

# Emergency Action Plan Surface Impoundment

Richmond Power and Light Company  
Whitewater Valley Station  
Wayne County, Indiana

GAI Project Number: C151119.17, Task 001

Revised December 2021



Prepared by: GAI Consultants, Inc.  
Murrysville Office  
4200 Triangle Lane  
Export, Pennsylvania 15632

Prepared for: Richmond Power & Light  
2000 U.S. 27 South  
P.O. Box 908  
Richmond, Indiana 47374

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Engineering Manager



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John Klamut, P.E.  
Senior Project Manager

## Certification/Statement of Professional Opinion

This Emergency Action Plan (EAP) for the Whitewater Valley Power Station (Station) Surface Impoundment was prepared by GAI Consultants, Inc. (GAI). The EAP may contain findings and determinations that are based on certain information that, other than for information GAI originally prepared, GAI has relied on but not independently verified. This Certification/Statement of Professional Opinion is therefore limited to the information available to GAI at the time the Assessment was written. On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the State of Indiana that this EAP has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, at the same time, and in the same locale. It is my professional opinion that the EAP was prepared consistent with the requirements of § 257.73(a)(3) of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 (40 CFR 257 Subpart D), and meeting the provisions of the "Extension of Compliance Deadlines for Certain Inactive Surface Impoundments: Response to Partial Vacatur," effective October 4, 2016.

The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

GAI Consultants, Inc.

  
John R. Klamut, P.E.  
Engineering Manager



Date 12/17/2021

## Acronyms

CCR	Coal Combustion Residuals
CCR Rule	"Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" 40 CFR 257 Subpart D (2015)
CFR	Code of Federal Regulations
EAP	Emergency Action Plan
EPA	United States Environmental Protection Agency
GAI	GAI Consultants, Inc.
Impoundment	Surface Impoundment
IN	Indiana
RP&L	Richmond Power & Light
Station	Whitewater Valley Station
WCEMC	Wayne County Emergency Management Coordinator

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## 1.0 Basic Information

Name of Structure:	CCR Disposal Surface Impoundment
State ID No.:	89-UP-04
Hazard Potential Classification:	Significant (as defined in the CCR Rule)
Owner:	Richmond Power and Light
Address:	2000 U.S. 27 South, P.O. Box 908, Richmond, IN 47374
Tel:	765.973.7200
Responsible Individual/ General Manager:	Tony Foster
Tel:	765.973.7271
Assistant General Manager:	Skip Moore
Tel:	765.973.7302
Line Superintendent:	Aaron Haller
Tel:	765.973.7241
	Cell 765.969.0609
Buildings and Grounds:	Jamie Field
Tel:	765.969.4959
Wayne County Emergency Management Coordinator (WCEMC):	Matthew Cain / Director
Address:	401 East Main Street, Richmond, IN 47374
Tel:	765.973.9399
Richmond Police Department:	Mike Britt / Chief of Police
Address:	50 N 5 <sup>th</sup> Street, Richmond, IN 47374
Tel:	765.983.7247
Wayne County Fire and EMS Department:	Jerry Purcell / Fire Chief
Address:	101 South 5 <sup>th</sup> Street, Richmond, IN 47374
Tel:	765.983.7266 / 765.962.1808

## 2.0 Statement of Purpose

The Whitewater Valley Station (Station) is in Richmond, Wayne County, Indiana (IN) and owned by Richmond Power and Light (RP&L). A Surface Impoundment (Impoundment) at the Station, located at approximately coordinates 39° 48' 12.9" North and 84° 53' 54.8" West, is used for the long-term storage of Coal Combustion Residuals (CCR). The Impoundment is in the northwestern corner of the property, and discharges to an internal Stormwater Management (SWM) Pond, also known as Pond P1 – P3.

The purpose of this Emergency Action Plan (EAP) is to provide critical information and a plan of action in the event of an emergency at the Impoundment. The EAP:

- Defines the events representing a safety emergency;
- Describes procedures used to detect a safety emergency;
- Defines responsible persons, responsibilities, and notification procedures;
- Provides contact information for emergency responders;
- Delineates inundation areas downstream of the Impoundment embankment; and
- Provides for an annual face-to-face meeting between RP&L and local emergency representatives.

This plan is intended to meet the requirements of 40 CFR 257.73(a)(3) of the Federal Disposal of Coal Combustion Residuals from Electric Utilities Final Rule (CCR Rule). Pursuant to § 257.73(a)(2) of the CCR Rule, a hazard potential classification assessment was performed for the Impoundment in April 2018. The assessment of the Impoundment resulted in a hazard potential classification of "significant hazard" under the CCR Rule.

## 3.0 Emergency Action Plan Overview

Three safety emergency stages, ranked by severity, will be established for the Surface Impoundment.

### Emergency Stage Definitions

Stage 1: Non-Emergency – failure is unlikely, and storm development is slow in advancing to a potential emergency. This stage indicates a situation is developing such that the embankment is not in danger of failing, but if it continues failure may be possible.

Stage 2: Potential Failure – storm development that could result in failure of the embankment is quickly accelerating. This stage indicates that a situation is developing that could result in an embankment failure.

Stage 3: Imminent Failure – storm development has reached a point that the failure of the embankment has started or is imminent. This stage indicates embankment failure is expected or occurring and may result in flooding that will threaten life and/or property downstream of the embankment.

Stage 2 conditions include Stage 1 conditions and responsibilities, and Stage 3 conditions include both Stage 1 and Stage 2 conditions and responsibilities.

The Impoundment Owner or Designee may use the following table to assess weather conditions and operational conditions at the Impoundment to determine the appropriate actions for notifying emergency personnel during potential and actual emergencies.

Rain Gauge – A Rain Gauge which is internet accessible is located at the weather forecast office in Wilmington, Ohio and operated by the National Weather Service. Rain gauge monitoring in this EAP

therefore references to obtaining rainfall data from the Wilmington gauge. If the Wilmington gauge is unavailable an appropriate alternate gauge may be used.

Normal methods of detecting potential emergency situations at the embankment consist of surveillance monitoring. For conditions beyond the normal range of operations, contact the Wayne County Emergency Management Coordinator (WCEMC) for assistance evaluating the conditions. Step by step procedures are listed in the table below.

#### EAP Procedures

<b>Step 1: Emergency Condition Detection</b>	Event Detection: See Section 4		
<b>Step 2: Emergency Level</b>	Assess Situation: Determine Emergency Level Using Section 6		
	<b>Stage 1</b>  Non-Emergency Incident  Slowly Developing Situation  See Definition Above	<b>Stage 2</b>  Potential Embankment Failure Situation  Quickly Developing Situation  See Definition Above	<b>Stage 3</b>  Urgent  Embankment Failure is Imminent or In Progress  See Definition Above
<b>Step 3: Notification and Communication</b>	<b>Stage 1</b>  Notification List  See Section 5.2	<b>Stage 2</b>  Notification List  See Section 5.2	<b>Stage 3</b>  Notification List  See Section 5.2
<b>Step 4: Expected Action</b>	Inspect Embankment and Rain Gauge Every 6 hours  Monitor and Listen to Weather Forecasts	Inspect Embankment and Rain Gauge Every 2 hours  Notify Emergency Responders	Continuous Inspection of Embankment and Rain Gauge  Continuous Contact with Emergency Responders
<b>Step 5: Termination and Follow Up</b>	Termination of Monitoring Conditions at the Embankment and proceed to evaluate damages and plans for repairs		

## 4.0 Emergency Detection, Evaluation, and Classification

The Impoundment Owner/Responsible Individual is responsible for operation and maintenance of this Impoundment. The Impoundment Owner/Responsible Individual, Line Superintendent, and Chief Engineer are responsible for monitoring conditions at the embankment and notifying the WCEMC when emergency stage conditions are activated.

The Impoundment Owner/Responsible Individual may initiate this EAP based on the issuance of a flood watch or warning in the area, or if conditions at the Impoundment indicate that water levels will rise to various pre-determined levels. Embankment erosion or any of the other conditions described in this section may also dictate initiation of the emergency action. While it is the Impoundment owner's responsibility to initiate this process, the WCEMC may contact the Impoundment owner to inform the



team that a flood watch has been issued locally by the National Weather Service (NWS) and team members would initiate their duties as required in this EAP.

Visual indications of water depth in the Impoundment (including in the SWM Pond) is the best indication of flood conditions and should be used as an indicator of the potential impacts downstream. In the absence of actual depth in the Impoundment, measured rainfall depths in inches monitored in the contributing watershed may be used to determine the emergency level. Visual observations should be made by a team member so that accurate and up to date information can be provided to the WCEMC.

#### **4.1 Water Depth in the Impoundment and Stormwater Management Pond**

Pool level in the Impoundment and SWM Pond is the prime indicator of flooding conditions.

**Initiate a Stage 1 Condition when the pool level in Impoundment reaches the internal embankment (between the Impoundment and SWM Pond).**

**Initiate a Stage 2 Condition when the pool level in the SWM Pond reaches the external (north/west) embankments.**

**Initiate a Stage 3 Condition when the water level in the Impoundment and/or SWM Pond overtops the external (north/west) embankments.**

#### **4.2 Rainfall Depths**

Rainfall depths for various storm durations are another indicator of potential flooding conditions.

**Initiate a Stage 1 Condition upon issuance of NWS flood warnings or for a continuous rainfall longer than 24 hours of any depth at the closest NWS gage (Wilmington, Ohio).**

**Initiate a Stage 2 Condition for a rainfall exceeding 7.26 inches in a 24-hour or less period.**

#### **4.3 Observation Frequency**

Embankment observations shall occur at frequencies determined by the Emergency Stage condition:

**Stage 1 conditions – observations shall occur at six-hour intervals**

**Stage 2 conditions – observations shall occur at two-hour intervals**

**Stage 3 conditions – continuous observation**

Observers should use safety measures and be aware of the potential for flooded roads along the route to the embankment. Monitoring and surveillance of conditions at the embankment will continue under emergency conditions if safety is not in question.

#### **4.4 Public Roads Downstream of the Impoundment**

South 5<sup>th</sup> Street is a public road located northeast of the Impoundment. South 5<sup>th</sup> Street serves as an alternate access road to the Station, and serves businesses. The WCEMC and/or Richmond Police Department will be contacted to limit access to the road as needed.

#### **4.5 Additional Emergency Conditions**

The following table is to be used to initiate emergency conditions during events other than those related to precipitation and pool levels. If any of these conditions are observed, the Owner's General Manager should be contacted for further discussion, observation, and/or technical direction.

Event	Situation	Stage Level
Seepage	New seepage areas on or near the embankment	1
	New seepage areas with cloudy discharge or rapidly increasing flow rate	3
Sinkholes	Observation of new sinkhole on embankment	1
	Rapidly enlarging sinkhole or development of multiple sinkholes	3
Embankment Cracking	New cracks in embankment greater than ¼ inch wide without seepage	1
	Cracks in embankment with clear seepage	1
	Cracks in embankment with rapidly increasing seepage	3
Embankment Movement	Visual movement of the embankment slope	1
	Sudden or rapidly progressing slides of the slopes	3
Vortex in pond	Whirlpool with discharge downstream	3
Earthquake	Measurable earthquake felt or reported on or within 50 miles of the embankment	1
	Earthquake resulting in visible damage to the embankment	1
	Earthquake resulting in potential uncontrolled release of water or CCR from the embankment	3
Security Threat, Sabotage, and Vandalism	Verified bomb threat that, if carried out, could result in damage to the embankment	1
	Detonated bomb that has resulted in damages to the embankment or its appurtenances	1
	Damage to the embankment or appurtenances with no impacts to the functioning of the embankment	1
	Damage to the embankment or appurtenances that has resulted in seepage flow	1
	Damage to the embankment or appurtenances that has resulted in potential uncontrolled water or CCR release	3
Flooding	Water levels within the internal embankment between Impoundment and SWM Pond overtop the crest	2
	Water levels within the Impoundment are at or above the external (west/south) embankment crest at any location	3

## 4.6 Relaxation of Emergency Conditions

Emergency conditions can be rescinded when the following events occur:

- The NWS ends a flash flood warning.
- After heavy rains have ended, the water level in the Impoundment is at or below the internal embankment crest, and the water level is receding.

In the event of an earthquake, overtopping of the embankment, evacuation of inundation areas, or other serious problems resulting in a triggering of emergency conditions, the embankment must be inspected by a knowledgeable professional engineer of the site.

Termination of emergency conditions occurs when all entities notified of the emergency condition have been communicated with and informed of current non-emergency conditions.

## 5.0 Notification Procedures

This section is intended to clearly outline the responsibilities of parties involved in all EAP procedures, including notification, surveillance, classification, evacuation, and termination.

Figure 1 shows the areas where inundation could be anticipated during a rain event leading to a hypothetical breach of the Impoundment in its most critical location. Figure 1 also shows areas that would need to be notified during any emergency at the Impoundment.

### 5.1 Impoundment Owner/Responsible Individual Responsibilities

1. The Impoundment Owner/Responsible Individual IS RESPONSIBLE for notifying the WCEMC of any problem or potential problem at the Impoundment site.
2. The Impoundment Owner/Responsible Individual/Line Superintendent/Chief Engineer WILL DETERMINE when Stage 1 conditions are met at the Impoundment and WILL INITIATE Impoundment surveillance accordingly.
3. The Impoundment Owner/Individual/Line Superintendent/Chief Engineer WILL DETERMINE when Stage 2 conditions are met at the Impoundment.
4. The Impoundment Owner/Responsible Individual/Line Superintendent/Chief Engineer WILL DETERMINE when Stage 3 conditions are met at the Impoundment.
5. If needed, the Impoundment Owner/Responsible Individual WILL BE RESPONSIBLE for utilizing pumping to maintain pool levels in the SWM Pond.

### 5.2 Responsibility for Notification and Other Activities

The Owner/Responsible Individual and the WCEMC will notify responsible parties as listed in this section.

#### 5.2.1 Owner/Responsible Individual

1. The Impoundment Owner/Responsible Individual WILL NOTIFY the RP&L Chief Engineer that Emergency Conditions have been implemented.
2. The Impoundment Owner/Responsible Individual WILL NOTIFY the Indiana Municipal Power Agency that Emergency Conditions have been implemented.
3. The Impoundment Owner/Responsible Individual WILL NOTIFY the WCEMC when Stage 2 or Stage 3 conditions are met, to alert them to perform actions required for the stage and to review actions that may be required for the safety and protection of people and property and to mobilize their evacuation team.

4. The RP&L General Manager WILL NOTIFY the Indiana Department of Environmental Management (IDEM) that Stage 2 or 3 conditions have been implemented.

#### **5.2.2 Wayne County Emergency Management Coordinator**

1. The WCEMC WILL NOTIFY the Richmond Police Department and the Wayne County Fire and EMS Department.

#### **5.2.3 Richmond Police Department and Wayne County Fire and EMS Department**

1. The Richmond Police Department and the Wayne County Fire and EMS Department WILL NOTIFY residences and businesses within the inundation and notification areas shown on Figure 1 of the emergency situation.
2. The Richmond Police Department and the Wayne County Fire and EMS Department WILL set up barricades to close South 5<sup>th</sup> Street and monitor Liberty Avenue as shown on Figure 1 if Stage 3 conditions are met.

### **5.3 Responsibility for Termination and Follow-Up**

1. Once the Stage 3 condition has been met, the Impoundment Owner/Responsible Individual will continue to provide the WCEMC with information concerning water level rise and Impoundment overtopping potential, as provided by the Impoundment observer. It is particularly important for the WCEMC to know when a breach is occurring to evacuate their rescue personnel. The Impoundment observer will remain at the Impoundment until released from duty by the WCEMC.
2. Regional flooding may occur prior to an incident at this Impoundment and could continue for long periods of time. The Impoundment observer needs to have plans for staying or returning to the Impoundment as conditions worsen. The termination responsibility should be handled by the WCEMC.
3. Post flood event discussions should be used to determine strengths and weaknesses in the EAP.

### **5.4 Owner/Responsible Individual Responsibility**

The Owner/Responsible Individual will be responsible for EAP-related activities, including (but not limited to) preparing revisions to the EAP, establishing training seminars, and coordinating annual face-to-face EAP exercises between representatives of the Owner/Responsible Individual and local emergency responders. This person will be the EAP contact if any involved parties have questions about the plan.

### **5.5 Methods for Notification and Warning**

The following notification and warning method(s) are to be used during an emergency:

- Telephone/Reverse 911 automated warning systems;
- Police/fire/sheriff radio dispatch vehicles with loudspeakers, bullhorns, etc.;
- Personal runners from door-to-door alerting residents (as required); and
- Radio/television broadcasts for area involved (as required).

### **5.6 Evacuation Procedures**

Once the WCEMC has been notified of any problem at an Impoundment site, the WCEMC will take appropriate protective measures in accordance with the Wayne County Comprehensive Emergency Preparedness Plan, this EAP, any Standard Operations Procedures, and the following:

1. Monitor the situation and, if time permits, review evacuation plans.
2. Begin Alert, Notification, and Warning.
3. Evacuate businesses and residents of South 5<sup>th</sup> Street that are in the inundation zone defined in Figure 1, if conditions warrant.
4. Expand Direction and Control
5. Begin providing Emergency Public Information

## **6.0 Downstream Area Map**

A map of the downstream area is included as Figure 1.

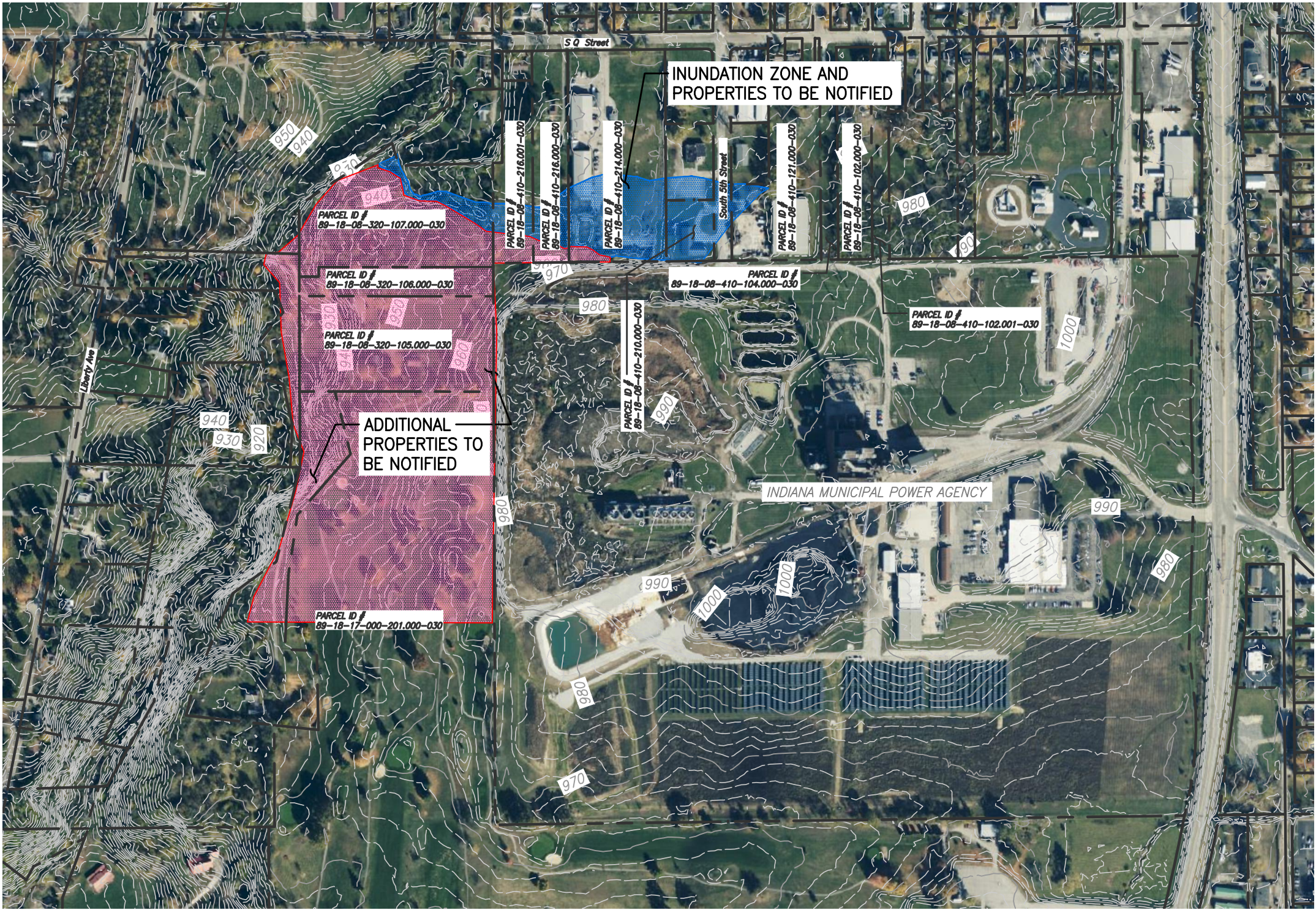
## **7.0 Face-to-Face Meeting**

RP&L will coordinate with Government Emergency Services annually to meet to discuss the notification procedures as outlined in Section 5.0.

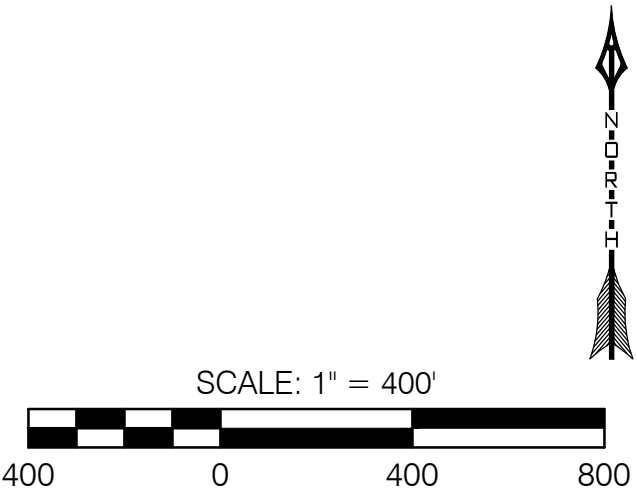
**FIGURE**




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 PLOTTED BY: Ed Mayhood  
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


- NOTES:**
1. THE INFORMATION CONTAINED IN THIS MAP IS PREPARED FOR USE IN NOTIFICATION OF DOWNSTREAM PROPERTY OWNERS BY EMERGENCY MANAGEMENT PERSONNEL. THIS INFORMATION SHOULD ONLY BE USED AS A GUIDE FOR ESTABLISHING EVACUATION ZONES. ACTUAL AREAS INUNDATED WILL DEPEND ON ACTUAL FAILURE CONDITIONS AND MAY DIFFER FROM AREAS SHOWN ON THE MAP. NO LIKELIHOOD OF A FAILURE OF THE RICHMOND POWER AND LIGHT SURFACE IMPOUNDMENT IS IMPLIED.
  2. THE DESIGN EVENT FOR THE RICHMOND POWER AND LIGHT SURFACE IMPOUNDMENT IS THE 1000-YEAR, 24-HOUR STORM EVENT.
  3. MAP SOURCES INCLUDE GIS IMAGERY AND 10 FOOT CONTOUR SURVEY DATA. INUNDATION BOUNDARIES ARE INTERPRETED.
  4. THE MAXIMUM WATER LEVEL SHOWN IS THE RESULT OF A COMBINATION OF A 1000-YEAR, 24-HOUR STORM EVENT IN THE SURFACE IMPOUNDMENT WATERSHED, AS WELL AS THE STORMWATER MANAGEMENT POND WATERSHED AND ADJACENT SURFACE WATER RUNOFF COINCIDING WITH A FAILURE EVENT. THIS ELEVATION IS ASSUMED TO VARY LINEARLY BETWEEN CONSECUTIVE CROSS SECTION LOCATIONS.
  5. THE INUNDATION BOUNDARIES, WATER SURFACE ELEVATIONS, AND MAPPING OF FLOODED AREAS ARE APPROXIMATE AND SUBJECT TO THE ASSUMPTIONS, METHODS, AND PROCEDURES USED TO SIMULATE HYPOTHETICAL EMBANKMENT BREACH CONDITIONS.



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REVISION RECORD					

DRAWING TITLE		
FIGURE 1 - INUNDATION MAP		
PROJECT		CLIENT
CCR RULE COMPLIANCE -RP&L WHITEWATER VALLEY STATION WAYNE COUNTY RICHMOND, INDIANA 47374	 gai consultants	RICHMOND POWER AND LIGHT RICHMOND, INDIANA

DRAWN BY:	CHECKED BY:	APPROVED BY:
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