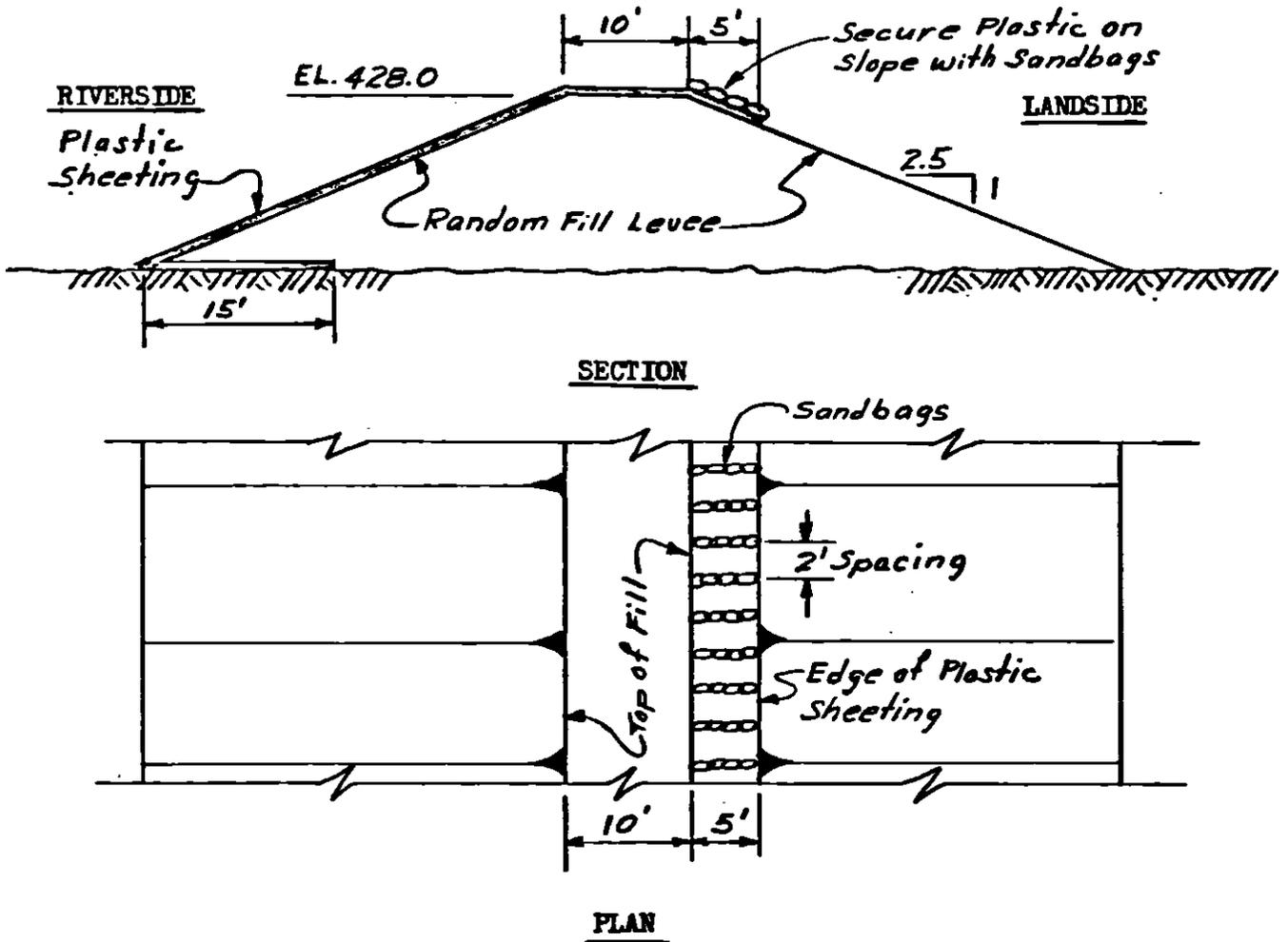
Richard Pruitt and Andy Lowe from the USACE will provide more detailed information of their conclusions from the H&H Study as soon as they are available.

Thank you once again for discussing this with us and for considering our side of the issues that we face. Our community will suffer in some way in the future unless we obtain a Zone X designation from you all so we regard this as essential to our future success. To discuss further and for clarification or more information of any statements contained in this document, please contact me with the information below.

Sincerely,

Hunter Pinnell
Levee Superintendent
Vincennes Water Utilities
403 Busseron Street
PO Box 749
Vincennes, IN 47591
(812) 882-7877 Office
(812) 887-0681 Cell
hunter@vinutilities.com

Excerpts from City of Vincennes Levee Operations and Maintenance Manual, Emergency Flood Protection specifications for open grassy area south of George Rogers Clark National Historical Park memorial building (pg 1 of 3)

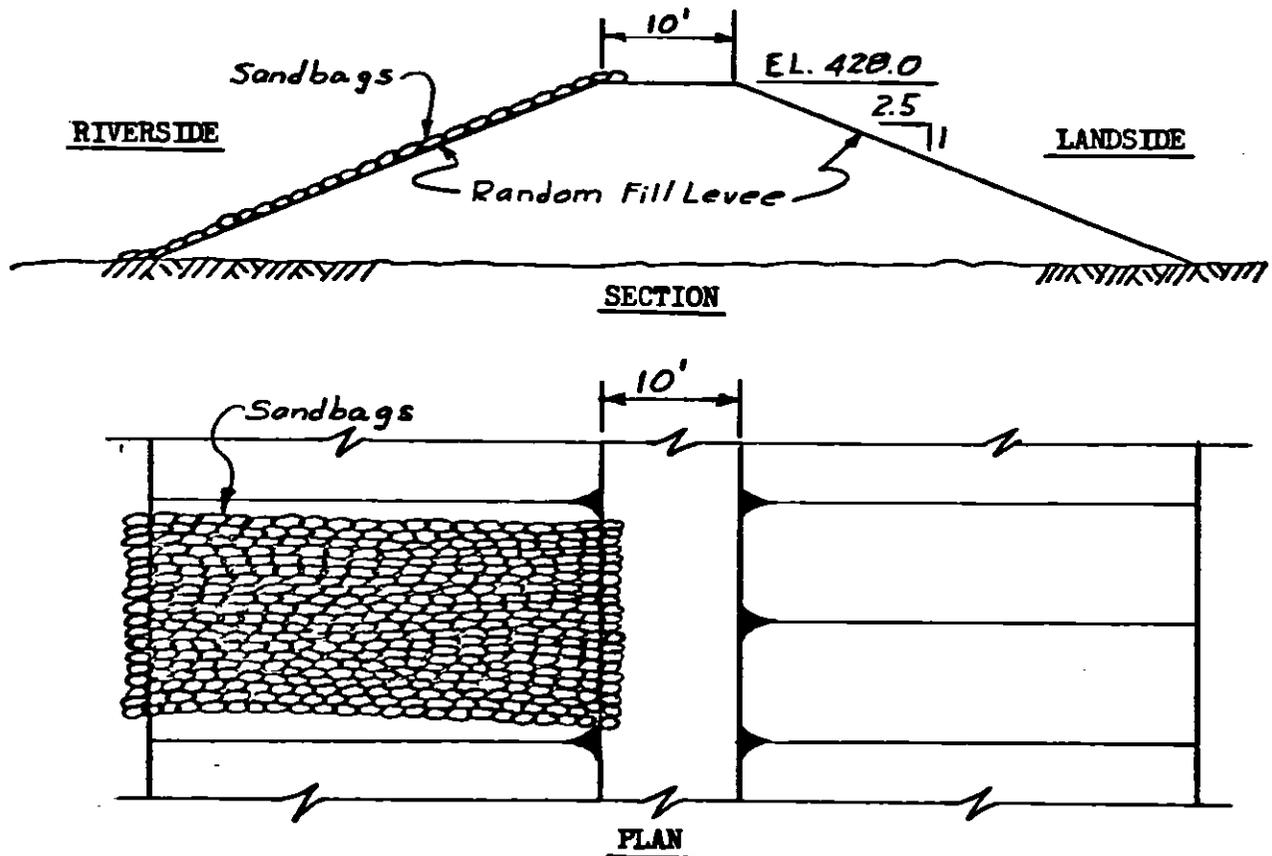


Notes:

1. Plastic sheeting should be laid prior to fill being placed.
2. Sandbags should be approximately 2/3 full of fill.
3. Lap unfilled portion under the sandbag.
4. Tying or sewing sandbags is not necessary.
5. Fill should be placed in 12 inch lifts, and tracked into place by dozer.
6. Fill side slopes should be 2.5H:1V
7. Berm width should be 10 feet.

FLOOD PROTECTION-VINCENNES, IND.
 EMERGENCY R.R. CLOSURE- STA. 198+11

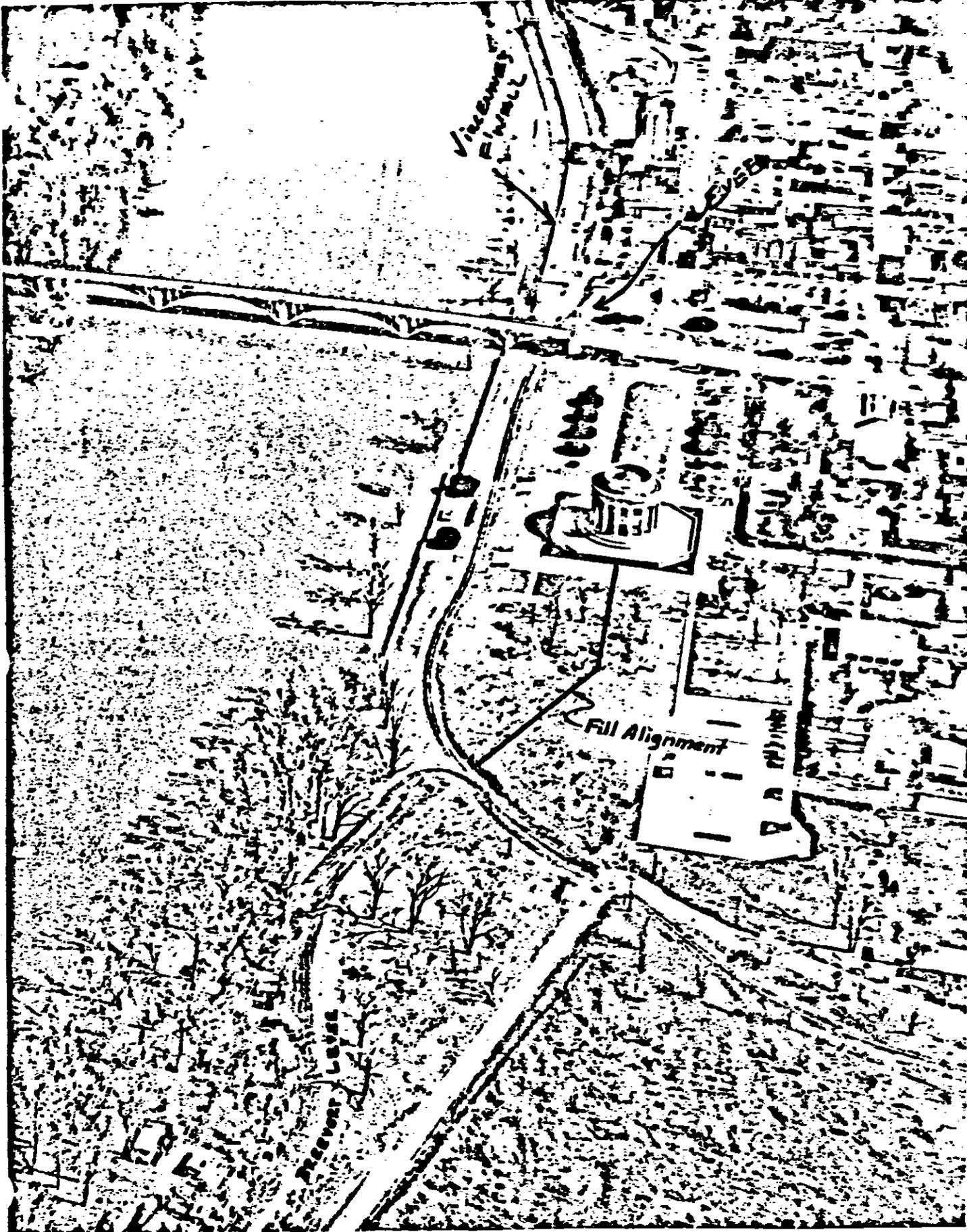
Excerpts from City of Vincennes Levee Operations and Maintenance Manual, Emergency Flood Protection specifications for open grassy area south of George Rogers Clark National Historical Park memorial building (pg 2 of 3)



Notes:

1. Fill should be placed in 12 inch lifts and tracked in place with dozer.
2. Fill side slopes should be 2.5 H: 1 V.
3. Berm with should be 10 feet.
4. Sandbags should be approximately $\frac{2}{3}$ full of fill
5. Lap unfilled portion under sandbag.
6. Tying or sewing sandbags is not necessary.

FLOOD PROTECTION-VINCENNES, IND.
CLARK MEMORIAL PARK
EMERGENCY CLOSURE





US Army Corps of Engineers

LEVEE SYSTEM EVALUATION REPORT

VINCENNES, INDIANA

LOUISVILLE DISTRICT CORPS OF ENGINEERS



**STATUS: FINAL
FOR OFFICIAL USE ONLY**

May 2014

1.2. Executive Summary

The Louisville District of the U.S. Army Corps of Engineers, at the request of the Local Sponsor (City of Vincennes, Indiana), has performed a Levee System Evaluation study for the City of Vincennes for the purposes of providing an assessment of the levee's ability to satisfactorily perform as required by the Federal Emergency Management Agency as part of the National Flood Insurance Program. This system evaluation study was accomplished in accordance with 44 CFR 65.10, *Mapping of Areas Protected by Levee Systems*, dated 1 October 2002, Engineering Circular EC 1110-2-6067, *USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation*, dated 30 July 2009, and *Analysis and Mapping Procedures for Non-Accredited Levee Systems, New Approach*, dated July 2013. The system evaluation study included a thorough review of project historical documentation, a field inspection to review the condition of the project; including proper operation and maintenance, analysis of the system components, a hydrology and hydraulic analysis, review of the pipeline inspection video and report of the gravity lines through the line of protection, stability analyses of the structures, seepage analyses, megger testing of the pumping stations' wiring, etc. The components of the project were evaluated with respect to the 1% annual chance (100-year) flood elevation with 95% chance assurance.

A new hydraulic profile utilizing HEC-RAS computer modeling was determined as part of this LSE. This new 1% annual chance (100 year) profile was used in the system evaluation. This new profile differs from the 1984 Flood Insurance Study profile. The new profile results in a decrease of approximately 2.4 ft from the 1984 FEMA Profile. The computed risk and uncertainty with 95% chance assurance is 2.4 ft.

Based upon the hydrology and hydraulic analysis, the City of Vincennes relies upon an upstream section of the Brevoort Levee to provide reduced flood risk to the city. At approximately 8 miles downstream on the Brevoort Levee, there are seepage issues which cause the upstream section of Brevoort to be a "Sound Reach", and downstream from this location would fall under the "Structural Based Inundation Procedure". The "Structural-Based Inundation Procedure" involves modeling breaches at various locations along the levee. To determine the Special Flood Hazard Area (SFHA), possible locations of system breach, geometry and failure duration were considered. The previous 2011 USACE Hydraulic and Hydrologic Analysis study of the Brevoort-Vincennes levee system was utilized to determine the appropriate breach parameters to assume for this current modeling effort. The former study utilized a HEC-RAS model (to develop a breach hydrograph) and a FLO-2D model (for interior flood modeling) to simulate a variety of levee breach scenarios at given locations along the Brevoort Segment. Model results were used as a visual aid to qualify how susceptible Vincennes would be to flooding given overtopping and/or levee failure of the Brevoort Segment at a given location.

Results of the breach scenarios indicated that a small low lying portion of the City is susceptible to backwater conditions from different breach scenarios along the Brevoort Segment. In Figure 1.2-1, the shading depicts the area which would be inundated by the

1% chance (100-year) flood elevation if the subject project were not in place. Figure 1.2-2, in contrast, shows the lesser potential inundated area with the levee system in place.

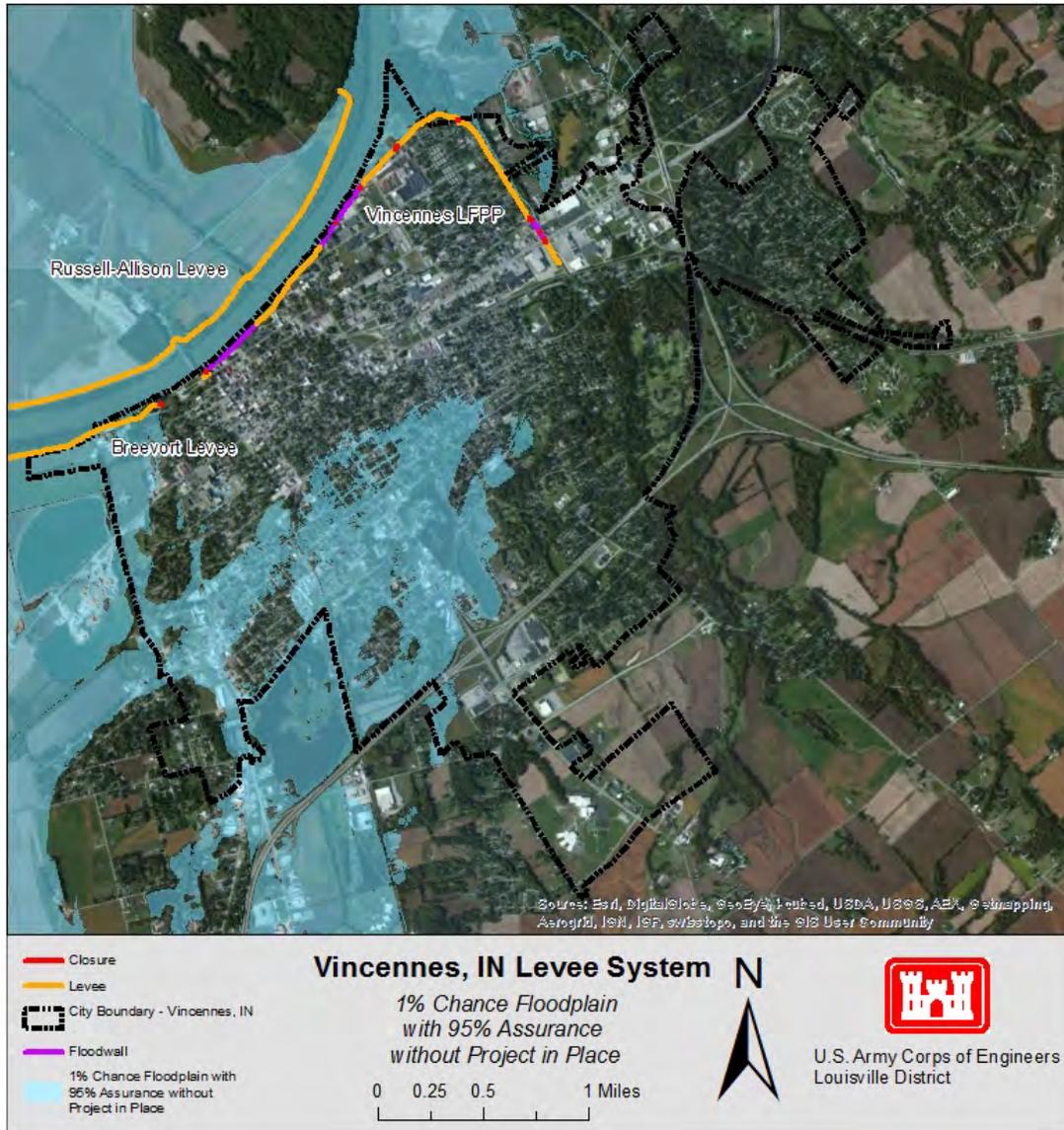


Figure 1.2-1: Vincennes, Indiana Inundation by 1% Chance (100-year) Floodplain With 95% Assurance Without Levee System in Place

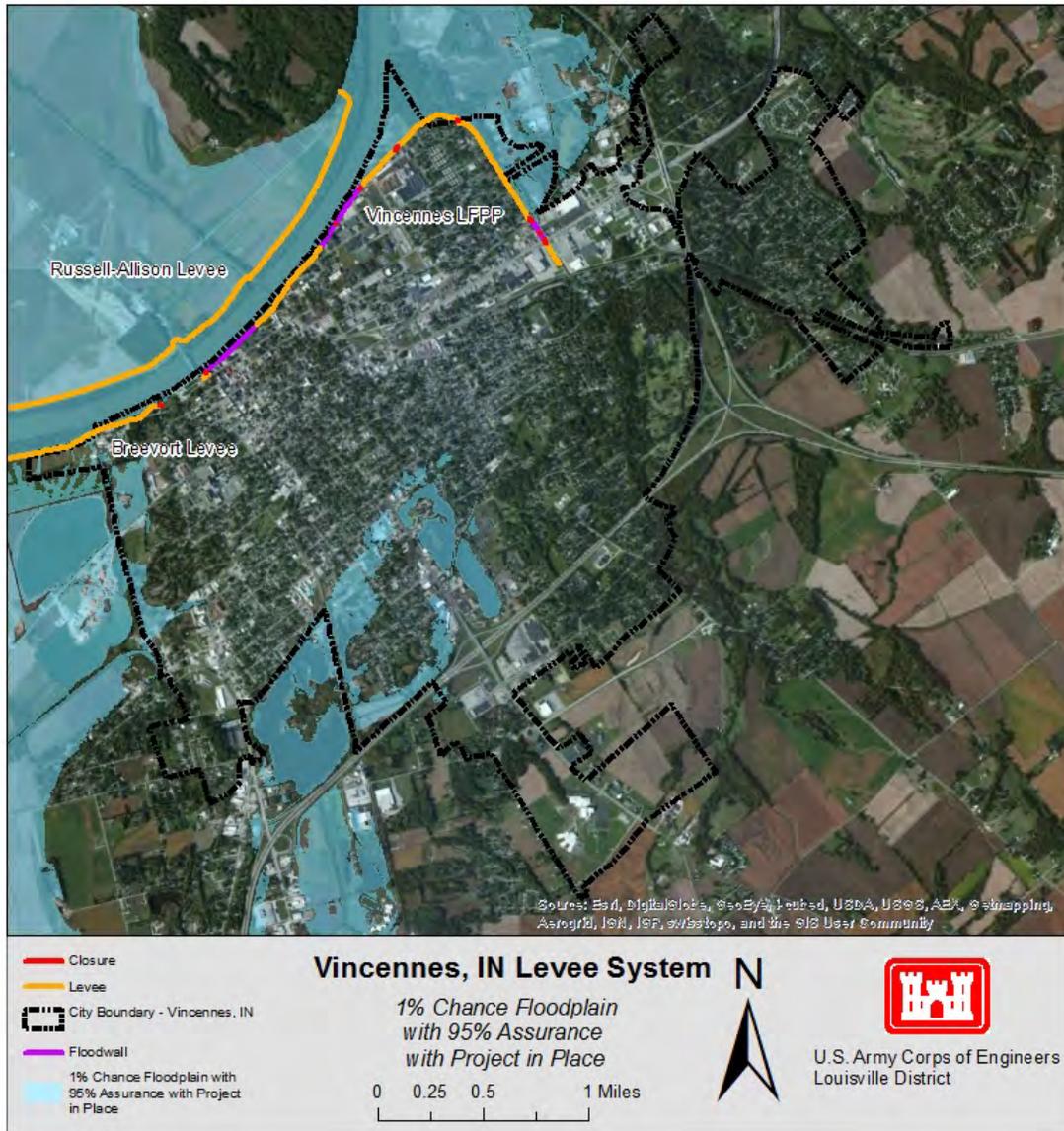


Figure 1.2-2: Vincennes, Indiana Inundation by 1% Chance (100-year) Floodplain With 95% Assurance With Levee System in Place

8. ENGINEERING STUDIES, INVESTIGATIONS AND ANALYSES

8.1. Site Visit Summary

The initial and most comprehensive site visit for the report was conducted by thirteen team members on 6-10 February 2012; reference Chapter 4 of this report for a list of the primary study team members and their discipline. Items noted as requiring attention or repair were placed into one of two categories, LSE issues (unacceptable deficiencies) that would prevent the project from receiving a positive evaluation report, and O&M issues that require attention but would not prevent the project from being considered eligible to be in the FEMA program. Initially, a total of 16 items were documented as LSE issues as shown in Table 8.1-1.

Table 8.1-1: Initial LSE Issues Documented During the Field Inspection

Discipline	Item of Deficiency	Report Reference
Geotechnical	Animal Burrows throughout both Vincennes and Brevoort embankments	8.4.5.1
Geotechnical	No relief well performance testing or maintenance records	8.4.5
Geotechnical	Willow St Closure does not pass stability evaluation	2.2.2
Electrical	Highland St Pump Station; repair to motor #3 circuit breaker is required	8.6.1, 8.6.3
Mechanical	2 nd St. Pump Station; Sluice gate located in discharge well was inoperable at time of inspection, repair as required.	8.5.1.1
Mechanical	Gatewells #5 and #6; gatewells are inoperable and were indicated in inspection to be abandoned: should be properly abandoned	8.5.1.8
Mechanical	The sluice gate in Manhole 1C is inoperable and needs to be replaced.	8.5.1.8
Mechanical	Highland St P.S. discharge flap gate is cracked and requires repair	8.5.1.3
Mechanical	Gatewell #2 in 2 nd St. is inoperable and should be repaired. Access to the gatewell should be restored.	8.5.1.1
Mechanical	Gatewell #7 sluice gate stem should be repaired, misaligned flap gate should be repaired.	8.5.1.2
Mechanical	Treatment Plant Effluent gatewell (Brevoort Sta.	8.5.1.8

	1118+54) is inoperable and needs to be replaced.	
Mechanical	Perry St. P.S.; repair replace new bolts/nuts missing from pump discharge flapgates.	8.5.1.4
Mechanical	Pump start/stop elevations should be verified as current with O&M procedures.	8.5
Structural	Kimmel Park closure is required to be trial erected with USACE team member present. –Accomplished 17 December 2012 with no issues	8.3.2.3
Structural	Pipes receiving a PACP structural grade of 4 or 5 have not yet been remediated.	8.3.6
Structural	Manway closure at Sta. 263+15 is improperly installed (upside down) – corrected by Sponsor in September 2013	8.3.2.2

8.1.1. Additions to Initial List of Levee System Evaluation Issues

Based on modeling and analysis of project features and conditions, some items were added to the list of LSE issues, given in Table 8.1-2 below.

Table 8.1-2. Additions to LSE Issues List

Geotechnical	Toe Drain Inspection, Sta 214+34 to 241+00; Seepage models indicate this toe drain is required to achieve adequate factor of safety, video inspection of this line is required.	8.4.4
Geotechnical	Brevoort Levee Embankment; Levee does not meet seepage criteria during the flood event at a specific location downstream (Sta. 710+00). The levee downstream of this location cannot be included as a Sound Reach.	8.4.4
Geotechnical	Relief wells along the Wabash River are required to be inspected, and selective wells pump tested to determine their flow capacity. This capacity will then be used to verify their adequacy.	8.4.4
Hydraulics	In conjunction with the Vincennes Levee Segment, a portion of the Brevoort Levee Segment is relied upon for providing flood reduction for the City. Select areas of Vincennes are shown to be vulnerable to a backwater condition from a breach downstream of the Sound Reach. Measures to address this backwater flooding may be required in order to receive a positive Levee System Evaluation for these impacted areas, or these areas could be delineated as within the floodplain on inundation mapping.	8.2

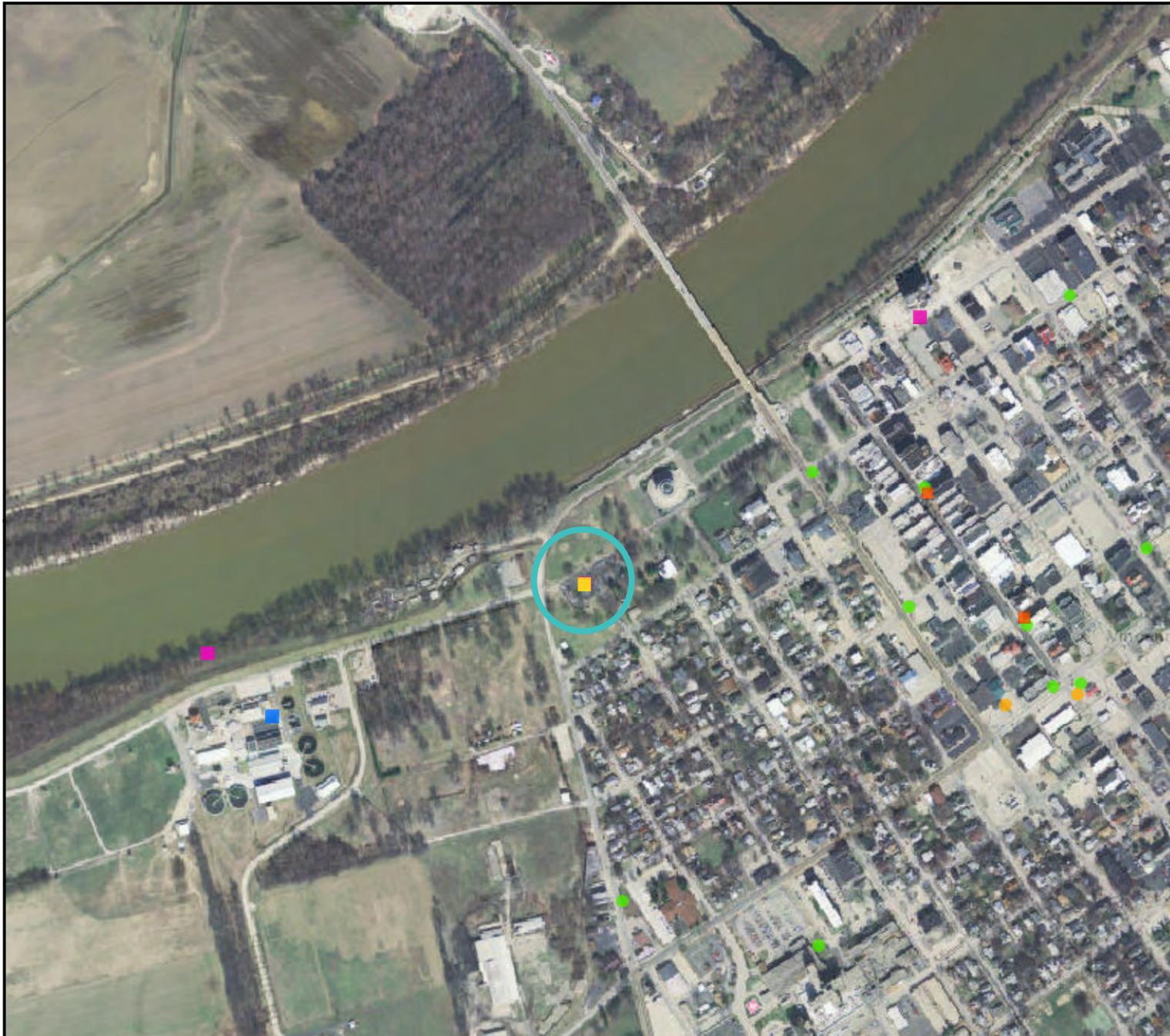
11. RESULT OF PROJECT SYSTEM EVALUATION STUDY

Based on each specific disciplines' conclusions and all other criteria evaluated as part of EC 1110-2-6067 *USACE Process for the National Flood Insurance Program (NFIP) Levee System Evaluation*, dated 31 August 2010, it has been determined that the subject project can be provided a positive LSE letter with the proper correction and positive findings to the listed LSE issues shown in Table 8.1-1 and Table 8.1-2.

Appendix E

Hazardous Waste Site Information

Date: 9/11/2013



Legend

-  Manufactured Gas Plants
-  Voluntary Remediation Program
-  NPDES Pipe Locations
-  NPDES Facilities
-  Waste Treatment Storage Disposal
-  Waste Transfer Stations
-  Tire Waste Sites
-  Solid Waste Landfills
-  Septage Waste Sites
-  Restricted Waste Sites
-  Open Dump Waste Sites
-  Industrial Waste Sites
-  Construction Demolition Waste
-  Composting Facilities
-  Not Leaking
-  Leaking
-  Superfund Sites
-  Institutional Control Sites
-  Corrective Action Sites
-  Cleanup Sites
-  Brownfields
-  Manufactured Gas Plant within Park boundaries

Author:

0 0.25 mi

Appendix E-2



George Rogers Clark National Historical Park

Former Manufactured Gas Plant Site

Community Fact Sheet

National Park Service

U.S. Department of the
Interior



March 2010

A SITE HISTORY . . .

The George Rogers Clark Memorial was constructed by the State of Indiana in the mid-1930s and became a unit of the National Park System in 1966, as the George Rogers Clark National Historical Park (Park). The Park consists of approximately 26 acres along the Wabash River in Vincennes, Indiana. Roughly three acres of the western portion of the Park is the site of a former manufactured gas plant (MGP or Plant).



Manufactured gas plants made gas from coal or oil for lighting, heating, and cooking before natural gas became widely available. The Vincennes MGP operated from 1859 to the early 1930s. The Plant consisted of both above- and below-ground structures, including a plant building containing furnaces, retorts, purifiers, and pumps. There also were up to four gas holders at various points in time, as well as storage sheds, an office building, lime houses, and coal houses. In 1936 and 1937, remaining MGP structures were demolished and the land was incorporated into the Memorial.

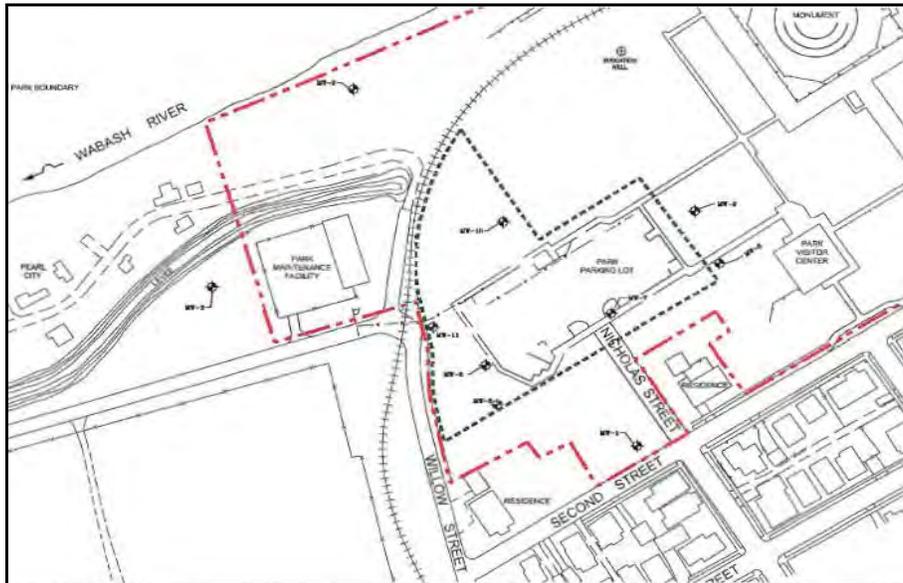
The Vincennes MGP utilized two different gas manufacturing processes over time. From 1859 through 1924 the Plant manufactured gas using the coal carbonization method. This process resulted in the generation of coke as a byproduct. The process also required the removal of sulfide, cyanide, and ammonia from the gas before distribution. The gas purification residues consisted of solids such as woodchips, corn cobs, or similar items impregnated with iron salts. During gas purification, these materials absorbed hydrogen sulfide and cyanide from the gas. After being reused several times, these materials were often used as fill, or they may have been discarded as wastes. Other byproducts typically generated from the coal carbonization method include coal tar, a tar-water mixture, and waste water.

From 1924 until the Plant ceased operations in 1932, the Plant manufactured gas using the carbureted water gas method. This method required both coal (or coke) and a petroleum oil to manufacture gas and generated waste streams similar to those from the coal carbonization method.

Contaminants typically associated with MGPs include tar and tar/water emulsions; polycyclic aromatic hydrocarbons (PAHs); benzene, toluene, ethylbenzene, and xylene (BTEX); phenols; metals; and cyanide.

ENVIRONMENTAL INVESTIGATIONS...

Previous investigations indicate that hazardous substances are present in the vicinity of the former MGP (the Site) and may pose a threat to public health or welfare or the environment. These investigations



identified elevated concentrations of MGP-related contaminants in surface and subsurface soils in the vicinity of former process areas and historic structures, including the following hazardous substances: BTEX compounds, cyanide, metals, and PAHs. Groundwater samples contained cyanide, BTEX, and PAHs.

Based upon these considerations, the National Park Service (NPS) has determined that further environmental investigations should be conducted. Those investigations will be conducted

as part of a “Non-Time-Critical Removal Action” under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601, *et seq.* Specifically, an Engineering Evaluation/Cost Analysis (EE/CA) will be performed at the Site. The EE/CA will determine the nature and extent of contamination, assess potential risks posed to human and ecological receptors from exposure to such contamination, evaluate potential Site cleanup alternatives, and identify a recommended cleanup alternative. Once the EE/CA is conducted, an EE/CA Report will be generated that will be made available for public review and comment.

COMMUNITY INVOLVEMENT...

Community involvement is an important component of the CERCLA process. The public will have the opportunity to be involved in reviewing and commenting on the EE/CA Report when it is completed. The initial administrative record file, which contains documents upon which the selection of the Site cleanup action will be based, has been established and is available for public review at the following two locations:

George Rogers Clark National Historical Park and
401 South Second Street
Vincennes, Indiana 47591
Contact: Brian McCutchen
Phone: 812-882-1776 x202
Mon-Sun 9:00 am – 5:00 pm (Eastern Time)
(Closed Thanksgiving, Christmas, and New Year’s Day)

National Park Service
1050 Walnut Street, Suite 220
Boulder, Colorado 80302
Contact: Shawn P. Mulligan
Phone: 303-415-9014
Mon-Fri 9:00 am - 4:00 pm (Mountain)
(Except for federal holidays)

FOR MORE INFORMATION

If you have questions concerning the field work or any aspect of the Former Manufactured Gas Plant Site, please contact Bettina Longino, Project Manager, at 802-229-4600 or Brian McCutchen, Park Superintendent, at 812-882-1776 extension 202.

PUBLIC INFORMATION SHEET FOR SOIL DISTURBING ACTIVITIES
Former Manufactured Gas Plant Site
George Rogers Clark National Historical Park
Vincennes, IN

This *Public Information Sheet for Soil Disturbing Activities (Information Sheet)* provides background information related to the former manufactured gas plant (MGP) at the George Rogers Clark National Historical Park (GERO, or the Park), guidance for health and safety during soil disturbing activities, notification procedures, and contact information for parties conducting soil disturbing activities at the Park.

SCOPE

This *Information Sheet* applies to activities that disturb surface or subsurface soil within or adjacent to the Former MGP Area and any areas where contaminants from the former MGP were stored, disposed of, placed, or otherwise came to be located. Activities that disturb soil include, but are not limited to, grounds maintenance operations, landscaping, construction, excavation, and paving.

PURPOSE

This *Information Sheet* presents guidance for parties conducting soil disturbing activities at the Park, since soil disturbances may potentially result in exposure to residual chemicals in soil. This *Information Sheet* also presents notification procedures and contact information in the event that unanticipated subsurface conditions are encountered.

APPLICABILITY

This *Information Sheet* is to be used for planning, overseeing, and undertaking activities that disturb surface or subsurface soil at the Park. This *Information Sheet* is intended to supplement all other applicable health and safety, engineering, and work procedures required for soil disturbing activities and does not obviate the need for contractors to develop activity-specific health and safety plans.

BACKGROUND

Roughly 3 acres of the western portion of the approximately 26-acre Park is the site of a former MGP (Former MGP Area) that operated historically (to the early 1930s). By-products of gas manufacturing that could be present within the former MGP boundary or in areas where contaminants from the former MGP were stored, disposed of, placed, or otherwise came to be located include coal and tars. Residues are generally black or dark grey and often have a hydrocarbon odor. They may be dry, brittle solids or they may be oily and tar-like liquids. Contaminants typically associated with MGPs include; polycyclic aromatic hydrocarbons (PAHs); benzene, toluene, ethylbenzene, and xylene (BTEX); phenols; metals; and cyanide. Sampling conducted to-date has identified elevated concentrations of hazardous substances released from the MGP in subsurface soils in the vicinity of the former MGP process areas and historic structures.

Liquid residues have been encountered in the vicinity of former MGP structures. However, these liquids have been observed below the 2-foot depth typically anticipated for soil disturbance associated with routine maintenance activities. Slag and crushed coal pieces/coal pieces have been observed in shallower soil material.

PUBLIC INFORMATION SHEET FOR SOIL DISTURBING ACTIVITIES
Former Manufactured Gas Plant Site
George Rogers Clark National Historical Park
Vincennes, IN



It is not anticipated that groundwater will be contacted during routine maintenance or construction operations, with the exception of groundwater from the on-site irrigation well. This *Information Sheet* does not provide specific guidance in the event that contaminated groundwater is encountered (visual evidence such as petroleum-like sheens or tar globules, or olfactory evidence such as a musty fuel oil-like odor); however, the notification procedures and contact information presented in this *Information Sheet* should be used in such an event.

**GUIDELINES FOR HEALTH AND SAFETY DURING SOIL DISTURBING
CONSTRUCTION/MAINTENANCE ACTIVITIES**

Note that all Federal OSHA regulations apply, and that the following guidelines represent minimum health and safety measures associated with MGP-related chemicals in soil only. Contact information is provided in the Response Notification and Contacts section at the end of this *Information Sheet*.

Before any party conducts activities that will disturb surface or subsurface soil at the Park:

1. Park personnel should advise the GERO MGP Project Manager of the location and planned depth of the activity. The Project Manager will review existing data, if any, for the planned work area and notify Park personnel of any previous observations of MGP residues or contaminated soil in that

PUBLIC INFORMATION SHEET FOR SOIL DISTURBING ACTIVITIES
Former Manufactured Gas Plant Site
George Rogers Clark National Historical Park
Vincennes, IN

area. In the event that soil disturbing work must be done immediately, Park personnel should advise the Project Manager of the work as soon as possible.

2. Park personnel should conduct a tailgate meeting to inform all parties performing soil disturbing work of the following:
 - potential for encountering contaminated soil or MGP-related residues during the work;
 - personal protective equipment and decontamination procedures to be used during routine, non-contaminant related work, if any;
 - work stoppage procedure if unanticipated conditions are encountered; and
 - response notification procedures and contacts.
3. For equipment contacting subsurface site soils, dry removal of dirt from tires and bucket or blade in the immediate vicinity of the work using brooms should be performed, at a minimum. If visual or olfactory evidence of contamination is noted and equipment contacts that soil, the equipment shall be pressure washed over an impermeable catchment (e.g., plastic tarp) in the immediate vicinity of the work, and the wash water and debris containerized, characterized, and properly disposed off-site.

If unanticipated conditions are encountered, such as visual or olfactory evidence of chemical impact, coal-like solids, and/or oily or tarry liquids, the party conducting the work should stop work and secure the work area. Once worker health and safety are ensured, the party conducting the work should notify the Park Superintendent, who will notify the GERO MGP Project Manager, that possible contaminated soil has been encountered.

Any previously unidentified environmental conditions encountered during construction or maintenance activities should be documented by Park personnel. Documentation should include a written summary of observations as well as photographs, if possible.

RESPONSE NOTIFICATION AND CONTACTS

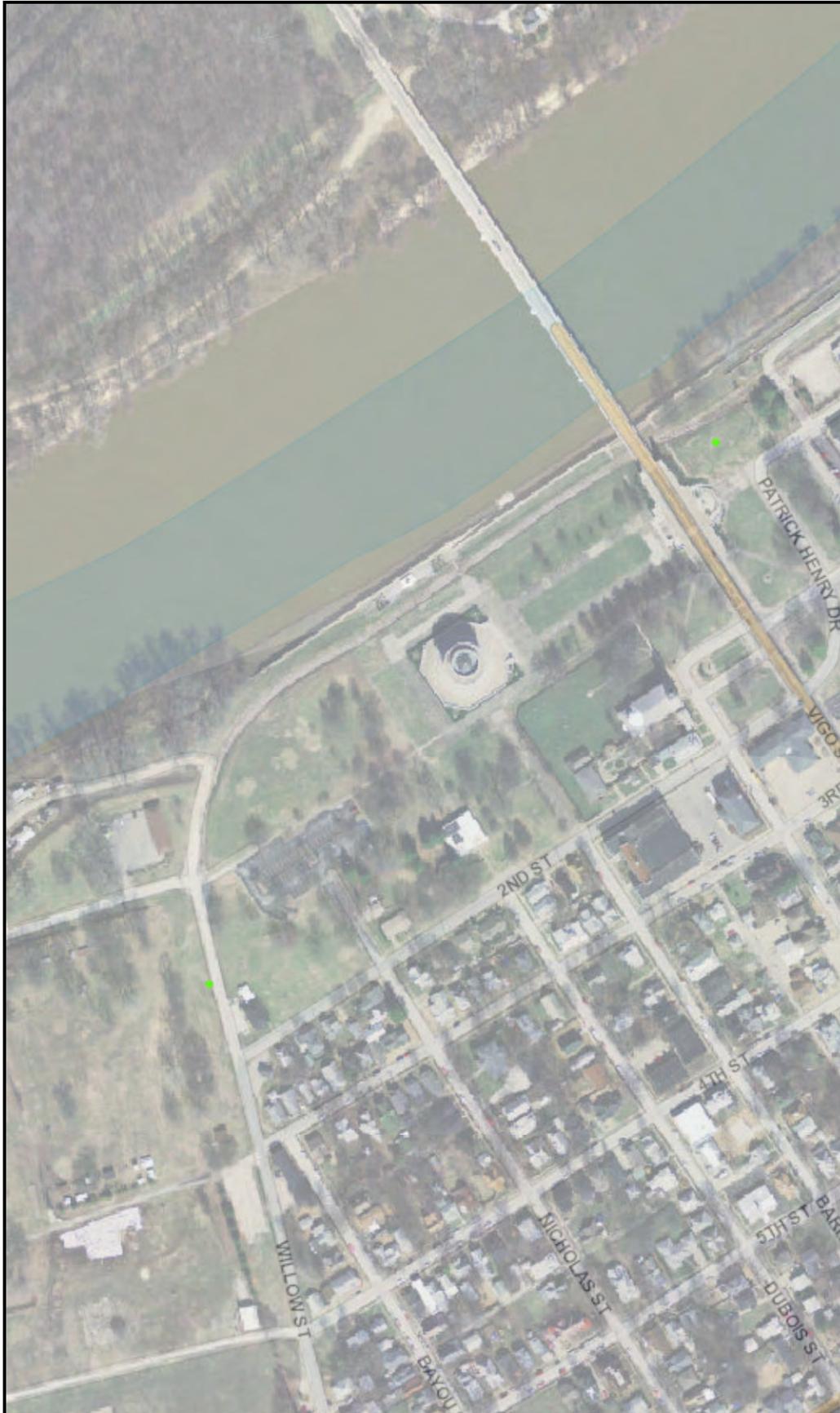
If personnel believe that on-site action may be required in response to the discovery or indication (visual or smell) of apparent contamination to protect the environment, the health and safety of on-site workers and the public, or Park resources, and/or to contain the contamination, notifications for on-site environmental response will proceed according to the following notification list:

GERO Park Superintendent – Brian McCutchen
812-882-1776 Ext 202 (work)
812-291-1002 (cell)
brian_mccutchen@nps.gov

GERO MGP Project Manager - Bettina Longino
The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602
802-229-4600 (work)
802-522-9155 (cell)
blongino@jcomail.com

Appendix F

Additional Maps & Information



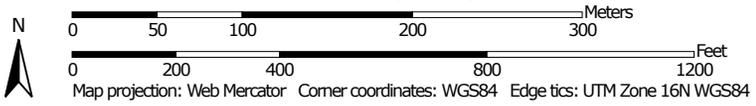
Legend

- 0 - 100
- 101 - 200
- 201 - 500
- 501 - 1000
- 1001 - 10000
- Located
- Location Estimated
- Red: Band_1
- Green: Band_2
- Blue: Band_3

Soil Map—Knox County, Indiana, and Lawrence County, Illinois
(Vincennes Levee Project (GERO))



Map Scale: 1:4,420 if printed on A landscape (11" x 8.5") sheet.



Soil Map—Knox County, Indiana, and Lawrence County, Illinois
(Vincennes Levee Project (GERO))

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,800 to 1:42,200.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Knox County, Indiana
Survey Area Data: Version 11, Dec 12, 2011

Soil Survey Area: Lawrence County, Illinois
Survey Area Data: Version 5, Jan 20, 2012

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 27, 2011—Oct 5, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Knox County, Indiana (IN083)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
La	Landes loamy sand, rarely flooded	10.4	13.6%
SdA	Stockland sandy loam, 0 to 2 percent slopes	46.5	60.5%
W	Water	11.2	14.6%
Subtotals for Soil Survey Area		68.1	88.7%
Totals for Area of Interest		76.8	100.0%

Lawrence County, Illinois (IL101)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3306	Allison silty clay loam, frequently flooded	2.4	3.1%
W	Water	6.3	8.2%
Subtotals for Soil Survey Area		8.7	11.3%
Totals for Area of Interest		76.8	100.0%



U.S. Fish and Wildlife Service National Wetlands Inventory

Vincennes Levee Project

Sep 12, 2013

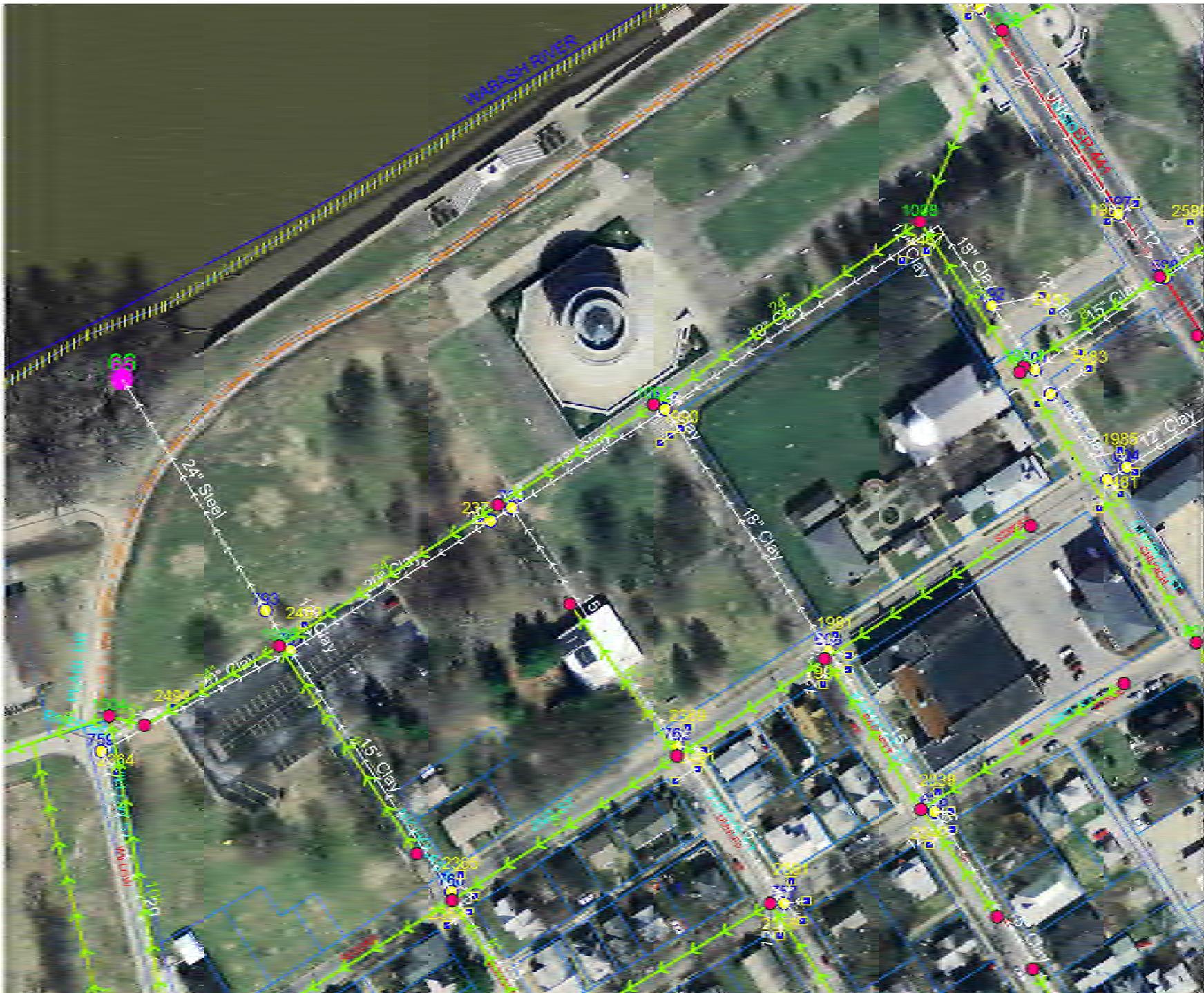


Wetlands

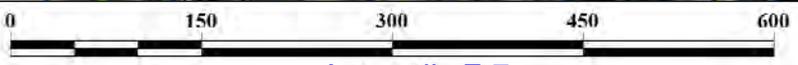
- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:



- Parcels
- Storm Structure
- WW Lift Stations
- Storm Outfall
- Storm Outfall Permit
- Storm Manholes
- Storm Inlets
- WW Manhole
- Hydrology
- - - Railroads
- Local Roads
- Highways
- ||||| Corporation Boundary
- Storm Open Ditches
- Storm Gravity Main
- Storm Force Main
- Storm Culverts
- WW Tap
- WW Gravity Main
- WW Force Main



Appendix F-7



People QuickFacts	Vincennes	Indiana
Population, 2012 estimate	18,239	6,537,334
Population, 2010 (April 1) estimates base	18,423	6,483,800
Population, percent change, April 1, 2010 to July 1, 2012	-1.0%	0.8%
Population, 2010	18,423	6,483,802
Persons under 5 years, percent, 2010	5.9%	6.7%
Persons under 18 years, percent, 2010	19.2%	24.8%
Persons 65 years and over, percent, 2010	15.0%	13.0%
Female persons, percent, 2010	49.7%	50.8%
White alone, percent, 2010 (a)	91.9%	84.3%
Black or African American alone, percent, 2010 (a)	4.7%	9.1%
American Indian and Alaska Native alone, percent, 2010 (a)	0.3%	0.3%
Asian alone, percent, 2010 (a)	0.7%	1.6%
Native Hawaiian and Other Pacific Islander alone, percent, 2010 (a)	Z	0.0%
Two or More Races, percent, 2010	1.7%	2.0%
Hispanic or Latino, percent, 2010 (b)	1.9%	6.0%
White alone, not Hispanic or Latino, percent, 2010	90.9%	81.5%
Living in same house 1 year & over, percent, 2007-2011	74.7%	84.4%
Foreign born persons, percent, 2007-2011	2.0%	4.5%
Language other than English spoken at home, percent age 5+, 2007-2011	3.2%	7.9%
High school graduate or higher, percent of persons age 25+, 2007-2011	82.7%	86.6%
Bachelor's degree or higher, percent of persons age 25+, 2007-2011	14.8%	22.7%
Veterans, 2007-2011	1,331	478,030
Mean travel time to work (minutes), workers age 16+, 2007-2011	17	23.1
Housing units, 2010	8,259	2,795,541
Homeownership rate, 2007-2011	61.4%	71.1%
Housing units in multi-unit structures, percent, 2007-2011	24.4%	18.5%
Median value of owner-occupied housing units, 2007-2011	\$78,700	\$123,300
Households, 2007-2011	7,041	2,472,870
Persons per household, 2007-2011	2.29	2.53
Per capita money income in the past 12 months (2011 dollars), 2007-2011	\$18,614	\$24,497
Median household income, 2007-2011	\$32,918	\$48,393
Persons below poverty level, percent, 2007-2011	21.6%	14.1%
Business QuickFacts	Vincennes	Indiana
Total number of firms, 2007	1,240	482,847
Black-owned firms, percent, 2007	F	4.6%
American Indian- and Alaska Native-owned firms, percent, 2007	F	0.5%
Asian-owned firms, percent, 2007	S	1.8%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.0%
Hispanic-owned firms, percent, 2007	F	1.8%
Women-owned firms, percent, 2007	25.2%	26.8%
Manufacturers shipments, 2007 (\$1000)	D	221,877,814
Merchant wholesaler sales, 2007 (\$1000)	127,506	67,634,947
Retail sales, 2007 (\$1000)	402,346	78,745,589
Retail sales per capita, 2007	\$22,480	\$12,408
Accommodation and food services sales, 2007 (\$1000)	51,979	11,669,759
Geography QuickFacts	Vincennes	Indiana
Land area in square miles, 2010	7.41	35,826.11
Persons per square mile, 2010	2,485.6	181
FIPS Code	79208	18
Counties	Knox County	
(a) Includes persons reporting only one race.		
(b) Hispanics may be of any race, so also are included in applicable race categories.		
FN: Footnote on this item for this area in place of data		
NA: Not available		
D: Suppressed to avoid disclosure of confidential information		
X: Not applicable		
S: Suppressed; does not meet publication standards		
Z: Value greater than zero but less than half unit of measure shown		
F: Fewer than 100 firms		
Source: US Census Bureau State & County QuickFacts		



NEW MEXICO

OKLAHOMA

ARKANSAS

TENNESSEE

NORTH CAROLINA

SOUTH CAROLINA

Vincennes Levee

Legend:

Boundaries

- State
- '12 County

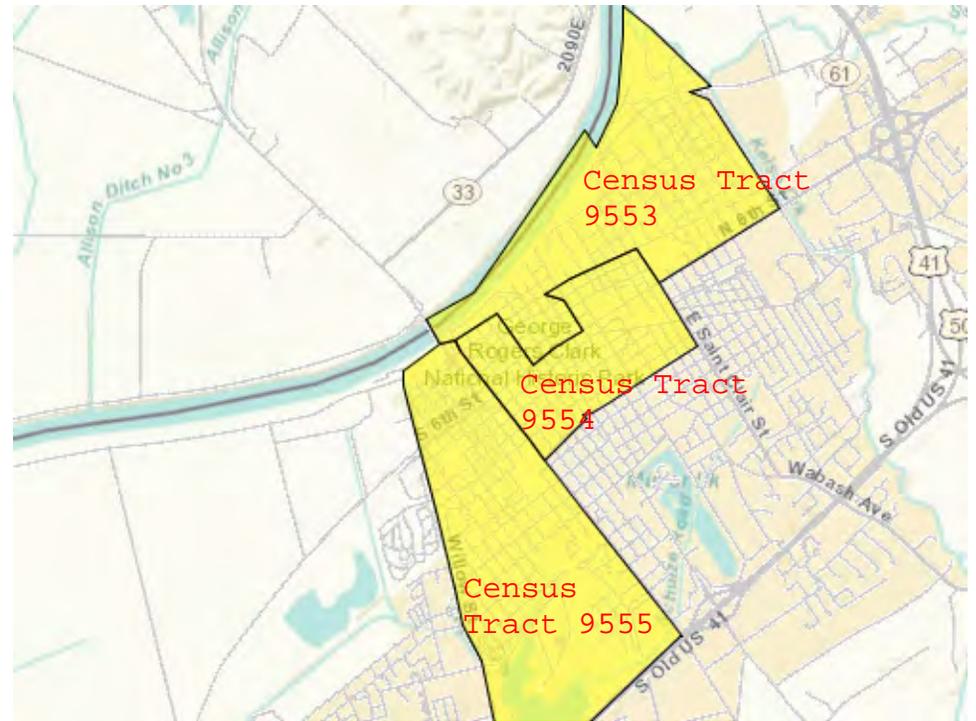
Features

- Major Road
- Street
- Stream/Waterbody

Items in grey text are not visible at this zoom level

Your Selections

- Your Selections



Environmental Justice Analysis for Vincennes Levee Modification & Wastewater Infrastructure project (NPS)

		COC	AC1	AC3	AC3
		City of Vincennes, Indiana	Census Tract 9555, Knox County, Indiana	Census Tract 9554, Knox County, Indiana	Census Tract 9553, Knox County, Indiana
LOW-INCOME					
B 17001001	Population for whom poverty status is determined: Total	15,878	3,326	1,624	1,618
B 17001002	Population for whom poverty status is determined: Income in past 12 months below poverty	3,511	548	440	535
Percent Low-Income		22.1%	16.5%	27.1%	33.1%
125 Percent of COC		27.6%	AC>125% COC	AC>125% COC	AC>125% COC
Potential Low-Income EJ Impact?			No	No	Yes
MINORITY					
B 03002001	Total population: Total	18,369	3,407	1,855	3,542
B 03002002	Total population: Not Hispanic or Latino	18,066	3,381	1,731	3,473
B 03002003	Total population: Not Hispanic or Latino; White alone	16,718	3,248	1,653	2,807
B 03002004	Total population: Not Hispanic or Latino; Black or African American alone	896	133	60	603
B 03002005	Total population: Not Hispanic or Latino; American Indian and Alaska Native alone	24	0	0	0
B 03002006	Total population: Not Hispanic or Latino; Asian alone	215	0	0	54
B 03002007	Total population: Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0	0	0
B 03002008	Total population: Not Hispanic or Latino; Some other race alone	0	0	0	0
B 03002009	Total population: Not Hispanic or Latino; Two or more races	213	0	18	9
B 03002010	Total population: Hispanic or Latino	303	26	124	69
B 03002011	Total population: Hispanic or Latino; White alone	200	19	72	25
B 03002012	Total population: Hispanic or Latino; Black or African American alone	0	0	0	0
B 03002013	Total population: Hispanic or Latino; American Indian and Alaska Native alone	12	0	0	12
B 03002014	Total population: Hispanic or Latino; Asian alone	0	0	0	0
B 03002015	Total population: Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0	0	0
B 03002016	Total population: Hispanic or Latino; Some other race alone	91	7	52	32
B 03002017	Total population: Hispanic or Latino; Two or more races	0	0	0	0
Number Non-White/Minority (P007001-P007003)		1,651	159	202	735
Percent Non-White/Minority		9.0%	4.7%	10.9%	20.8%
125 Percent of COC		11.2%	AC>125% COC	AC>125% COC	AC>125% COC
Potential Minority EJ Impact?			No	No	Yes



Standard Operating Procedure for Greenway Walking Trails and Bike Paths on Levees



30 November 2010

1) General:

- a) **USACE Levee Safety Letter of No Objection (LNO):** Written approval from the USACE Levee Safety Officer is required before any work is performed on the levee.
- b) **A/E Construction Drawings and Specifications:** All proposed levee trails shall be designed by competent licensed engineers and the submittal of a complete set of project plans and specifications is required before USACE Levee Safety Officer approval is granted.
- c) **Notification of Utility Companies:** All local utility companies shall be contacted in the vicinity of proposed construction to allow for utility relocations.
- d) **Work Easements and Right-of-Entries:** Permission from property owners shall be acquired.

2) Trail Design:

- a) **Trail Width:** Trail widths shall not be permitted to exceed the existing width of the levee crown and in no instance be allowed wider than 12 feet.
- b) **Bollards/Lighting:** Bollard and lighting bases shall be encapsulated in concrete. These shall not exceed a two foot embedment depth and shall be constructed of a suitable, safe, permanent material.
- c) Bollards or gates are required at all access points to allow only authorized vehicle traffic.

3) Earthwork:

- a) **Excavation:**
100-year protection levees: The levee crown shall not be excavated beyond minimal stripping of sod. The stripped crown shall be proof rolled before any aggregate stone is placed for the subbase. If excessive pumping or rutting occurs the material shall be removed and replaced with suitable material from an approved borrow location.

500-year protection levees: All suitable material that is excavated free of sod, excess stone, or other organic material shall be stored for reuse to facilitate final grading and for use as fill on overbuilt ramp sections. The excavated crown shall be proof rolled before any aggregate stone is placed for the subbase. If excessive pumping or rutting occurs the material shall be removed and replaced with suitable material from an approved borrow location.



b) **Fill Material:**

100-year protection levees: All material to be utilized for fill on levee slopes or low spots in the crown shall be acceptable cohesive material (USCS CL, CL-ML, or SC) and all necessary laboratory and field tests required for compaction verification shall be performed. Existing slopes shall be compacted to 95% Standard Proctor per ASTM D698. Loose lifts shall be limited to 6" for all work on the levee. Proof rolling shall be utilized. All low areas of the levee crown shall be raised to the As-Built Elevation.

500-year protection levees: All material to be utilized for fill on levee slopes shall be of acceptable cohesive material (USCS CL, CL-ML, or SC) and all necessary laboratory and field tests shall be performed to insure proper compaction is met. Constructed ramps/slopes shall be compacted to 95% Standard Proctor per ASTM D698. Fill material shall be compacted loose lifts not to exceed 6-inches for all work on the levee. Proof rolling shall be utilized.

- c) **Benching of Ramps:** Ramps that extend from the levee toe to the levee crown (or any portion thereof) shall be benched into the existing levee to create a continuous well-integrated soil mass in accordance with the Louisville District *Benching Procedures within Levee Embankments* SOP. All benching shall coincide with the existing slope and consist of approved material compacted to 95% Standard Proctor per ASTM D698. The most common benching dimensions are given for a 10' horizontal length and a 3.33' rise. The benching slope shall coincide with the existing embankment slope and shall not be steeper than 3 (H):1 (V). Loose-lift thickness shall be limited to 6" for all work on the levee crown.
- d) **Soil Stabilization:** Spray on Adhesives and Calcium chloride shall not be used as a soil stabilization method on the levee embankment. If the levee is too wet as determined by the COR or if visible rutting or pumping is occurring work on site shall be stopped until conditions improve as determine by COR.
- e) **Maintain Positive Drainage:** All paths and trails shall have a minimum 2% transverse slope to drain water down slope. Water shall not be allowed to pond at or near the levee/ramp toe and shall have adequate drainage measures undertaken to reasonably prevent ponding water. Ramps and other soil structures that are added to the existing levee must drain away from the levee. Interior drainage between the levee and the ramp is not permitted.
- f) **Pumping Station Air Vent and Siphons:** These structures are typically located between two and four feet below the levee crown with their risers protruding out of the ground. These Structures shall not be removed from the levee trail to facilitate construction. Photos of the structures shall be taken before work so that the condition of the structures can be assessed after work is completed. No excavations shall be permitted deeper then 1 foot below the levee crown in these locations.
- g) **Pipes:** Pipes or culverts shall not be removed without USACE permission.



4) Subgrade:

- a) **Compacted Aggregate Base:** Compacted aggregate subbase shall be placed in accordance with State DOT Specifications. Compacted aggregate shall not be placed below the 100-year protection elevation.
- b) **Stripping:** The levee crown shall be stripped of all vegetation. Vegetation stripping shall be limited to 2 feet beyond the intended trail width.
- c) **Grading/Compaction:** Compacted aggregate shall be placed above ground. Each lift of aggregate shall be compacted with a suitable roller or vibrating compactor until the base is compacted to 95% Standard Proctor per ASTM D698.
- d) **Base Course Depth:** The base course shall not exceed 12 inches in depth. The aggregate shall be compacted with sloped edges on a maximum 1:1 slope. The base of the sloped edges shall be a minimum of 12" from the crown's edge.
- e) **Base Side Slopes:** Side slopes shall be compacted and placed in lifts simultaneously with all other aggregates.
- f) **Geotextiles:** The use of Contech, Tensar BX1100 Geogrid Fabric or equivalent is recommended to reduce the amount of stone required.

5) Pavement:

- a) **Pavement:** All pavement shall be constructed in accordance with State DOT Specifications for Hot Mix Asphalt (HMA) Pavement and shall be maintained by such recommendations.
- b) **Thickness:** A uniform thickness of asphalt shall be placed to include both surface and intermediate courses.
- c) **Asphalt Cover:** Asphalt Cover shall completely cover compacted aggregate subbase including the sloped edge portion.
- d) **Approved Castings:** Asphalt Pavement shall not be placed such that it covers or conceals any structures necessary for successful operation or maintenance of the levee including but not limited to survey monuments, valves, relief wells, manholes, closure structures, toe drains, etc. If covering such components is necessary, approved castings shall be utilized to provide access.

A typical installation is provided in Figure 1. Installations on the levee crest can utilize slab construction, while installations in areas that may become saturated must include a footer extending below frost line. Note that a bond-breaker separation must be installed between the monument and the concrete slab to prevent the monument from moving with the slab/footer.

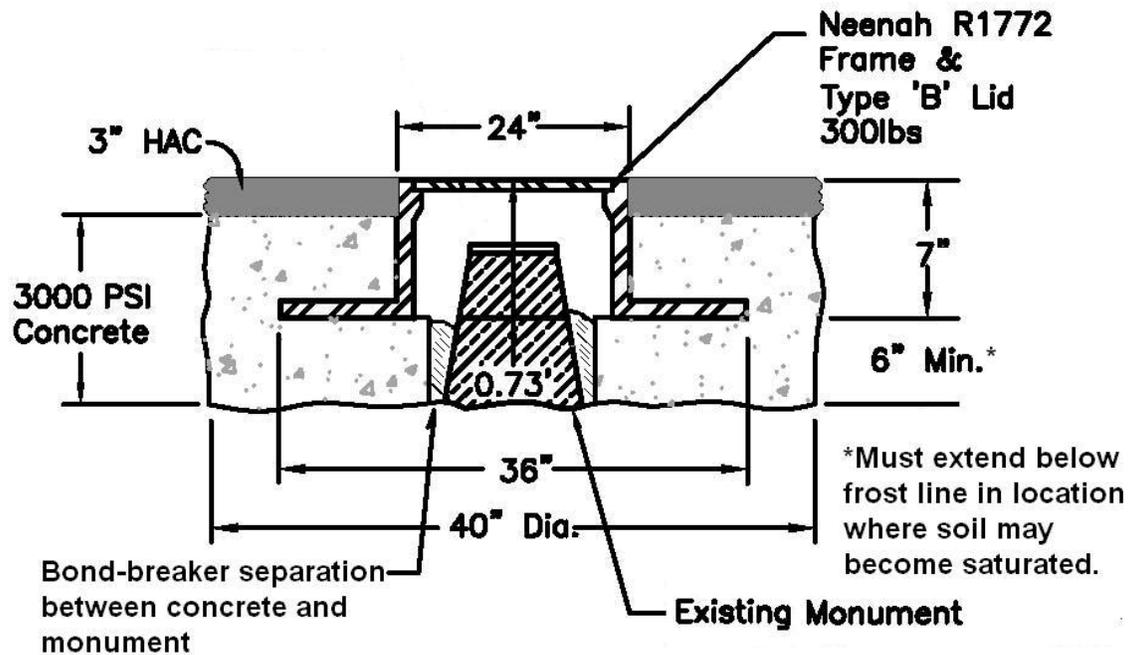


Figure 1. Typical manhole protection for existing monument.

6) Landscaping and Seeding:

- a) Landscaping and Seeding shall be accomplished in accordance with the Operations and Maintenance Manual for the subject Project.

7) ADA Requirements:

- a) All ADA Requirements shall be in compliance with recommendations from : *Part II Architectural and Transportation Barriers Compliance Board 36 CFR Part 1195 Architectural Barriers Act (ABA) Accessibility Guidelines for Outdoor Developed Areas; Proposed Rule (June 20, 2007)* and shall comply with all future revisions.
- b) ADA requirements for all other parking and facility needs shall be met as needed.
- c) Signage indicating handicapped access and other vital information shall be included per State Manual on Uniform Traffic Control Devices recommendation.

Assessment of Major Businesses, Government Facilities, Educational Facilities, Medical Facilities, and Visitor Destinations (as of February 2014)

GOVERNMENT + UTILITIES	EDUCATION	VINCENNES UNIVERSITY BUILDINGS	CULTURAL	CEMETERIES
Vincennes Fire Dept	Tecumseh-Harrison Elementary	6 Residence halls 3 sport facilities including: - Beless Gym - PE complex	Harrison Mansion	Mt Calvary Cemetery
US Post Office	George Rogers Clark School	- Green Activities Center	St Vincent De Paul Society	Greenlawn Cemetery
USDA Rural Development	Little Scholars Preschool	8 Academic Buildings	Northwest Territory Art Guild Gallery	Fairview Cemetery
US Social Security Administration	Vincennes Beauty College	Tecumseh Dining Center	Old Town Players Theatre	Memorial Park Cemetery
Vincennes Housing Authority	Texas Migrant Council (preschool)	Red Skelton Performing Arts Center & Museu	Vincennes Masonic Lodge	B'Nai-Israel Cemetery
Vincennes Water Department	Francis Vigo Elementary School	Governors Hall (admissions)	Hall of Hollywood Hoosiers	
Vincennes City Treasurer	Flagert Elementary School	Beckes Student Union	Michel Brouillet House	
Knox County Superior Court II	Washington Elementary School	Dayson Alumni Center	Old Cathedral Brute Library	
Knox County Development Corporation	Benjamin Franklin Elementary School	Shake Learning Resources Library/Lewis Histc	Knox County Public Library	
US Veterans Employment	Sacred Heart Schools	Young Building - State-wide Services	Fort Knox II (historical site)	
County Association for Retarded Citizens	James Whitcomb Riley Elementary School	Homeland Security Building 3 Historic Buildings including: - Jefferson Academy Building - Indiana Terriroty Capitol Building - Elihu Stout Print Shop	Indiana Military Museum	
Knox County Chamber of Commerce	Saint Rose Academy		McGrady-Brockman Regional Genealogical/Historical Center	
Knox County Humane Society	Rivet High School		Old French House & Indian Museum	
Police Records & Information	Saint Johns School (2)		Old State Bank (historical site)	
Knox County Clerk	Lasalle Elementary School		Vincennes State Historic Sites (historic bldg)	
Indiana Army National Guard & Armory	Twin Rivers Vocational Area		Sugar Loaf Indian Mound	
Knox County Offices	Harrison School		USS Vincennes Monument (NOT A BLDG)	
Vincennes Mayor's Office	YMCA		The Open Gallery	
Vincennes Waste Water Facility			"Vincennes Historic Farmers Market" Riverfront Pavillion	
Knox County Health Office				
Knox County Immunization Clinic				
Knox County Solid Waste Management				
US Consolidated Farm Services Agency			St Vincent De Paul Society	
Sunrise Energy LLC (gas company)			American Legion	
US Army Recruiting			Loyal Order of Moose	
Knox County Communications			Vincennes Civitan Club	
Knox County Records Library			Faternal Order of Eagles	

Assessment of Major Businesses, Government Facilities, Educational Facilities, Medical Facilities, and Visitor Destinations (as of February 2014)

RESTAURANTS	CHURCHES	Other	MEDICAL	Hotels/Inns/Apartments
McDonalds	First Church of the Nazarene	Old National Bank	Good Samaritan Hospital	Vincennes Park Apartments
Dragon 2000	St John's United Church-Christ	Hoses Done Right (manuf)	Cardiovascular Consultants of Vincennes	Super 8 Vincennes (motel)
Montana Mike's Steakhouse	St James Episcopal Church	Miller Construction Company,	Vincennes Orthopaedic Surgery Clinic, Inc.	Econolodge
Subway	Bethany Presbyterian Church	Old National Bank	Samaritan Center	Quality Inn
Pizza Hut	St John Lutheran Church	Regions Bank	Vincennes Radiology: John Mathis J DO	Holiday Inn Express Vincennes
The Café Moonlight	Assembly of God New Life	Goodwill	Medical Center of Vincennes: Medical Lab.	Harrison Inn
Dot's Custom Cakes & Catering	First United Methodist Church	Walgreens	Good Samartian Hospital Physicians	Marriott TownePlace Suites Vincennes
Old Town Tavern	Old Cathedral Catholic Church (historic)	Old Post Bookstore		
Cincinnati Saloon	Vincennes Free Methodist Church	Dollar General		
Byron Bobe's Pizza House	Westminster Presbyterian Church	Mc Coy's Grocery		
I'Mpressed Coffee Company	First Church of God, Vincennes	Jay-C Foods (grocery)		
Rally's	Faith Babtist Church	Knox Plaza (shopping 5 storefronts)		
Gatti's Pizza	Ridgecrest Southern Baptist	Rural King Supply		
McDonalds	Sacred Heart of Jesus Parish	German American Bank, Insurance & Investments		
Wendy's	Thursday Church	IUOE (Labor union)		
Fazoli's	New Heart Church	Tractor Supply Company		
Procopio	St Francie Xavier	Heritage State Bank		
Wonder Bread Bakery	Another Chance Christ Ministries	Froeschke's Produce		
Zip and Sip	Christ Community Church	Tri-State Bearing (manuf)		
Jimmy John's		Halter's Market (garden nursery)		
Buffalo Wild Wings		Cash & Dash (market)		
Papa John's Pizza				
China House				
Old Thyme Diner				
Patty Cakes				
Dairy Queen				
Baker's Alley				
Willie's Pub				
Dutch Pantry				
La Fiesta Mexican				
Kut-Ups of Knox County				