

EMERGENCY ACTION PLAN

GENERAL JAMES M. GAVIN POWER PLANT

FLY ASH DAM

[CLASS – I; FILE NO: 8721-009]

Submitted to

Ohio Department of Natural Resources

Submitted and Owned by

Gavin Power, LLC
Cheshire, Ohio

Prepared by

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August 2026

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Emergency Action Plan (EAP)
Gavin Power Plant
Fly Ash Dam

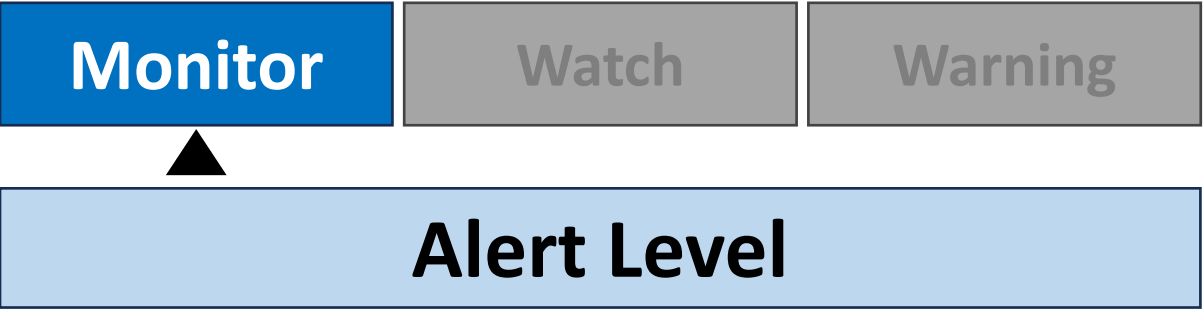
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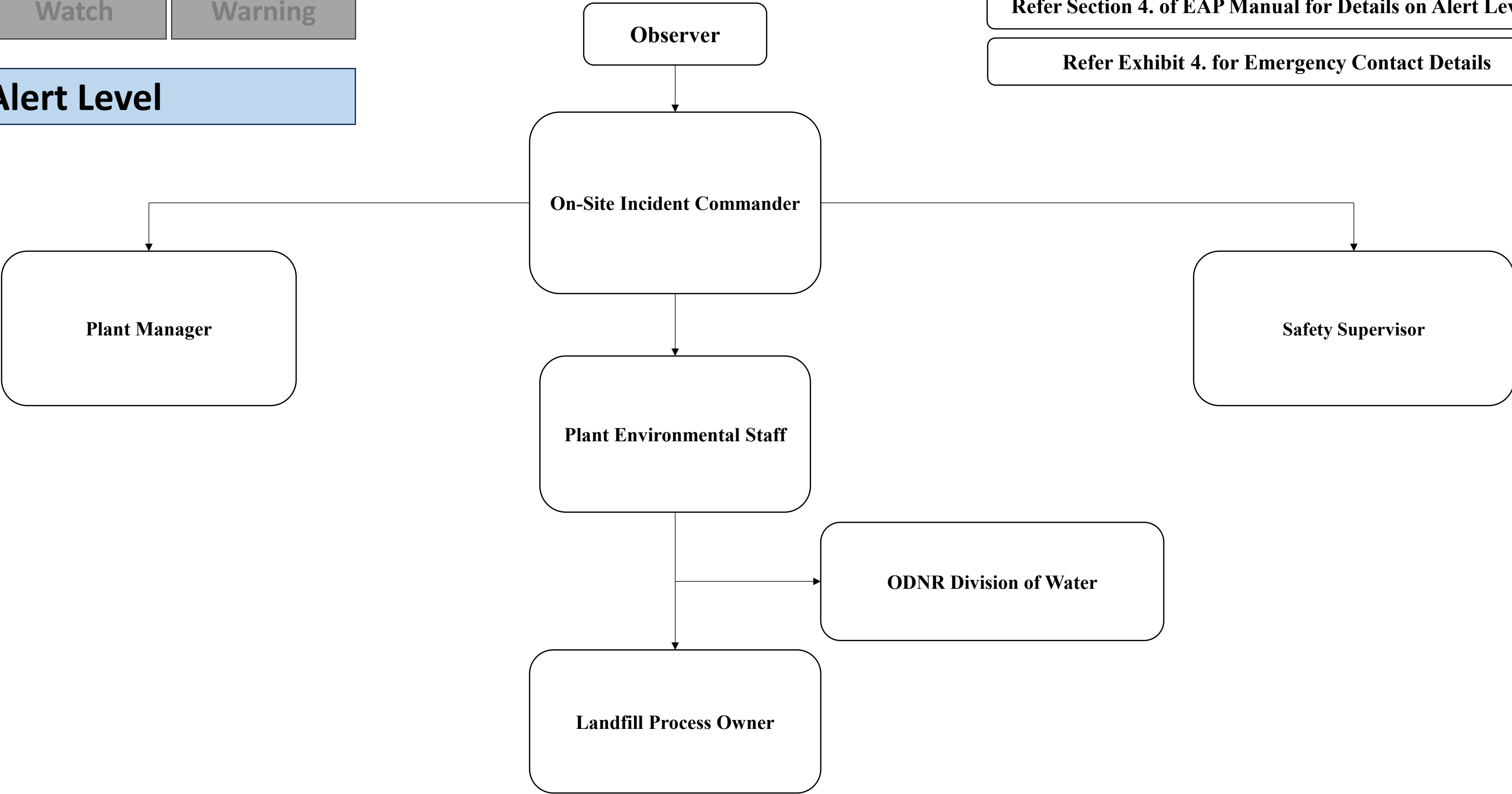
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Refer Section 4. of EAP Manual for Details on Alert Levels

Refer Exhibit 4. for Emergency Contact Details

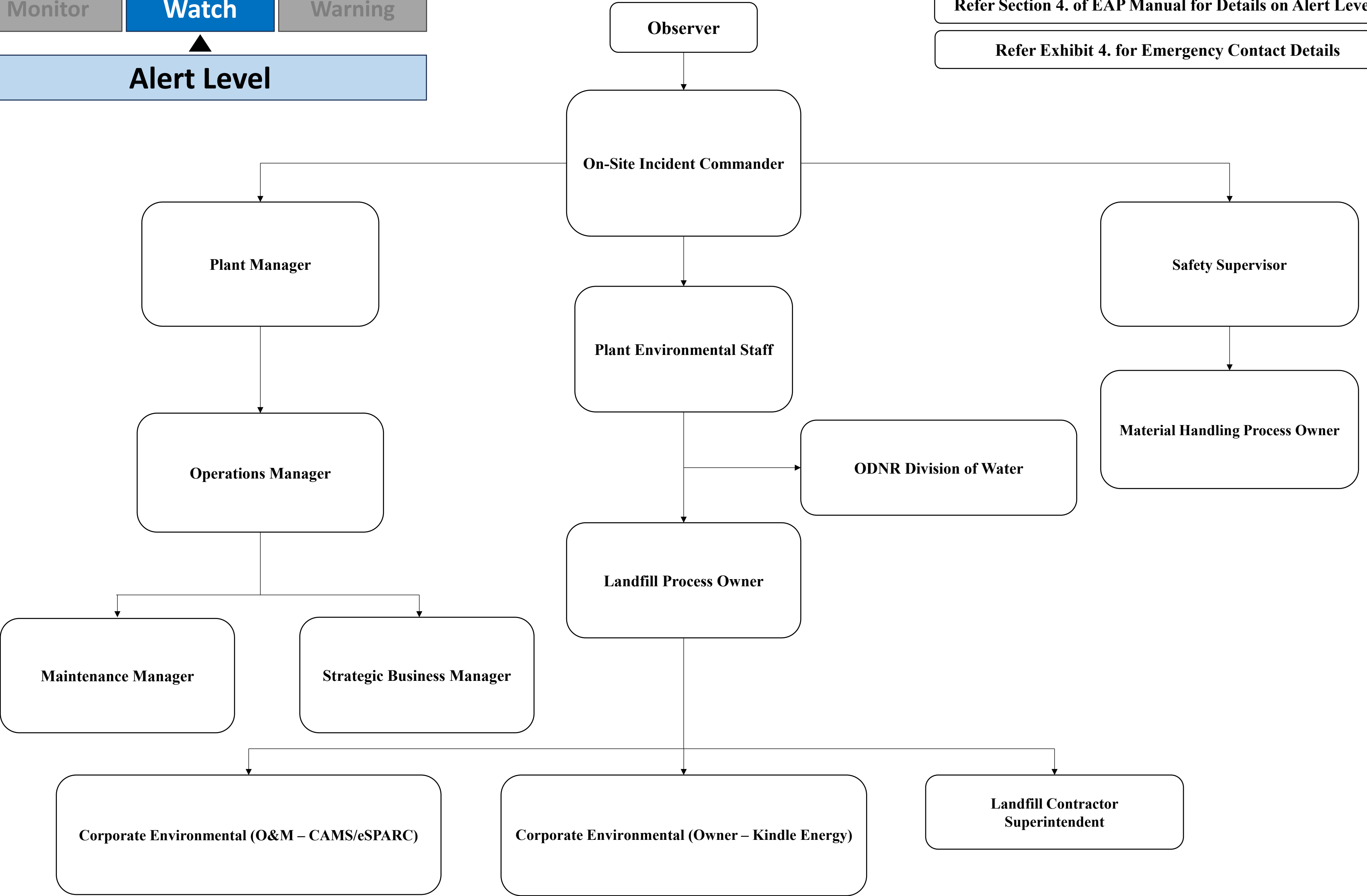


NOTES:
ALERT LEVELS –
MONITOR: Unusual event, slowly developing, no immediate threat to dam.
WATCH: Unsafe situation that may lead to dam failure but not immediate threat.
WARNING: Urgent situation. Failure is occurring or about to occur.



Refer Section 4. of EAP Manual for Details on Alert Levels

Refer Exhibit 4. for Emergency Contact Details



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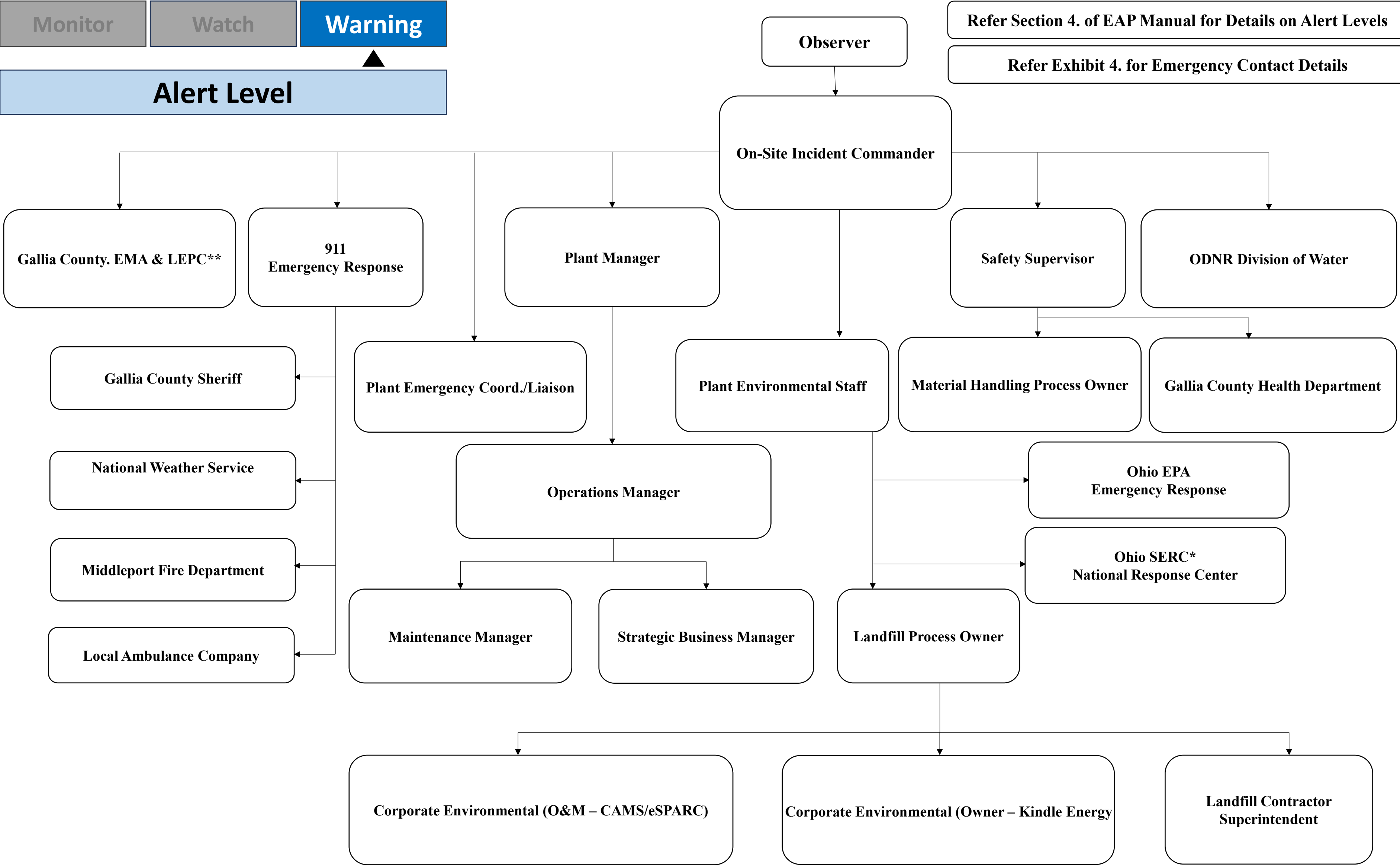
GAVIN POWER, LLC

STINGY RUN FLY ASH DAM AND

RECLAIM POND EMERGENCY CONTACT TREE

NOTIFICATION FLOWCHART

EXHIBIT-2



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*SERC – STATE EMERGENCY RESPONSE COMMISSION
** EMA – EMERGENCY MANAGEMENT ASSOCIATION
LEPC – LOCAL EMERGENCY PLANNING COMMITTEE

Geosyntec

consultants

GAVIN POWER, LLC

STINGY RUN FLY ASH DAM AND

RECLAIM POND EMERGENCY CONTACT TREE

NOTIFICATION FLOWCHART

EXHIBIT-3

Exhibit 4. GAVING POWER PLANT EMERGENCY CONTACT DETAILS			
Name/Agency	EAP Role	Office Phone Number	Cell Phone Number
Gavin Power Plant			
Team Leader	On-Site Commander	740-925-3210	-
Taylor Huffman	Plant Environmental Staff	740-925-3171	740-441-7336
Garrett Watterson	Plant Manager	740-925-3100	304-593-0813
Sam Stearns	Safety Supervisor	740-925-3135	304-857-2526
David Caldwell	Material Handling Process Owner	740-925-3309	740-645-9153
Tim Staufer	Plant Emergency Coord./Laison	740-925-3303	740-339-3780
Andy Davis	Operations Manager	740-925-3101	740-645-3961
Jacob Errett	Maintenance Manager	740-925-3049	304-675-0495
Matt Mooney	Strategic Business Manager	740-925-3067	740-648-5292
Rich Fuller	Landfill Process Owner	740-925-3103	861-910-2864
Patrick Blanchard	Corporate Environmental (O&M- CAMS/eSPARC)	713-380-4790	740-612-7595

Exhibit 4. GAVING POWER PLANT EMERGENCY CONTACT DETAILS			
Name/Agency	EAP Role	Office Phone Number	Cell Phone Number
Lisa Carty	Corporate Environmental (Owner – Kindle Energy)	202-253-7181	202-253-7181
Grace Kurdian	Corporate Environmental (Owner – Kindle Energy)	202-637-1040	202-637-1040
Landfill Contractor Superintendent	Landfill Contractor Superintendent	-	-
Gallia County			
Emergency Response	Emergency Response	911	-
Local Ambulance Company	Local Ambulance Company	911	-
Gallia County EMA & LEPC	Gallia County EMA & LEPC	740-441-2036	-
Gallia County Sheriff	Gallia County Sheriff	740-446-1221	-
Middleport Fire Department	Middleport Fire Department	740-992-6663	-
Gallia County Health Department	Gallia County Health Department	740-441-2018	-
Ohio State			
Ohio Department of Natural Resources	ODNR Division of Water (Business Hours)	614-265-6731	-

Exhibit 4. GAVING POWER PLANT EMERGENCY CONTACT DETAILS			
Name/Agency	EAP Role	Office Phone Number	Cell Phone Number
Ohio Department of Natural Resources	ODNR Division of Water (Non-Business Hours)	614-265-7006	-
Ohio Environmental Protection Agency	Ohio EPA	614-224-0946	-
Ohio Environmental Protection Agency	Emergency Response	800-282-9378	
Ohio State Emergency Response Commission	Ohio SERC	800-282-9378	-
National Response Center	National Response Center	800-424-8802	
National Weather Service	National Weather Service	304-344-8427	-

1. NOTIFICATION FLOWCHART

1.1 General

Exhibit 1, Exhibit 2, and Exhibit 3 are notification flowcharts for potential emergency conditions at the Gavin Plant located just south of Cheshire, Ohio. These notification flowcharts outline the hierarchy for notification. **Exhibit 4** includes contact information of personnel/agency listed in the notification flowcharts in the event of an emergency. The information in the flowcharts is for the following alert levels based on The Interagency Committee on Dam Safety (ICODS) guidelines levels:

- Monitor – A hazardous condition exists, requiring investigation and corrective action; potential for failure is being assessed. Often the owner’s engineer and ODNR Dam Safety Program are contacted.
- Watch – Potential failure situation is developing; corrective measures are underway. The ODNR Dam Safety Program is contacted, and County Emergency Management Agency (EMA) is notified to prepare for a potential evacuation effort.
- Warning – Dam failure is occurring or imminent – contact to County EMA made to ensure evacuation can occur, secondarily contact ODNR Dam Safety.

Section 4 of this Emergency Action Plan (EAP) provides further descriptions of these conditions.

1.2 Sample Messages

In the event of an emergency condition at the dam, the following notifications include herein shall be made. Sample messages are provided below to expedite the transfer of accurate and timely information in the event of such a situation. Underlined items are provided to indicate where information specific to the caller must be given.

1.2.1 Monitor - Nonfailure Emergency Condition

Standby Alert Notification from Gavin Power Plant to Ohio Department of Natural Resources (ODNR).

“This is (your name) from the Gavin Power Plant. I am calling to advise you that we are starting constant surveillance of our Gavin facility’s Fly Ash Dam according to our EAP due to a nonfailure emergency condition at the dam. At this time, we do not anticipate that the Fly Ash Dam will fail but are notifying you so you are aware of the situation. We will call you again if the condition worsens, if a

decision to evacuate is made, or when cancellation of this standby alert has been made.”

(Note, be prepared to provide additional information to ODNR regarding the nature of the emergency condition.)

1.2.2 Watch - Potential Failure Condition

Notification from Gavin Power Plant to Gallia County Emergency Management (911).

“This is (your name) from the Gavin Power Plant. I am calling to notify you that we have a potential failure condition of our Gavin facility’s Fly Ash Dam. Please note that this is NOT presently an evacuation situation, and we will call again if it becomes necessary to evacuate potential flood prone areas. Please check your agency’s copy of the dam’s EAP for maps of potential flooded areas in case an evacuation order is given. These maps indicate areas which may be flooded and would require evacuation should it become necessary. Again, this is NOT an evacuation condition at this time.”

Notification from Gavin Power Plant to ODNR.

“This is (your name) at the Gavin Power Plant. I am calling to notify you that a potential failure condition exists at the Gavin facility’s Fly Ash Dam. We have initiated notifications according to our EAP. We will call you again to inform you if the condition worsens, if a decision to evacuate is made, or when cancellation of this standby alert has been made.”

(Note, be prepared to provide additional information to ODNR regarding the nature of the emergency condition.)

National Weather Service (NWS) Forecast Center.

If the emergency is related to a precipitation event, contact the NWS to determine NWS’s forecast of total rainfall. The telephone number for the NWS Forecast Office in Charleston, West Virginia is (304) 746-0189 and it is answered 24 hours per day, 7 days per week. If conditions at the dam worsen and the emergency changes to Condition C, NWS should be contacted again because they can rapidly issue warnings for downstream evacuation over public broadcast stations.

Potential Assistance Notification from Gavin Power Plant to contractors.

“This is (your name) at the Gavin Power Plant. I am calling to notify you that a potential failure condition exists at our Fly Ash Dam, which may require your assistance. I am calling to notify you so that you are aware of the potential failure condition of the dam so preparation measures can be taken. Please note this is NOT presently a failure situation and we will call again if the situation worsens.” As needed, please add “Your services are needed at this time.”

(Note, be prepared to provide additional information to the contractors regarding the nature of the emergency condition and the types of equipment and materials that may be needed.)

Notification from “911” to Gallia County Sheriff/Middleport Fire Department.

“This is (your name) of “Gallia County Emergency Management Agency (EMA). I am calling to notify you that there is a potential failure condition at the Gavin Power Plant Fly Ash Dam . We have been directed to notify you that a potential failure condition exists at the dam so that you can be prepared if an evacuation notice is issued. Please note this is NOT presently an evacuation situation and we will call again if it becomes necessary to evacuate potential flood prone areas. Please check your agency’s copy of the dam’s EAP for maps of potential flooded areas in case an evacuation order is given. These maps indicate areas which may be flooded and would require evacuation should it become necessary. Again, this is NOT an evacuation condition at this time.”

1.2.3 Warning - Imminent Failure or Failure Has Occurred Condition

Notification from Gavin Power Plant to “911.”

“This is (your name) at the Gavin Power Plant in Gallia County. I am calling to notify you that failure of our Fly Ash Dam is imminent/has occurred. Please notify all available emergency personnel according to the EAP for the dam. Specific details can be found in the Notification Flowchart, Exhibit 2 in the EAP.

Evacuation of flood prone areas downstream of the dam as shown in the EAP should be started immediately. Please check your agency's copy of the dam's EAP for maps of potential flooded areas in case an evacuation order is given.

Notification from Incident Commander to Material Handling Process Owner.

"This is (your name) at the plant. I am calling to notify you that failure of the Fly Ash Dam is imminent/has occurred. Please get your staff out of the potentially flooded areas and come to (give location) to assist us." (Be prepared to indicate the personnel and equipment that may be needed.)

Notification from Gavin Power Plant to ODNR.

"This is (your name) at the Gavin Power Plant. I am calling to notify you that failure of our Fly Ash Dam is imminent/has occurred. We have already notified "911" according to the EAP for the dam. We have told them that evacuation of flood prone areas (as shown in the EAP) should be started immediately."

(Note, be prepared to provide additional information to ODNR regarding the nature of the emergency condition.)

National Weather Service (NWS) Forecast Center.

Contact the NWS to notify them of the emergency condition at the dam. Request that the NWS issue warnings over public broadcast stations (i.e., television, radio, weather radio) alerting the public to the failure condition and to immediately evacuate the area downstream of the dam along Stingy Run and Kyger Creek.

Notification from Gavin Power Plant to local contractors.

"This is (your name) at the Gavin Power Plant. I am calling to notify you that an evacuation order for the Gavin Plant's Fly Ash Dam downstream flooding area was given at ([time]). Your services are needed at this time. Please respond as quickly as possible."

(Note, be prepared to provide additional information to the contractors regarding the nature of the emergency condition and the types of equipment and materials that may be needed.)

Notification from "911" to the Gallia County Sheriff /Middleport Fire Department.

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Gavin Power Plant
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“This is (your name) of the Gallia County EMA. I am calling to notify you that an evacuation order for the Gavin Power Plant Fly Ash Dam downstream flooding area was given at ([time]). Please mobilize the emergency response services according to the EAP. Maps of potentially flooded areas are in dam’s EAP. You can use the maps to determine areas from which people should be evacuated. Again, we are asking you to begin the evacuations immediately.”

Evacuation Notification by Sheriff and Fire Department to Residents.

“An evacuation order for the Gavin Plant’s Fly Ash Dam flood prone area has been given. Please evacuate this area to higher ground immediately. This is an emergency. Please leave now!”

2. STATEMENT OF PURPOSE

The purpose of this Emergency Action Plan (EAP) is to safeguard lives and to reduce damage to the property of the citizens of Gallia County who live or are traveling in close proximity to the Gavin Power Plant in the event of failure of the structures (dam or embankment) or flooding caused by large flow releases from the structures. This EAP establishes the notification procedures for the rapid implementation of the emergency action to be taken prior to and following a failure of Gavin Power Plant's Fly Ash Dam (FAD) .

This EAP document was prepared to meet the requirements of Ohio Department of Natural Resources (ODNR) for an EAP as provided in Ohio Administrative Code (OAC) 1501:21-15-07 and 1501:21-21-04 and as further detailed in ODNR's EAP Guidelines dated September 11, 2017. Per ODNR, the FAD is classified as Class I (High-Hazard) dam.

This EAP supersedes previous versions of the Gavin Power Plant EAP submitted to ODNR and addresses the comments received from ODNR on the previous versions.

3. PROJECT SITE DESCRIPTION

The Gavin Power Plant is located along the Ohio River in Gallia County, Ohio just south of Cheshire, Ohio. The nearby towns are Addison, Ohio south on State Route (SR) 7 and Point Pleasant, West Virginia. There are no towns directly across the Ohio River from the power plant. This EAP covers the following FAD facility at the Gavin Power Plant. The FAD (*ODNR Dam File #8721-009*) consists of an earthen embankment dam and concrete-lined spillway. In current condition, there is no ponded surface water behind the dam. The direct precipitation and storm water received by the FAR cover and upstream areas safely discharged through the new concrete-lined spillway. The FAD is classified as a Class I high-hazard dam by the ODNR, even though it no longer holds water, as it still contains the previously impounded Coal Combustion Residue (CCR). **Exhibit 5** shows the locations of these dams and the surrounding area and the layout of the FAD.

The FAD Dam is considered as Class-I dams per ODNR based upon its potential downstream hazard including probable loss of life. Per ODNR Fact Sheet 94-29, potential downstream hazards are defined as the resultant downstream damage should the dam fail, including probable future development. Potential downstream hazards of the failure of either dam include probable loss of human life, damage to public roads, damage to the state highway and environmental damage to the receiving stream. These potentially impacted areas caused by failure of FAD Dam are described in Section 3.3.

The FAD is located approximately 2.5-miles northwest of the Gavin Power Plant in the valley of Stingy Run, which is a tributary to Kyger Creek. Kyger Creek empties into the Ohio River 3.0 miles downstream of the Gavin Power Plant. The original dam was lowered to facilitate Fly Ash Reservoir (FAR) closure in place, constructed in 2015-2021. The FAD no longer impounds surface water; the FAR retains CCR, a.k.a. “fly ash”. The FAD structures consist of the lowered main dam embankment, reservoir closure cover system, concrete-lined spillway, and internal drainage collection pond. The locations of these dam project structures and their relation to the Gavin Power Plant are shown in **Exhibit 5**.

The FAD embankment crest elevation ranges from 730-feet near each abutment, sloping down to where the new concrete-lined spillway crest elevation is maintained at 660 feet (i.e., the minimum FAD embankment crest elevation is considered the spillway crest). Since 2021, Outfall 011 discharge, direct precipitation, storm water runoff from upstream areas, runoff from FAR cover, and acid mine drainage (AMD) treated surface water enters to a system of conveyance channels within the FAR area that collect and discharge the surface water through the new concrete-lined spillway without any ponding behind the dam. As a result of the change of service and dam closure, the FAD spillway discharge has been at an Elevation of 660 since 2021. Key information related to the FAD is presented in **Table 1**.

Table 1. FAD Data

Parameter (units)	Value
Embankment Crest Elevation (feet)	730 - 660
Height of the Dam (feet)	60 - 115
Length of the Dam (feet)	1,510
Spillway Inlet Elevation (feet)	660
Spillway Outlet Elevation (feet)	580

The FAR was closed and capped starting in 2015 and finishing in 2021 and the FAD was lowered and retrofitted in 2020-21. In current conditions, there is no ponded surface water behind the dam.

The following paragraphs describe key features of FAD.

3.1 Fly Ash Dam (FAD) (formerly referred to as the Main Dam)

The original earthen embankment dam was completed in 1975 with an upstream slope of 3 horizontal (H) to 1 vertical (V) (3H:1V). In 1986, the height of the embankment was raised from 104 feet to 144 feet above the surrounding topography, corresponding to a maximum crest elevation of 735 feet above mean sea level (MSL). The original 104-foot-high embankment, with a minimum crest elevation of 692 feet-MSL, consisted of a compacted upstream impervious fill zone, a compacted downstream random fill zone, and an uncompacted upstream berm of Coal Combustion Residual (CCR) material (e.g., fly ash). A core trench extending to the top of weathered rock and backfilled with impervious clay was constructed to mitigate seepage through the overburden materials which were not removed downstream. The core trench and abutment groins were grouted.

The earthen embankment was modified and lowered during the FAR closure project and the downstream slopes were flattened to 8H:1V. The crest elevation of the earthen embankment matches the FAR cover system central drainage way and adjacent FAR cover system to avoid ponding water on the surface of the FAR cover system. Currently, there is no ponded surface water behind the earthen embankment. Direct precipitation and storm water impinging on the FAR cover system and upstream areas is safely discharged through the new concrete-lined spillway with a crest/inlet elevation of 660 feet MSL.

3.2 Fly Ash Reservoir Cover System

The FAR cover system was constructed with conveyance channels (stabilized swales) to safely convey the 100-year, 24-hour storm event across the cover. The cover system includes a 2-foot-thick vegetated infiltration layer over a geomembrane. The conveyance swales are aligned to correspond to the center of the natural northwest, central, and southwest valleys. Each of the branches has a primary conveyance channel along its center. These three channels converge,

and the combined flow is conveyed within a single channel to the modified earthen embankment dam and new concrete-lined spillway.

3.3 Fly Ash Dam (FAD) Spillway

The concrete spillway is designed to safely discharge stormwater surface runoff flows to Stingy Run Creek produced by the following storms: the 100-year and Probable Maximum Flood (PMF). The 100-year precipitation event is handled by a rectangular, reinforced-concrete-lined spillway. The PMF is handled as overflow out of the 100-year spillway and is conveyed through a fabric formed concrete grout lined spillway with concrete perimeter side walls. The overall length of the concrete spillway is approximately 864-feet long, including the energy dissipater section which is approximately 112-feet long.

The new concrete-lined spillway structure consists of three segments.

1. **Transition Spillway**: The first, upstream, segment of the spillway structure is called the transition spillway. The transition spillway is approximately 200 feet long and 300 feet wide. The transition spillway starts at the end of the riprap channel at the top of the dam at elevation 660 feet, and ends at station 3+60, where the concrete-lined spillway starts. The thicknesses of the concrete base slab and end caps of the transition spillway are 1 foot and 2 feet, respectively.
2. **Concrete-Lined Spillway**: The second, downstream, segment of the spillway structure is called the concrete-lined spillway which has a 13% slope. The main chute of the concrete-lined spillway is approximately 560 feet long and 55 feet wide. The main chute has a wall height of five feet. The base slab and sidewalls of the main chute have thicknesses of 1.5 and 2 feet, respectively. On either side of the main chute, there is a 75-foot-wide fabric formed concrete layer that is 8 inches thick. The walls on the outside of the fabric formed concrete range in height from two to five feet. The concrete lined spillway ends at the upstream end of the energy dissipator section.
3. **Energy Dissipator**: An energy dissipator with a length of approximately 112 feet is present at the downstream end of the concrete-lined portion of the spillway. The energy dissipator consists of concrete chute blocks at a low point within the spillway at an elevation of 577 feet. The spillway rises back to an elevation of 584 feet then extends approximately 50 feet downstream at the end of the energy dissipator section before discharging into the riprap lined channel.

Overall thicknesses of the base slab and the side walls of the concrete lined spillway part are 1.5 feet and 2 feet, respectively. The layout of the spillway is shown in **Exhibit 5**.

3.4 Internal Drainage System and Pond

An internal drainage system and pond were constructed as a part of the FAD lowering and FAR closure system projects. The pond receives water from two sources.

- Internal seepage through the FAD earthen embankments from the contained CCR upstream.
- Internal seepage collection pipes below the concrete-lined spillway (i.e., underdrain system) and within the FAD earthen embankments (i.e., collection trenches).

The internal drainage system and pond are comprised of the following:

- Underdrain collection pipe system below the transition spillway and concrete-lined spillway to approximately station 6+40 conveying water to the internal drainage pond;
- Internal drainage collection trenches along the downstream toe and abutments of the FAD earthen embankment;
- Inflow transmission (solid) pipe and bedding carrying water from the internal drainage collection trenches to the pond;
- Barrier layer on the bottom and side slopes of the pond;
- Overflow discharge structure within the pond including a riser and discharge pipes with seepage collars; and
- Emergency spillway that discharges from the pond into a ditch to Stingy Run Creek.

The internal drainage trenches are installed within the FAD earthen embankments. The internal drainage trenches collect subsurface liquids from the CCR in the subsurface drainage layer located immediately upstream of the FAD earthen embankments and transfer collected liquids to the internal drainage pond. The invert elevations of the pipes for the underdrain system and internal drainage trenches discharging into the pond are 607.42 and 607.46 feet, respectively.

The internal drainage collection pond is designed to retain a minimum of 30 days of flow and surface discharge to Stingy Run Creek. Under the NPDES permit, the pond discharges collected water to Stingy Run Creek through a 12-inch diameter outlet pipe connected to a 12-inch diameter riser pipe with an invert elevation of 605.55 feet.

3.5 Potential Downstream Hazard

Section 7 of this report provides details on inundation during the event of FAD failure. In its current condition, FAD does not have water impounded upstream of the dam and therefore, there is less likely chance of any major release of CCR material from the FAD to downstream areas.

A hypothetical dam failure analysis was performed to evaluate the downstream impact of the FAD failure using hydrologic and hydraulic models. An inundation boundary was developed to map the impact of dam failure. The extent of inundation is presented in **Exhibit 6** which can be used as reference for evacuation of the area during event of FAD failure. The area of interest likely to be inundated due to FAD failure include Cheshire Baptist Church, Cheshire Village City Hall, Gallia Meigs Community Action, former Cheshire Kyger Elementary School and portions of Ohio State Route 554 and Stingy Creek Road, railroad, Little Kyger Road, Kyger Creek Plants, buildings. See additional details in map included in Exhibits-6-1 to 6-5.

4. EMERGENCY DETECTION, EVALUATION, AND CLASSIFICATION

4.1 Detection

Potential emergency conditions, which are listed in **Section 4.3**, for the integrity of the FAD may be observed by Gavin staff during regular maintenance and/or inspections, by local police during their general rounds, or by a member of the general public who reports a potential concern for the safety of the dam. The following components should be considered for detecting and classifying an emergency condition at the dam:

- Monitor the minor erosion on the right upstream slope.
- Monitor exterior and interior slopes for erosion, deterioration and loss of vegetation after heavy rain.
- Monitor the flow quantities from the drainpipes that discharge into the internal drainage pond on a regular basis to determine base flow.
- Monitor the spalling concrete at the tie-in between the fabric formed blankets and the chute wall and repair as needed.

Once the concern is relayed to Gavin Power, LLC, it shall be the Incident Commander's responsibility to lead the response actions. If the Incident Commander is not available or able to lead the response, then the Material Handling Process Owner, or next highest ranking on-site supervisor, shall have that responsibility. Roles and responsibilities are further defined in **Section 5**.

The detection of Emergency Conditions will be part of the annual face-to-face meeting with local first responders as described in **Section 6.10**. The means of communicating these Emergency Conditions area discussed in **Section 6.6**; the procedure is detailed in the notification flowcharts (**Exhibit 1, Exhibit 2, and Exhibit 3**).

4.2 Evaluation

Gavin Plant's Incident Commander would likely be the first person notified of a potential problem at either dam and would be the first person on the scene. Upon arrival at the site, the Incident Commander will assume responsibility for the emergency condition, evaluate the potential emergency, determine alert level and action based on emergency classification condition presented in Table 3, and continue to evaluate the condition.

Table 2. Classification of Conditions

Alert Level	Description	Action
Monitor	Unusual event, slowly developing, not an immediate threat to the dam.	Dam owner representative must inspect the dam. Document the incident and report findings to your engineer and the ODNR, Dam Safety Program. Obtain instructions regarding the next course of action from your engineer and/or ODNR.
Watch	Unsafe situation that may lead to failure of the dam but not an immediate threat.	Begin notifications according to Section I: Notification Flowchart in this EAP. Begin constant surveillance of the dam.
Warning	Urgent situation. Failure is occurring or about to occur. Or, areas downstream are flooding due to spillway flow. Evacuation of downstream area necessary.	Begin notifications according to Section I: Notification Flowchart in this EAP. Begin constant surveillance of the dam.

4.3 Emergency Condition Classification

If any of the following conditions are developing, appear imminent or have occurred, implement the notification plan (**Exhibit 1**, **Exhibit 2**, and **Exhibit 3**) immediately. Emergency conditions shall be classified based on following:

4.3.1 Monitor

This covers a hazardous condition that exists, requiring investigation and corrective action. The potential for failure is being assessed, and there is no immediate threat to the integrity of the dam. This includes the following scenarios:

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1. Reservoir water surface elevation at spillway crest or spillway is flowing with no active erosion.
2. New seepage areas in or near the dam with clear flow.
3. New cracks in the embankment greater than 1/4 -inch wide without seepage.
4. Visual movement/slippage of the embankment slope.
5. Instrumentation readings beyond predetermined values.
6. Measurable earthquake felt or reported on or within 50 miles of the dam. This refers to earthquakes of intensity V or lower on the [Modified Mercalli \(MM\) Intensity Scale](#).
7. Damage to dam or appurtenances with no impacts to the functioning of the dam.

4.3.2 Watch

This condition covers a non-failure scenario with no immediate threat to the integrity of the dam, such as the following:

- Obstructions are present in the spillway structures.
- Spillway flowing with active gully erosion.
- Cracks in the embankment with seepage.
- Sinkhole develops downstream with no water present.
- Structural damage to discharge structures.
- Visible and limited surficial slump of soils on face of embankment; depth of two feet or less.
- Significant erosion (greater than five feet deep) on the downstream of FAD.
- Earthquake resulting in visible damage to the dam or appurtenances.
- Verified bomb threat that, if carried out, could result in damage to the dam.

4.3.3 Warning

This condition applies to the situations where dam failure is either occurring or imminent, and there is no time to implement corrective measures. In such cases, evacuation should be implemented immediately. The following scenarios are included:

- Spillway flowing with an advancing headcut that is threatening the control section.
- Spillway flow that is flooding people downstream.
- Major overtopping flow eroding the embankment slope.

Emergency Action Plan (EAP)
Gavin Power Plant
Fly Ash Dam

- Heavy seepage with active erosion. Muddy flow and or sand boils.
- Seepage occurs through the dam/embankment and/or foundation at observed flow rates that appear unusually high or not typical of base flow conditions.
- Unusual crack develops in the embankment and/or foundation with minor seepage (wet spots on the surfaces) or controllable flow is observed.
- Water is observed in a sinkhole downstream but there is no visible turbidity in the water.
- A previously unidentified seep or similar discharge is observed at the toe of the embankment with no significant turbidity.
- A significant single or multiple slide/slumps are observed and are continuing to enlarge.
- Dam or embankment sections are displaced or separated.
- A turbid or muddy discharge is observed at the toe of the dam.
- Earthquake resulting in uncontrolled release of water from the dam.
- Detonated bomb that has resulted in damage to the dam or appurtenances.
- Damage to the dam or appurtenance that has resulted in uncontrolled water release.

5. GENERAL RESPONSIBILITIES

5.1 On-site Incident Commander (On-site Team Leader)

The On-site Incident Commander shall coordinate emergency response action in the event of an Emergency Condition at the dam. Plant personnel will report unusual observations of the embankments and associated pond facilities, whether from intentional monitoring or casual observations to the On-site Incident Commander. The Incident Commander shall take responsibility to make appropriate notifications, and to request assistance as specified in the notification flowcharts (**Exhibit 1, Exhibit 2, and Exhibit 3**). The Incident Commander may delegate responsibility as appropriate. The Incident Commander shall take responsibility to make appropriate notifications and to request assistance from the ODNR and/or a professional engineer. If the Incident Commander is not available or able to lead the response, then the Plant Landfill Process Owner (EAP Coordinator), or next highest ranking on-site supervisor, shall have that responsibility.

The Incident Commander shall:

1. Assume responsibility for addressing the emergency condition, determine initial emergency condition classification (monitor, watch, warning), and continue to evaluate conditions.
2. Provide for constant surveillance of the FAD.
3. Initiate and maintain contact with state and local emergency responders according to the notification flowcharts shown in **Exhibit 1, Exhibit 2, and Exhibit 3**, as appropriate. See **Section 1.2** of this EAP for sample notification messages.
4. Determine the need for evacuation and initiate evacuation plan. This shall include evacuation downstream of the FAD Dam due to an incident. Evacuation must include Gavin Power Plant and/or contractor personnel working in potentially flooded areas as well as the general public on Gavin owned property outside the Plant and non-Gavin owned property potentially flooded land.
5. Arrange for road closures within the plant downstream from the potentially failing embankment and then notify the Gallia County Sheriff for the sheriff's department to close public roads (e.g., close SR 7 if dam embankment is anticipated to fail).
6. Initiate and direct corrective actions at the dam incident in consultation with a consulting engineering firm and/or Professional Engineers, as needed, and ODNR.
7. Supervise Gavin personnel and contractors during the response activities.
8. Coordinate with Material Handling Process Owner, landfill staff, or outside contractor, as specified in **Exhibit 1, Exhibit 2, and Exhibit 3**.
9. Terminate, when appropriate, emergency status for the dam incident.

5.2 EAP Coordinator Responsibilities - (Plant Landfill Process Owner)

The EAP Coordinator will be responsible for:

1. Distributing copies of the Plan to appropriate and responsible recipients.
2. Establishing a training program for Gavin personnel to make them familiar with the EAP and knowledgeable of the tasks to be performed in the event of an emergency at the Gavin Power Plant dams, in accordance with **Appendix B** of this EAP.
3. Maintaining the EAP in the facility's operating record.
4. Reviewing and updating the EAP as necessary, and at a minimum annually, see **Appendix B**.
5. Making appropriate notifications as required.
6. Conducting an annual face-to-face meeting or emergency preparedness exercise between Gavin staff and local emergency responders as described in **Appendix B**.
7. Documenting and maintaining logs recording all activations of the EAP.
8. Coordinating a follow-up evaluation of emergency response activities following any Emergency Condition at either dam.
9. Serving as the EAP contact person.

5.3 Responsibility for Notification

Potential concerns for the integrity of the dams may be observed by Gavin staff during regular maintenance and/or inspections, by local police during their general rounds, or by a member of the general public who reports a potential concern for the safety of the dam. Once the concern is relayed to Gavin, it shall be the Incident Commander's responsibility to lead Gavin's response actions. If the Incident Commander is not available or able to lead the response, then the Material Handling Process Owner, or next highest ranking on-site supervisor, shall have that responsibility.

The Gavin Plant's Incident Commander would likely be the first person notified of a potential problem at a dam and would be the first person on the scene. The Incident Commander (or his designee) will initiate the notification procedures according to the appropriate Notification Flowchart. The Incident Commander will have key personnel proceed to the dam incident for surveillance and corrective measures. The ODNR Division of Water shall be notified by Gavin regardless of the emergency condition.

5.4 Responsibility for Evacuation

5.4.1 Primary Responsibility - Gallia County EMA Director

Due to the short travel time of a flood wave, the Gallia County Emergency Management Agency (EMA) Director shall activate the Gallia County Emergency Operations Center in conjunction

with notifying all residents of the emergency condition while safety personnel are being deployed.

5.4.2 Primary Responsibility - Gallia County Sheriff

The Gallia County Sheriff shall coordinate with the Gallia County EMA to notify all residents of evacuation by loud-speaker-equipped squad cars while safety personnel are being deployed.

In addition, the Gallia County Sheriff shall provide support personnel for road closures (if needed) and maintain communication with other emergency personnel.

5.4.3 Secondary Responsibility - Middleport Fire Department

The Middleport Fire Department will assist the Gallia County Sheriff with the evacuation of residents as needed.

5.5 Responsibility for Duration, Security, Termination, and Follow-up

The Incident Commander shall be responsible for determining the Emergency Condition at a dam incident, coordinating with appropriate response agencies, and maintaining security and surveillance at the affected dam for the duration of emergency condition.

The Incident Commander at the Gavin plant will be responsible for cancellation of the Emergency Condition after determination that the threat of dam/embankment failure or any additional downstream damage has been minimized, and appropriate corrective measures have been implemented. The emergency agencies shall be notified following notification flowcharts, shown in **Exhibit 1**, **Exhibit 2**, and **Exhibit 3** once the emergency condition has been concluded.

The EAP Coordinator shall conduct a follow-up meeting with the individuals and agencies contacted during the Emergency Condition as soon as practical to assess the effectiveness of the EAP. If some participants cannot attend a meeting, they should be requested to provide written comments on the notification and coordination that their agency received during the Emergency Condition.

5.6 Organization Duties

The following tables list potential duties that each agency may be called upon to perform should an emergency condition arise at the Gavin Power Plant dams. The hierarchy of notification can be found in the notification flowcharts (see **Exhibit 1**, **Exhibit 2**, and **Exhibit 3**).

5.6.1 Duties and Responsibilities for Monitor

Organization/Person	Duties
Gavin Power On-site Incident Commander	• Notify ODNR at beginning of emergency condition. • Coordinate response activities at the dam. • Mobilize local contractors if needed. • Notify ODNR when emergency condition ends.
Engineering Consulting Firm and/or Professional Engineer	• Provide technical analysis and design support.
ODNR	• Monitor events at the dam. • Offer technical advice to Gavin staff.
Material Handling Personnel	• Provide construction equipment, materials, and personnel to assist Gavin staff in responding to the emergency condition.

5.6.2 Duties and Responsibilities for Watch

Organization/Person	Duties
Gavin Power On-site Incident Commander	• Notify “911” emergency center and ODNR at beginning of emergency condition. • Coordinate response activities at the dam. • Mobilize local contractors if needed. • Notify ODNR, EMA, and other agencies when emergency condition ends.
1. Gallia County Sheriff 2. Middleport Fire Department	• Review the flood inundation maps contained in the EAP to be familiar with areas that may require evacuation if an evacuation order is given. • At this level, NO EVACUATION IS REQUIRED.
Engineering Consulting Firm and/or Professional Engineer	• Provide technical analysis and design support.
ODNR	• Monitor events at the dam. • Offer technical advice to Gavin staff.
Material Handling & Local Contractors: 1. Material Handling Personnel 2. Landfill Contractor	• Provide construction equipment, materials, and personnel to assist Gavin staff in responding to the emergency condition.
Gallia County EMA “911” Emergency Center	• Notify the Gallia County Sheriff of the emergency condition. • Notify the Gallia County EMA Director and the Middleport Fire Department of the emergency condition.

5.6.3 Duties and Responsibilities for Warning

Organization	Duties
Gavin Power On-site Incident Commander	• Notify “911” emergency center and ODNR at beginning of emergency condition. • Coordinate response activities at the dam. • Mobilize Material Handling personnel and local contractors if needed. • Notify ODNR, EMA, and other agencies when emergency condition ends. • Complete follow-up reporting to ODNR recording activation of EAP.
1. Gallia County Sheriff Middleport Fire Department	• IMMEDIATELY BEGIN EVACUATION of flood prone areas downstream of the dam as shown on the flood inundation maps contained in the dam’s EAP. • Evacuation activities may include physical evacuation, calling, knocking on doors, announcements with bullhorns, etc. • Assist in rescue of stranded residents, placing sandbags, and other duties as required.
Engineering Consulting Firm and/or Professional Engineer	• Provide technical analysis and design support.
ODNR	• Monitor events at the dam. • Offer technical advice to Gavin staff.
Material Handling Personnel & Local Contractors: 1. Material Handling Personnel 2. Landfill Contractor	• Provide construction equipment, materials, and personnel to assist Gavin staff in responding to the emergency condition.
Gallia County EMA “911” Emergency Center	• Notify the Gallia County Sheriff of the emergency condition. • Notify the Gallia County Emergency Management Director and the Middleport Fire Department of the emergency condition.

6. PREPAREDNESS

6.1 Surveillance

The FAD is an unmanned facility, but it is visited regularly by security guards and inspected on a weekly basis by qualified plant personnel/qualified person (per CCR Rule). During these visits, personnel are instructed to report unusual conditions to their supervisors so that the appropriate Gavin technical and management staff are notified, and an inspection can be performed.

6.2 Response During Darkness

There are no area lights at the FAD. Portable lighting is available at the plant and will be used during periods of darkness. If necessary, additional portable lighting will be rented to illuminate areas of concern.

Normal operations of the power plant do not include site visits to FAD during hours of darkness. If an emergency condition is identified or a significant weather event of concern occurs, operations will be adjusted as needed to safely illuminate and access the embankment and spillway areas for inspection during night hours.

6.3 Access to Site

Access to the FAD is provided by Stingy Creek Road (609) which intersects SR 554. An access road begins after a locked gate at the end of Stingy Run Road, which provides access to the toe of the dam and also to the crest by way of gravel road along the dam downstream slope's tie-in with the northern abutment (see **Exhibit 5**). Access roads are maintained by the Gavin Power Plant.

6.4 Response During Weekends and Holidays

The Gavin Power Plant is manned 24 hours per day, 365 days a year. Therefore, plant staff will be available to respond to an emergency situation at any time.

6.5 Response During Adverse Weather

The plant has four-wheel drive vehicles to be used for transportation to the FAD. The power plant also has track-mounted bulldozers that are used in the day-to-day operations of the coal yard that could be utilized to access the dams during extreme weather conditions.

6.6 Means of Communication

The primary means of internal communication is the use of two-way radios. These radios are used for day-to-day operations and also for emergency events. The frequency can be changed to be in contact with the local emergency response agency. Most plant vehicles are equipped with radios.

The primary means of external communication is via cell phone and the plant telephone system.

6.7 Emergency Corrective Measures

All work related to the following conditions shall be coordinated with plant technical and management staff, as needed. The corrective measures shall be monitored by qualified engineering or technical staff during and after implementation for effectiveness. Supplemental measures should be incorporated as necessary to reduce potential hazards. If proposed measures appear to be ineffective, plant personnel will discontinue the current activity, promptly reassess conditions and implement alternative measures.

6.7.1 High Pool Levels/Overtopping Condition

1. High pool levels or overtopping conditions are not expected at the FAD as there is no water impoundment capability behind the embankment.
2. Spillway blockage may occur during extreme weather events. It may be necessary to clear the debris or blockage.
3. Contact a consulting engineering firm and/or a professional engineer for permanent repair recommendations for any damage caused to spillway or embankments.

6.7.2 Leakage/Cracking Condition

1. Place earth or rock fill or other appropriate materials over the leakage area. Attempt to collect significant flows into temporary flexible slope piping and discharge water at a stable location off the dam or embankment fill. Upon temporary stabilization of the leakage condition, install silt fence, composite sock filter, or similar erosion and sediment controls as appropriate for the condition. Do not install erosion or sediment control devices on the embankment face or at the toe where water will be impounded on the leaking or cracked embankment fill. These materials are available on site or from coal yard operation, or other contractor as listed on the notification flowcharts in **Exhibit 1, Exhibit 2, and Exhibit 3** and within **Section 6.8**.
2. Utilize earth fill, geomembrane, geosynthetic clay liner, bentonite, etc., or a combination as required to temporarily repair or plug apparent upstream leaks and cracks in the dam or embankment that are identified after water draw down.
3. Contact consulting engineering firm and/or a professional engineer for mitigation techniques and permanent repair recommendations.

6.7.3 Slumping/Sliding of Embankment Crest

1. Fill affected area with earth, rockfill, or sandbags. These materials are available on site or from coal yard operation, or other contractors as listed on the notification flowcharts in **Exhibit 1, Exhibit 2, and Exhibit 3** and within **Section 6.8**. If sliding occurs, the toe

of the slide should be stabilized by adding ballast weight with earth, rock, or gravel on the downgrade end of the slump.

2. If the slump reduced the dam crest elevation, place sandbags at the slump to restore dam to its original elevation.
3. Attempt to collect significant flows identified within a slump/slide area into temporary flexible piping and discharge the water at a stable location off of the embankment fill.
4. Contact a consulting engineering firm and/or a professional engineer for permanent repair recommendations.

6.7.4 Sinkhole Condition

1. Fill sinkholes with earth or rockfill. These materials are available on site or from coal yard operation, or other contractor as listed on the notification flowcharts in **Exhibit 1**, **Exhibit 2**, and **Exhibit 3** and within **Section 6.8**.
2. Contact consulting engineering firm and/or a professional engineer for permanent repair recommendations.

6.7.5 Severe Downstream Erosion or Minor Structural Damage

1. Monitor condition of structures and downstream erosion.
2. Temporarily buttress identified unstable areas with soil and rock fill. Do not unnecessarily add weight to a failing area on a steep slope.
3. Install silt fence, composite sock filter or similar erosion and sediment controls as appropriate for the condition. Do not install erosion or sediment control devices where water will be impounded on identified tension cracks or saturated embankment fill.
4. Contact consulting engineering firm and/or a Professional Engineer for permanent repair recommendations.

6.8 Emergency Supplies and Resources

Contact	Emergency Items	Location	Phone
Material Handling Process Owner (Dave Caldwell)	Phone, radios	At the plant material handling	Off.: 740-925-3309 Cell: 740-645-4481
Main Guard House	Phone, radios	Plant entrance	Off.: 740-925-3012
Landfill Process Owner (Rich Fuller)	Bulldozers, backhoes, dump trucks	At the plant landfill	Cell: 681-910-2864
Landfill Contractor	Bulldozers, backhoes, dump trucks	Route 554 adjacent to the Gavin Power Plant	

6.9 Training and Updating of the EAP

The EAP shall be reviewed and updated by Gavin Power, LLC and all affected parties at least once a year and when significant changes to the facility occur, emergency contacts/reporting procedures change. When updating the EAP, check all contact names and phone numbers for verification. If there are significant changes to the EAP, such as dam or embankment ownership or major modifications to the dam or embankment, the EAP should be updated as soon as possible.

6.10 Annual Face-to-Face Meeting with Local Emergency Responders

An annual face-to-face meeting will be held with local emergency responders that will cover:

1. General information about the FAD.
2. Roles and responsibilities the first responders would have in assisting the facility in an emergency.
3. Potential risks the FAD pose as well as preventative measures plant staff are taking to avoid these potential issues.

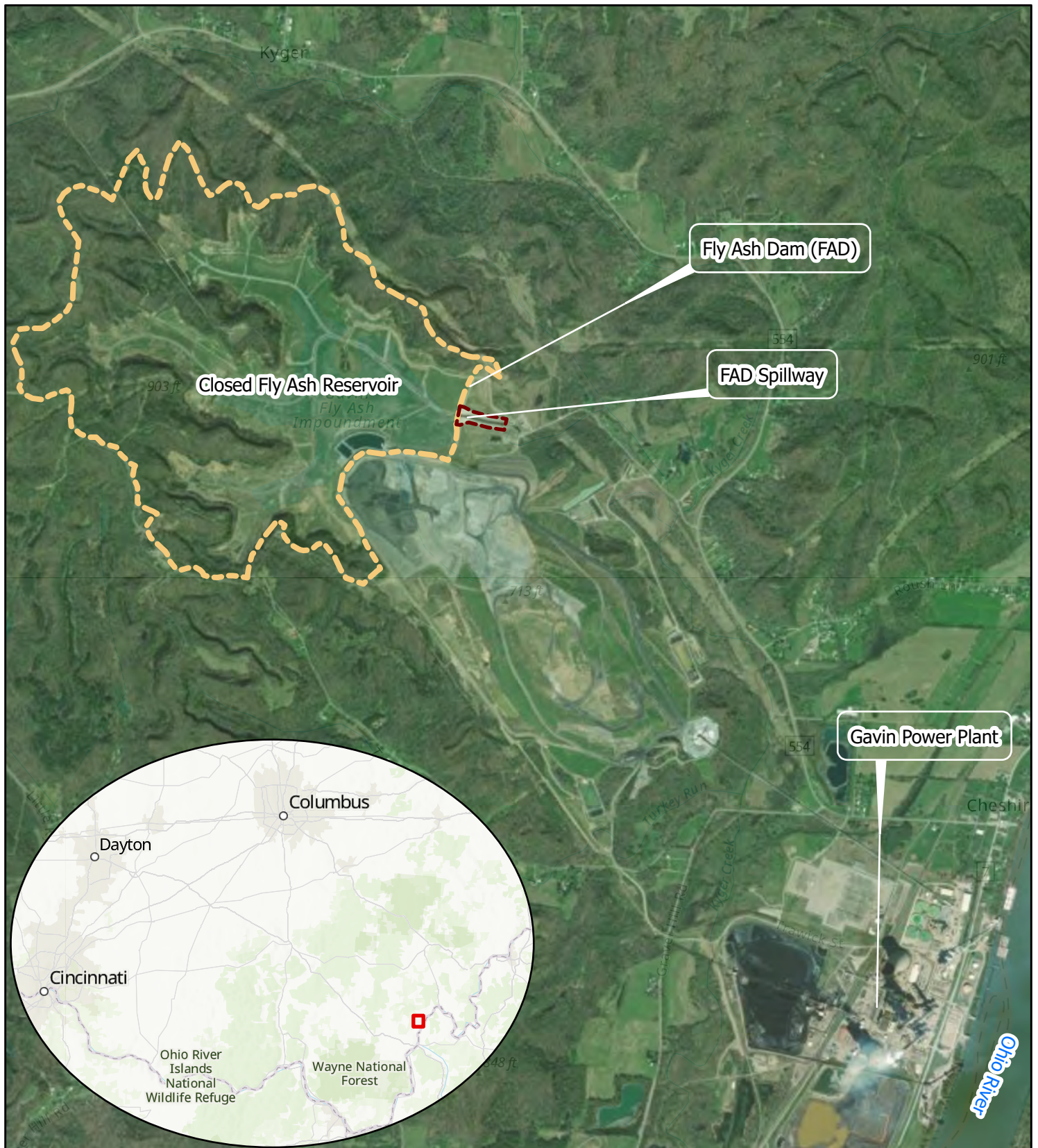
The meeting will be held regardless of whether one of the three Emergency Conditions defined in this EAP **Section 4.3** has occurred. If an incident defined by one of these Emergency Conditions occurs, then the annual meeting date may be moved to discuss the incident soon after it occurs. Documentation of the annual face-to-face meeting shall be maintained in plant operating record.

7. INUNDATION MAPS

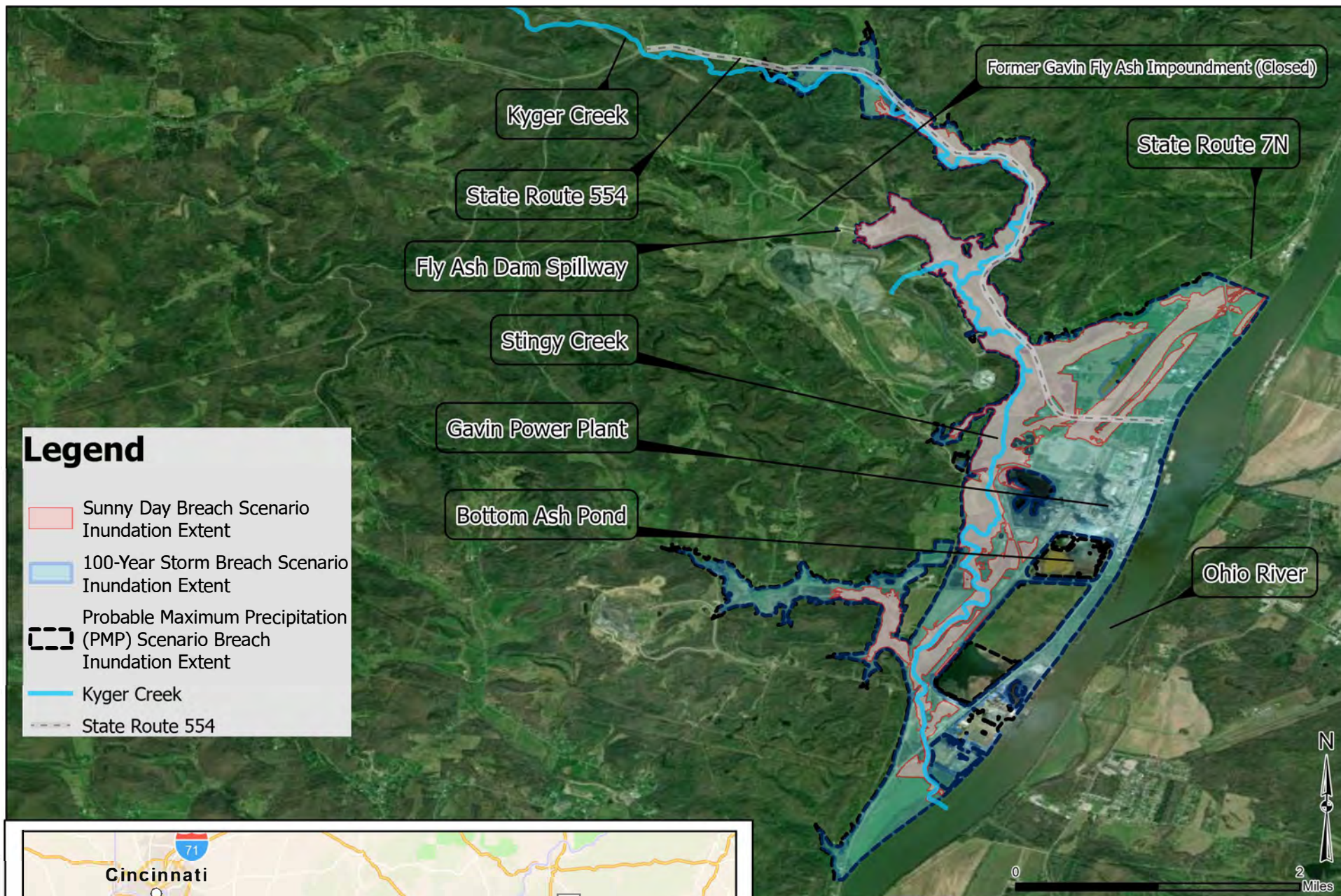
Exhibits 6-1 to 6-5 include flood inundation maps which are intended to delineate areas subject to flood waters in the event of a failure of the FAD. **Appendix A** contains the Inundation Study Technical Memorandum, which provides a description of the method and assumptions that were used to perform a quantitative analysis using hydraulic modeling software for three hypothetical dam failure scenarios for the FAD – specifically, the PMF and 100-year storm with failure of the FAD and normal pool (“sunny day”) failure of the FAD.

It should be noted that, because of the method and procedures used to develop the flooded area in the inundation maps, the limits of flooding shown are approximate and should be used solely as a guideline for establishing evacuation zones. Actual evacuation zones may be greater than the area covered by the flooded areas shown and should be established by local officials based on their judgment and knowledge of local conditions.

The study considers hypothetical dam failure events of an unlikely nature. The results are not intended in any way to reflect on the integrity of the dams.



Legend  Closed Fly Ash Reservoir  FAD Spillway  0 2,000 Feet		Fly Ash Dam Gavin Power Plant Cheshire, Ohio	
Geosyntec consultants		Exhibit 5	
CHE8273E	August 2025		



**Gavin Power Plant
Fly Ash Dam (FAD)
Inundation Extent Map**

Cheshire, OH

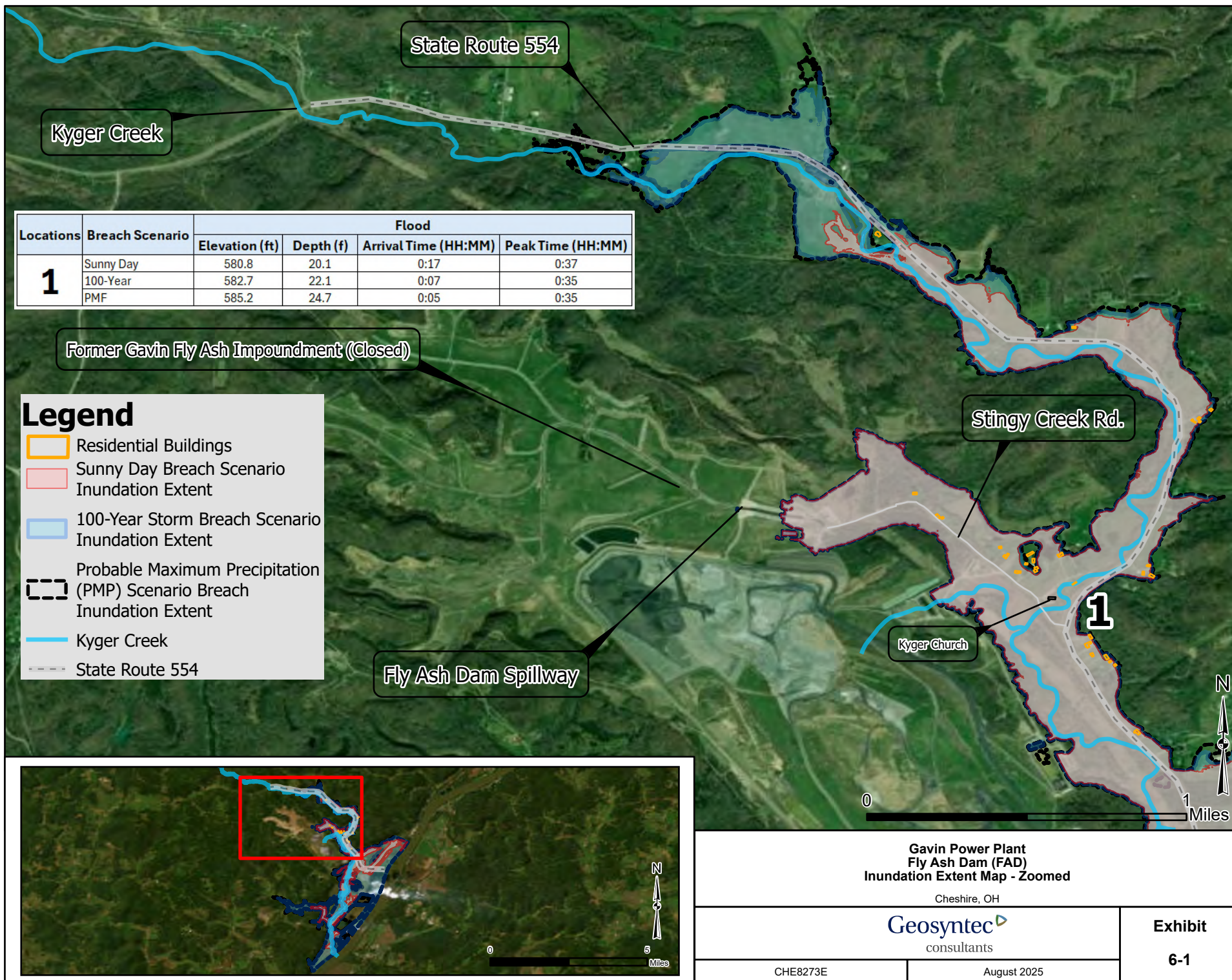
Geosyntec
consultants

Exhibit

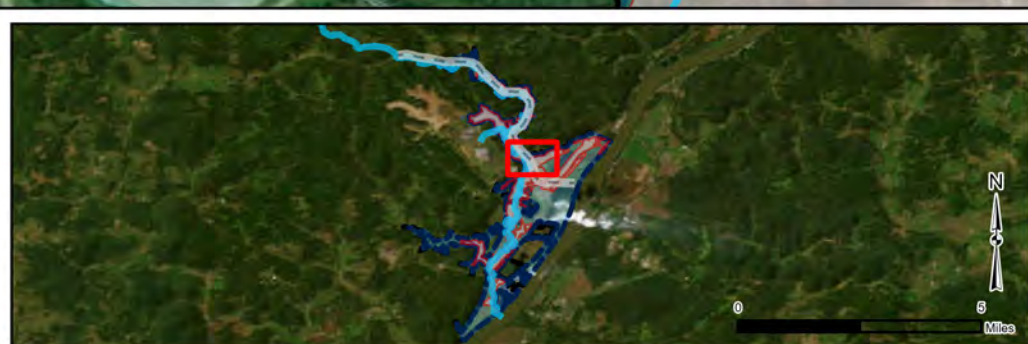
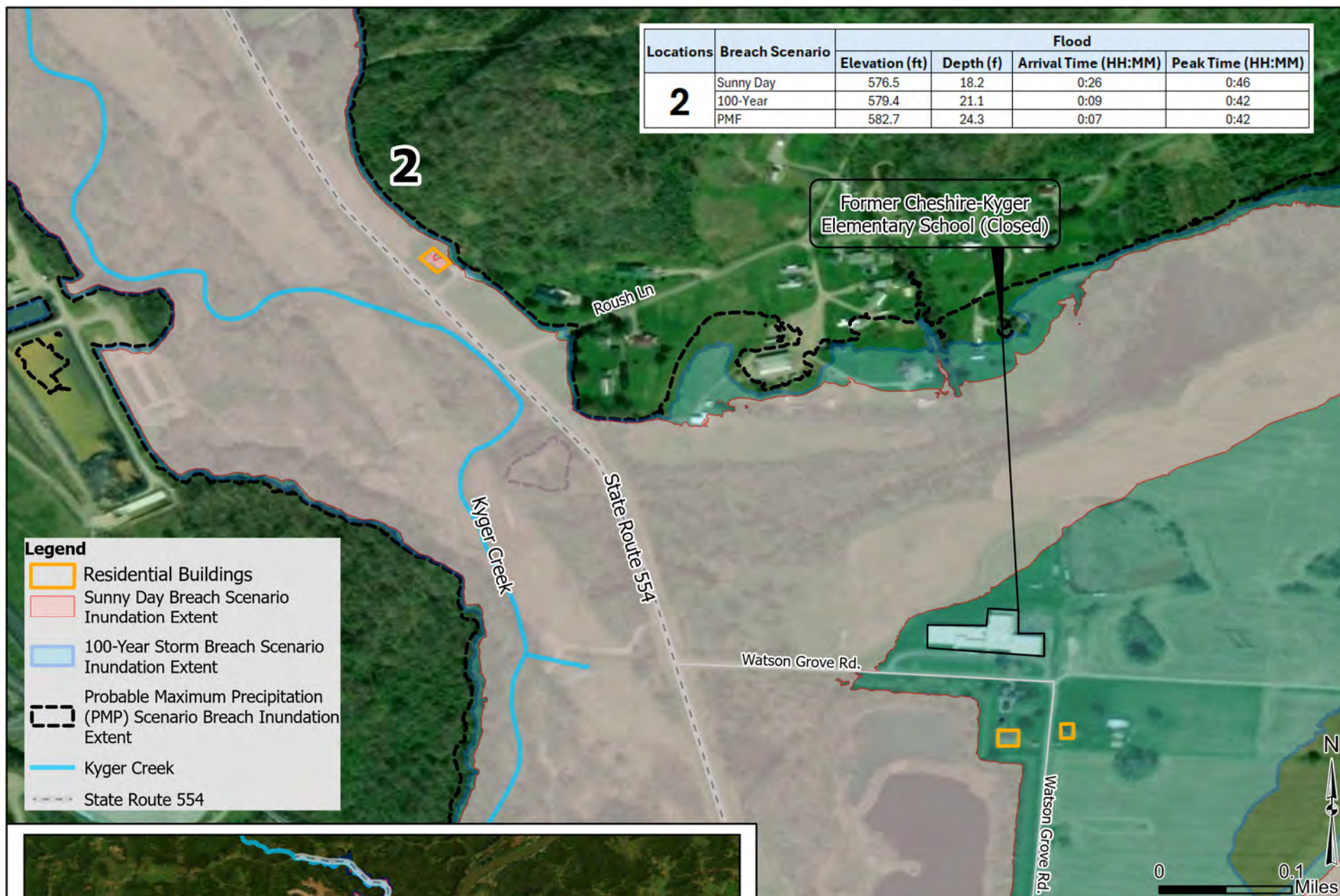
6

CHE8273E

April 2025



Locations	Breach Scenario	Flood			
		Elevation (ft)	Depth (f)	Arrival Time (HH:MM)	Peak Time (HH:MM)
2	Sunny Day	576.5	18.2	0:26	0:46
	100-Year	579.4	21.1	0:09	0:42
	PMF	582.7	24.3	0:07	0:42



**Gavin Power Plant
Fly Ash Dam (FAD)
Inundation Extent Map - Zoomed**

Cheshire, OH

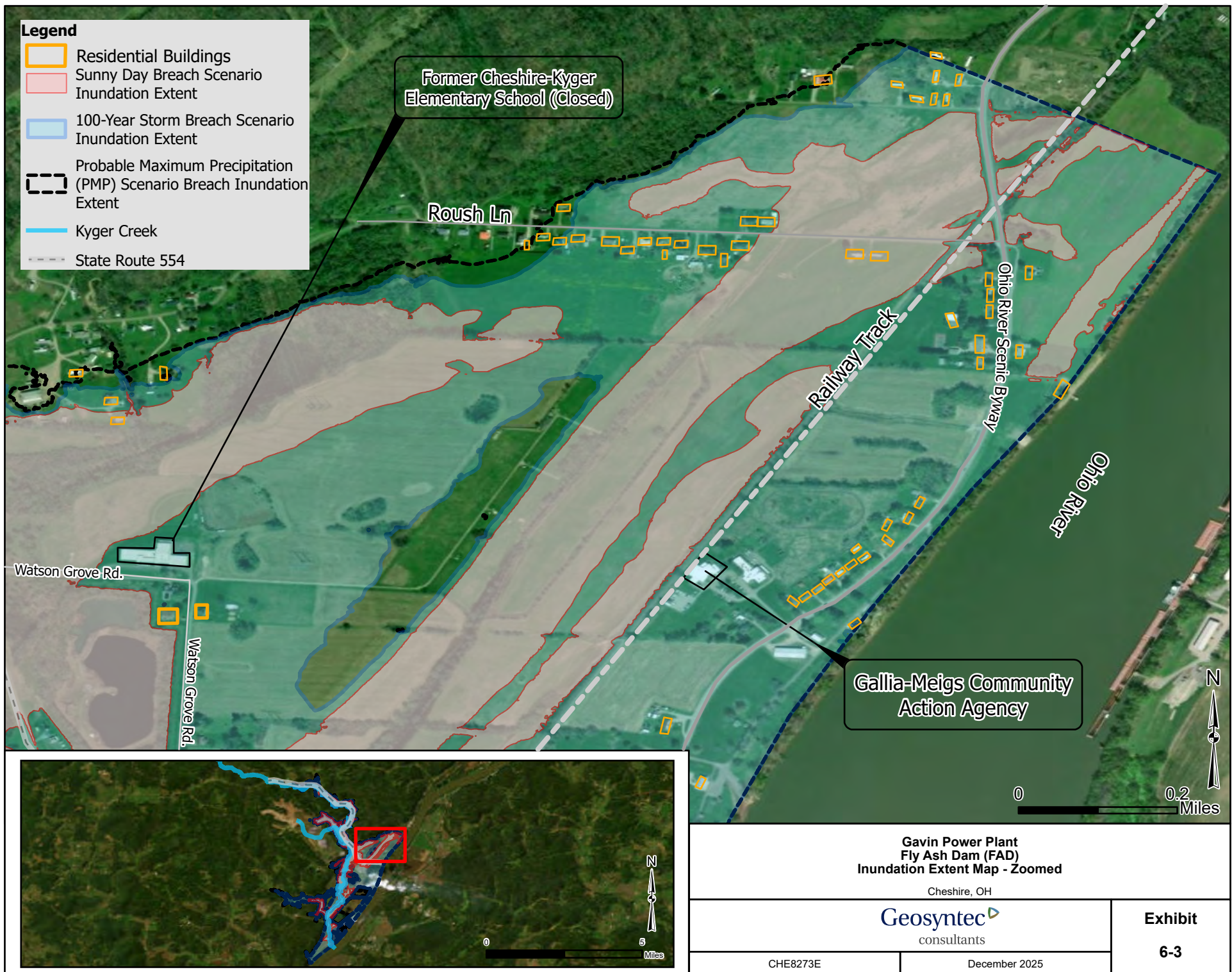
Geosyntec
consultants

Exhibit

6-2

CHE8273E

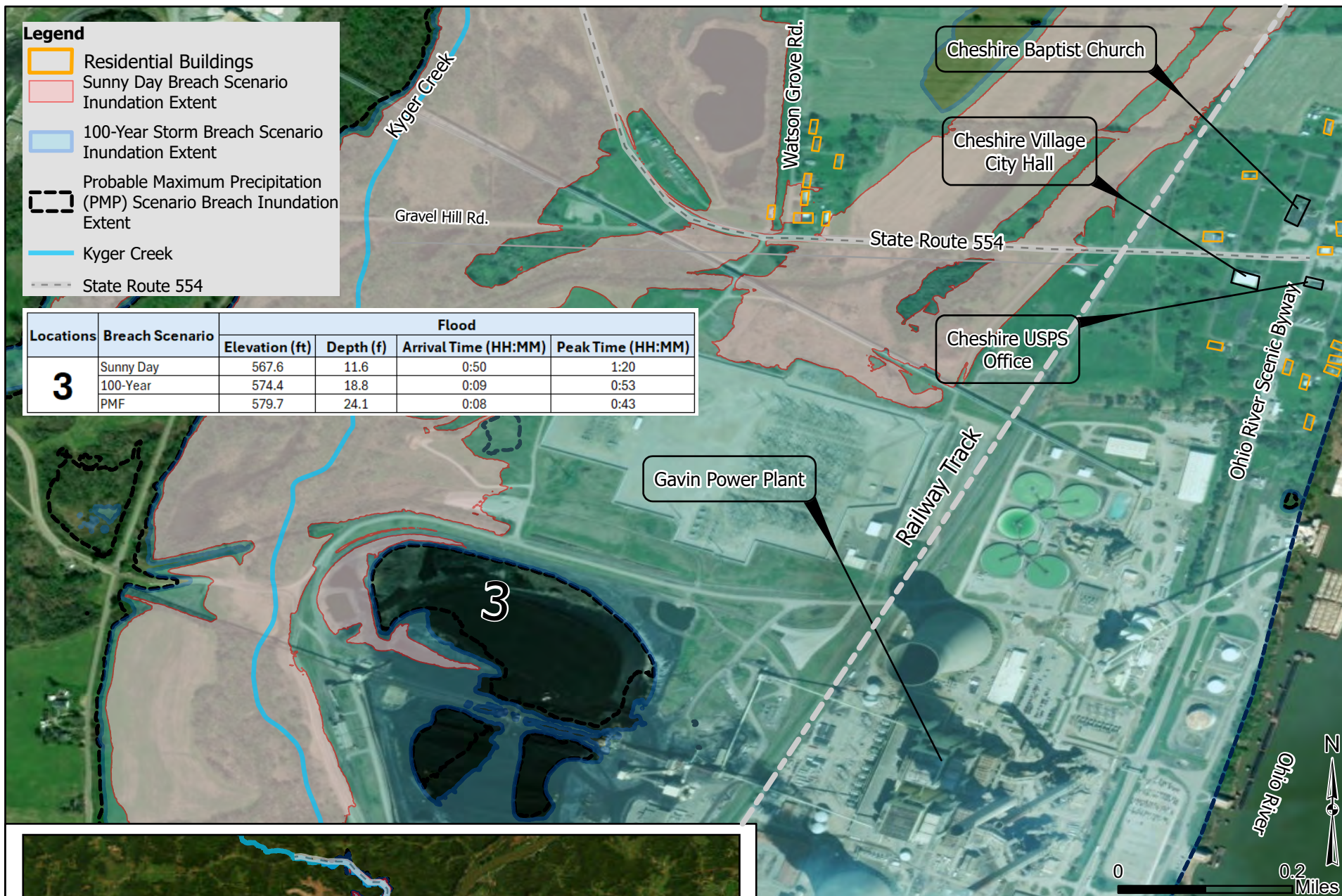
April 2025



Legend

-  Residential Buildings
-  Sunny Day Breach Scenario Inundation Extent
-  100-Year Storm Breach Scenario Inundation Extent
-  Probable Maximum Precipitation (PMP) Scenario Breach Inundation Extent
-  Kyger Creek
-  State Route 554

Locations	Breach Scenario	Flood			
		Elevation (ft)	Depth (f)	Arrival Time (HH:MM)	Peak Time (HH:MM)
3	Sunny Day	567.6	11.6	0:50	1:20
	100-Year	574.4	18.8	0:09	0:53
	PMF	579.7	24.1	0:08	0:43



Gavin Power Plant Fly Ash Dam (FAD) Inundation Extent Map - Zoomed

Cheshire, OH

Geosyntec
consultants

Exhibit

6-4

CHE8273E

December 2025

Legend

- Sunny Day Breach Scenario Inundation Extent
- 100-Year Storm Breach Scenario Inundation Extent
- - - Probable Maximum Precipitation (PMP) Scenario Breach Inundation Extent
- Kyger Creek
- - - State Route 554

Gavin Power Plant

Bottom Ash Pond

Locations	Breach Scenario	Flood			
		Elevation (ft)	Depth (f)	Arrival Time (HH:MM)	Peak Time (HH:MM)
4	Sunny Day	558.2	17.2	1:37	2:21
	100-Year	573.9	33	0:05	1:02
	PMF	579.6	38.6	0:04	0:47
5	Sunny Day	567	17.9	1:47	2:59
	100-Year	576.4	34.3	0:03	1:08
	PMF	581.2	40.4	0:03	0:49

Railway Track

Little Kyger Rd.

Kyger Creek

Ohio River Scenic Byway

Ohio Valley Electric Corp.

Ohio River



0 0.5 Miles



Gavin Power Plant Fly Ash Dam (FAD) Inundation Extent Map - Zoomed

Cheshire, OH

Geosyntec
consultants

Exhibit

6-5

CHE8273E

December 2025

Appendix A

Investigation and Analysis of Dam Break Flood

GEOSYNTEC CONSULTANTS
COMPUTATION COVER SHEET

Client: Gavin Plant

Project: Dam Breach Analysis

Project #: CHE8273E

TITLE OF COMPUTATIONS **Dam Breach and Inundation Analysis for the Stingy Run Fly Ash Dam**

COMPUTATIONS BY:

Signature



August 15, 2025

DATE

Printed
Name

Shailendra Singh

and Title

Professional

ASSUMPTIONS AND PROCEDURES

CHECKED BY:
(Peer Reviewer)

Signature



August 15, 2025

DATE

Printed
Name

Rishab Mahajan

and Title

Principal

August 15, 2025

COMPUTATIONS CHECKED BY:

Signature



August 15, 2025

DATE

Printed
Name

Rishab Mahajan, PE (GA)

and Title

Principal

**COMPUTATIONS
BACKCHECKED BY: (Originator)**

Signature



August 15, 2025

DATE

Printed
Name

Shailendra Singh

and Title

Professional

APPROVED BY:
(PM or Designate)

Signature



August 15, 2025

DATE

Printed
Name

John Seymour, PE (OH)

and Title

Senior Principal

APPROVAL NOTES:



DAM BREACH ANALYSIS

GAVIN POWER PLANT FLY ASH DAM

1. BACKGROUND AND PURPOSE

This calculation has been prepared to support the development of Emergency Action Plan (EAP) for the Stingy Run Fly Ash Dam, referred to herein as the Fly Ash Dam (FAD).

2. SITE DESCRIPTION

The Gavin Power Plant is located in Gallia County, Ohio, just south of Cheshire, Ohio. The FAD is located approximately 2.5-miles northwest of the Gavin Power Plant in Section 15, Township 5 North, Range 14 West, Cheshire Township, Gallia County, OH as shown on **Figure 1**.

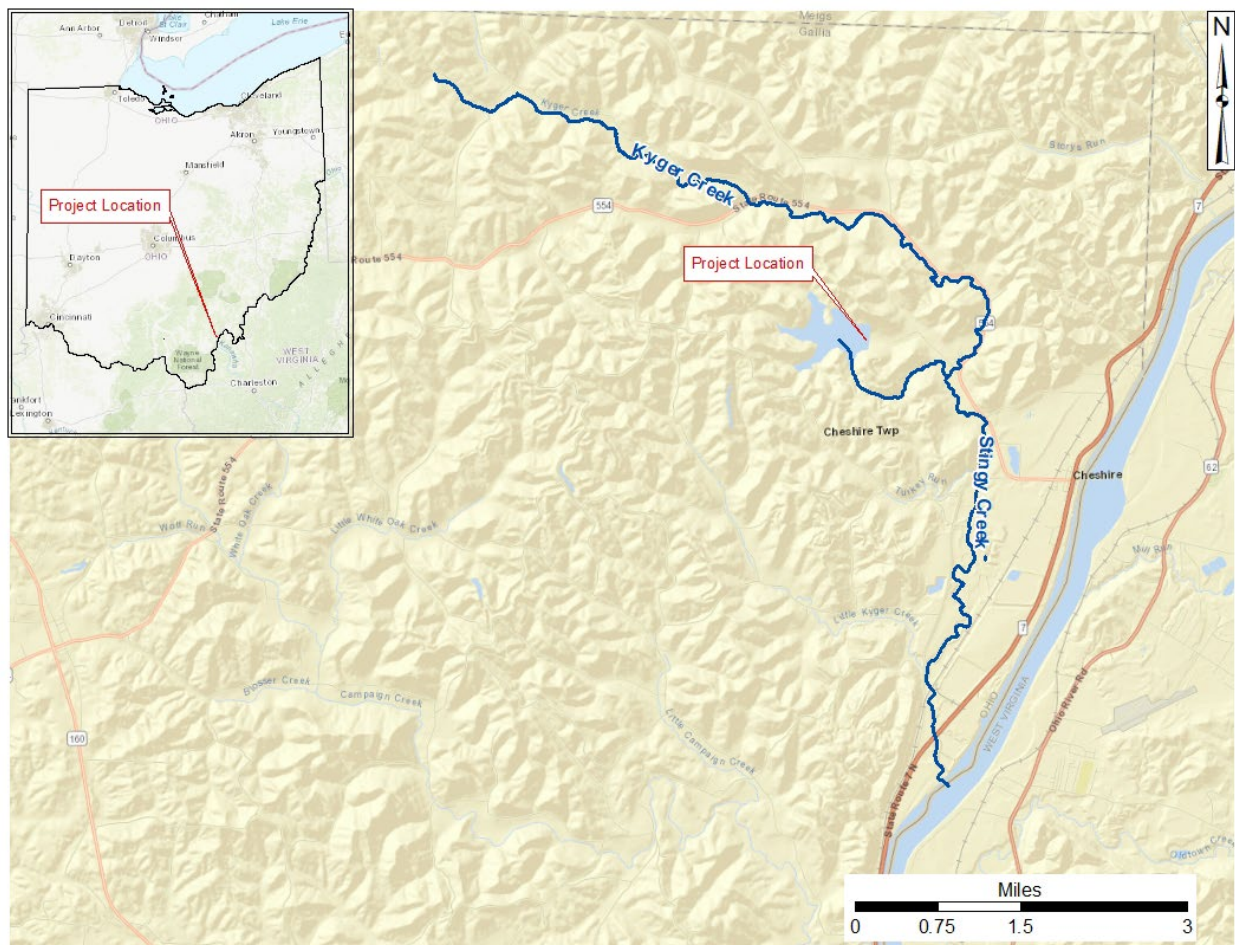


Figure 1. Site Location Map

3. EMBANKMENT BREACH DEVELOPMENT

3.1 Modes of Breach Failure

Typical dam failure modes based on Federal Emergency Management Agency (FEMA, 2013) are summarized in **Table 1** below:

Table 1. Typical Dam Failure Modes, FEMA (2013)

Failure Mode	Example	Percentage of Failures ¹
Hydrologic	Overtopping	70.9%
Geologic	Piping/Seepage	14.3%
Structural	Failure of upstream/downstream face	1.8%
Seismic	Earthquake	unlisted
Human Related	Mis-operation/Terrorism	0.6%

Three different failure modes were initially considered as potential breaches for the FAD. These include failure due to piping, global slope stability failure, and failure due to overtopping. The recently constructed (2021) FAD retrofits and Fly Ash Reservoir (FAR) closure significantly reduce the likelihood of a breach from any failure modes shown in **Table 1**. The lowered FAD embankment with flattened downstream slope and subsurface drainage systems increase global slope stability and the piping factor of safety. The new concrete-lined spillway designed for a PMF event and the Fly Ash Reservoir closure's drainage system mitigate dam overtopping. However, there is still potential for these failure modes due to extreme events, clogging of spillways or drainage features, spillway deterioration, etc.

A failure mode analysis is not available for the FAD to assess which failure mode has the highest probability given the dam's current configuration. Therefore, the overtopping failure mode corresponding to highest percentage of dam failure modes (per FEMA, 2013) was utilized for the FAD breach analysis. Overtopping can occur if the FAD spillway does not perform as intended.

3.2 Selected Breach Scenario

Overtopping was chosen as the failure mode for this breach analysis as discussed in **Section 3.2**. Geosyntec developed a Hydrologic Engineering Center's River Analysis System (HEC-RAS) 2D model to simulate the inundation of the downstream area due to a breach at the low crest elevation in the FAD embankment.

¹ Based on Table 14-2 of the FEMA Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failures (July 2013)

FAD breach with overtopping failure mode was simulated for three separate meteorological event scenarios: sunny day failure, rainy-day failure with 100-year storm event, and rainy-day failure with the Probable Maximum Flood (PMF) storm event.

The model was run under the following assumptions:

1. No infiltration losses are assumed;
2. The discharge structure (FAD Spillway) is completely blocked;
3. No losses due to evapotranspiration were considered.

The crest of the FAD embankment is approximately 661 ft as shown on the as-built design plans (Geosyntec, 2021). The modeled embankment breach scenario assumes the breach would occur at the lowest crest elevation of 661.0 ft. A dam reservoir fly-ash storage volume of 8,900 acre-feet was calculated using the historical topography from 1973, FAR as-built drawings, and the stage-storage calculator in Civil3D. The storage volume represents the cumulative volume from the 584-ft contour (bottom of deposited fly ash in the closed FAR) to the 661-ft FAD overflow invert (spillway crest elevation) of 4,722 acre-feet, plus the 4,178 acre-feet of fly ash and closure cap fill associated with the FAR closure cap cover system located upstream of the FAD spillway crest. The FAR cover system is graded to drain southeastward to the FAD spillway crest. The cover's longest slope of 6700-feet with an average 100H:1V slope reaching peak elevation of 724 feet at its upstream end near the northwestern boundary where it ties into the surrounding grade. The fill volume above embankment crest elevation of 661-feet was used to find the equivalent elevation within the total elevation-storage curve of 682-683 feet. The stage-storage table for the FAR is provided in **Attachment B**.

Table 2 provides the general Site data and characteristics at the modeled breach location.

Table 2. FAD Breach Characteristics

Characteristics (units)	Value
Storage Volume (acre-feet)	8,900
Embankment Crest Elevation (feet)	661
Bottom Elevation (feet)	600
Maximum Depth (feet)	61
Embankment Length (feet, East Embankment)	1899
Embankment Crest Width (feet)	20
Upstream Side Slope (H:1V)	3H:1V
Downstream Side Slope (H:1V)	8H:1V

3.3 Breach Characteristics

Breach characteristics used to develop the breach hydrograph include width, side slope inclinations, breaching time, and the rate at which the breach develops. **Table 3** was reproduced from the FEMA (2013) and is based on the guidelines provided by Federal Energy Regulatory

Commission (FERC, 1993). This was used as an aid to determine breach characteristics for the FAD.

Table 3. FERC Suggested Breach Parameters (Embankment Dams)

Failure Mode	Minimum	Maximum
Average Width	Height of dam	5x height of dam
Side Slope (H:1V)	0.25	1
Breach Time (hour)	0.1	1.0

The breach parameters were estimated using empirical equations provided by Froehlich (2008). Table 4 presents the estimated breach parameters. These values are within the range of values recommended by FEMA.

Table 4. Summary of Breach Parameter Selections

Breach Parameter	Modeled Value
Average Width (feet)	245
Side Slope (H:1V)	1
Breach Time (hour)	1

4. EMBANKMENT BREACH ANALYSIS

4.1 Breach Model Development (Newtonian)

The USACE HEC-RAS 2D (Version 6.1, 2021) modeling software was used to develop inundation maps for the FAD in the event of a dam breach. The following sections describe select parameters and assumptions used in developing the HEC-RAS 2D model.

Model Mesh

The modeling domain was modeled with a computational mesh of 150-foot by 150-foot cells except near the FAD embankment. HEC-RAS 2D utilizes meshes for each cell such that the resolution of the underlying topography is not lost.

Topography Data

The FAD and FAR as-built drawings (Geosyntec, 2021) were used in combination with surrounding LiDAR data downloaded from Ohio Geographically Referenced Information Program (OGRIP) to create a digital elevation model (DEM) of the topography.

Floodplain Manning's Roughness Values

Gridded landcover data was downloaded from National Land Cover Database (NLCD, 2019). Manning's roughness values were assigned based on recommendations from Natural Resource

Conservation Service (NRCS) provided in “Manning’s n Values for Various Land Covers” (USDA, 2016). The Manning’s n values for areas immediately downstream of FAD embankment were refined based on aerial imagery. **Table 5** summarizes the Manning’s roughness values assigned for each land use. **Figure 2** shows the extent of different land uses in the HEC-RAS 2D model.

Table 5: Floodplain Manning’s Roughness

Land Use	Manning’s Roughness
Barren land rock/sand/clay	0.025
Deciduous forest	0.16
Developed, high intensity	0.15
Developed, low intensity	0.10
Developed, medium intensity	0.08
Developed, open space	0.04
Emergent herbaceous wetlands	0.07
Evergreen forest	0.16
Grassland/herbaceous	0.035
Mixed forest	0.16
Open water	0.04
Pasture/hay	0.03
Shrub/scrub	0.10
Woody wetlands	0.12

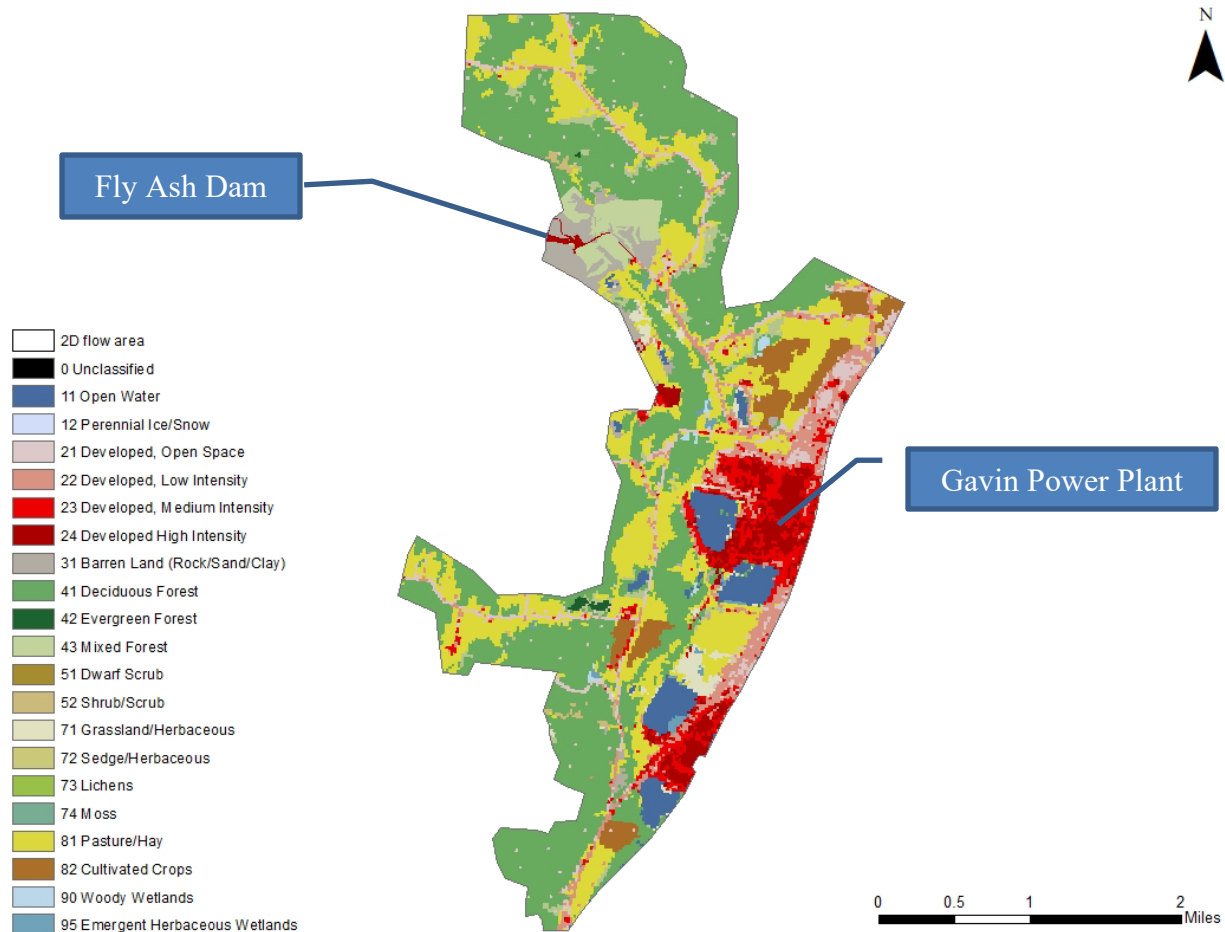


Figure 2. Land Use Areas

Unsteady Flow Data

Geosyntec used the existing hydrology model for the Site, which was developed for hydrologic capacity assessment of the current FAD spillway (Geosyntec, 2021). Both 100-year and PMF storm hydrographs from the FAD spillway capacity assessment were used for inflow hydrograph inputs in the rainy-day dam breach simulations. The estimated hydrographs are shown in Figure 3 and Figure 4, with peak flows of 1927 cfs and 16447 cfs respectively for 100-year and PMP storm.

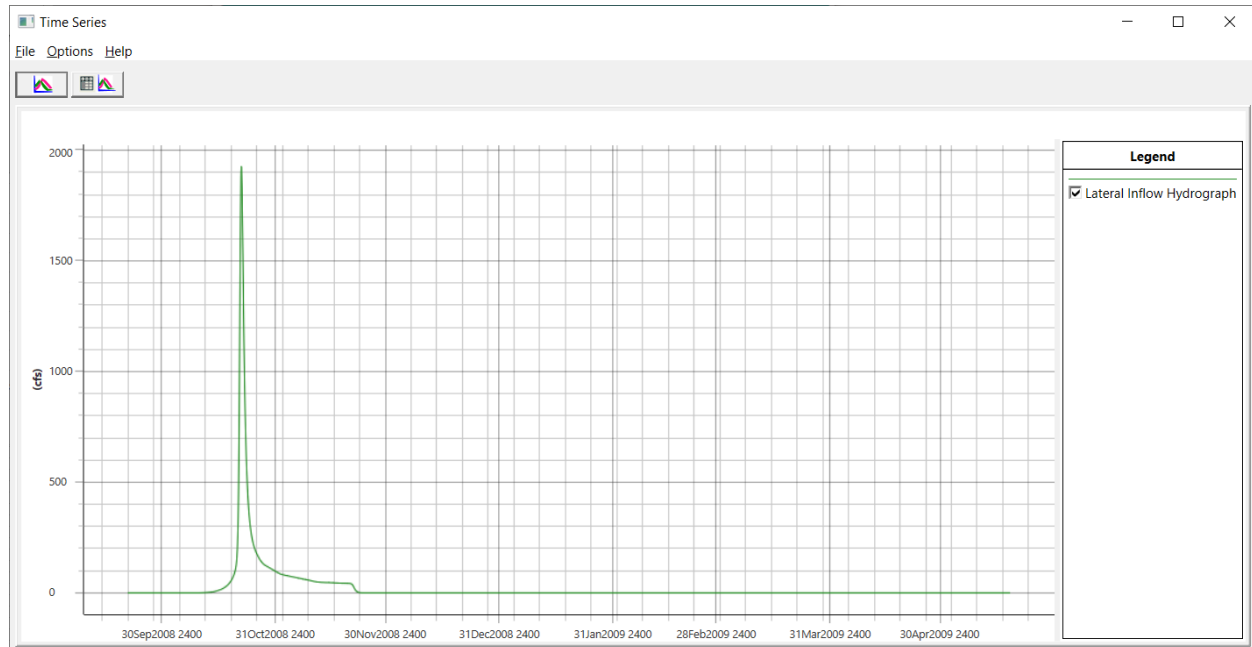


Figure 3. Peak Hydrograph – Rainy Day 100 YR

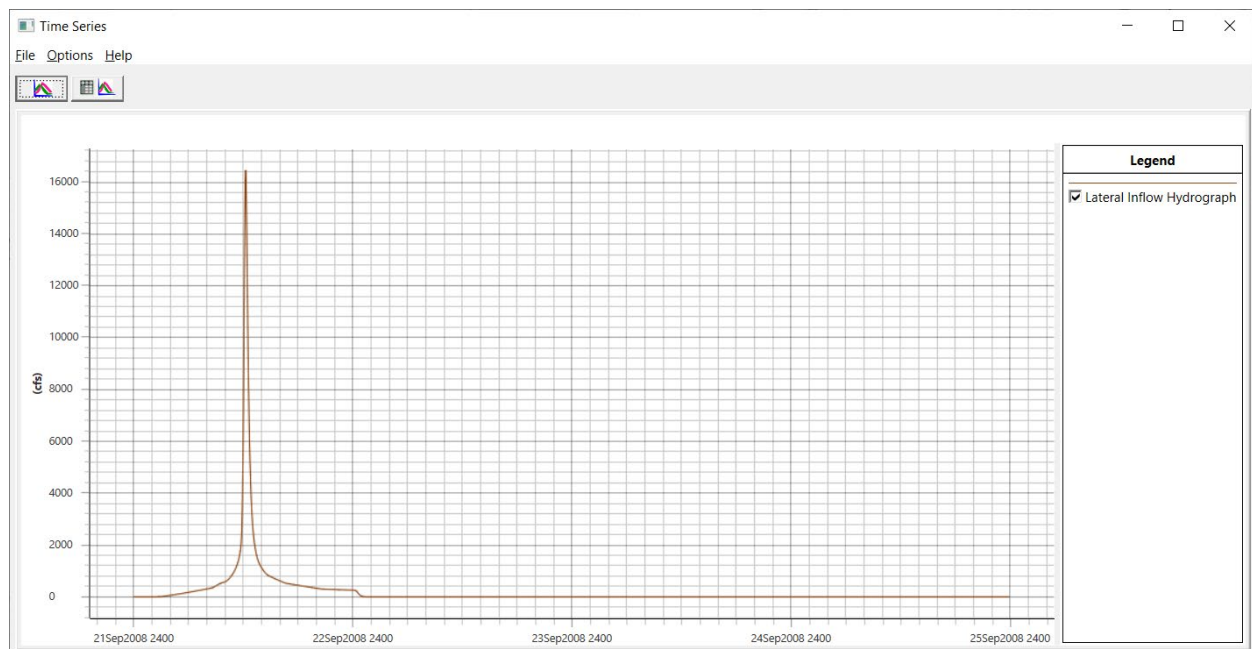


Figure 4. Peak Hydrograph – Rainy Day PMF

The probable maximum precipitation (PMP) used for the PMF analysis was a 24-hour duration with a total rainfall depth of 27 inches. The 100-year precipitation used for the 100-year storm analysis was a 24-hour duration with a total rainfall depth of 5.33 inches. The PMP depth was obtained from Probable Maximum Precipitation Study for the State of Ohio provided in **Attachment C**. The 100-year, 24-hour rainfall depth was obtained from NOAA Precipitation Frequency Data Server report provided in **Attachment C**.

Kyger Creek flows into the creek downstream of FAD spillway. Peak flows from Kyger Creek were estimated using StreamStats for 100- and 500-year storms for use in the 100-year and PMP breach scenarios, respectively. The peak flows, 3,690 cfs for 100-year and 5,180 cfs for 500-year, were input as steady-flow hydrographs (constant flow) for the rainy-day models. The StreamStats report is presented in **Attachment D**.

Initial and Boundary Condition

An upstream boundary condition was implemented at the FAD, using an initial elevation value of 661 feet (embankment crest elevation).

A known water surface elevation was specified along the Ohio River's west bank based upon the Ohio River profile provided in the Mason County Flood Insurance Study (FIS) by FEMA (2021). An excerpt containing the river profile from the FIS is provided in **Attachment E**. Normal depth was used at the southmost portion of the model based on underlying terrain. The boundary conditions are summarized in **Table 6**. The boundary condition lines are shown in Figure 5.

Table 6. Summary of HEC-RAS 2D Model Boundary Conditions

Breach Scenario	Peak Flow into FAD (cfs)	Peak Flow at Kyger Creek (cfs)	Water Surface Elevation at Ohio River (NAVD 88 Feet)
Rainy Day 100-year	1,927	3,690	573.5
Rainy Day PMF (500-year)	16,447	5,180	579.5

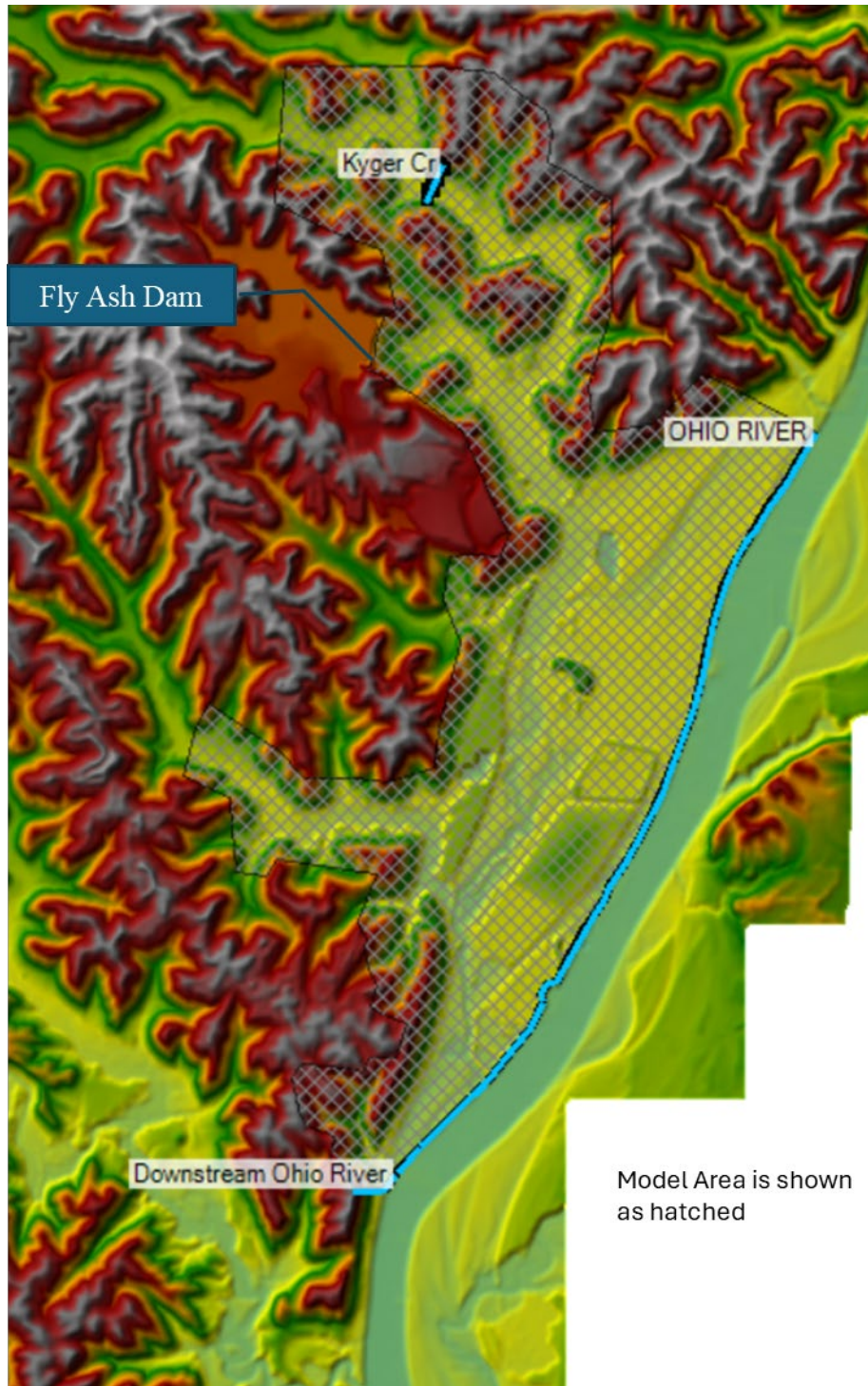


Figure 5. Boundary Conditions

Computational Settings

An adaptive timestep was utilized with computation interval of 1 seconds, mapping output interval of 1 minute, hydrograph output interval of 1 minute, and detailed output interval of 1 minute were selected for the simulation. The settings and tolerances used in the HEC-RAS 2D Model breach simulations are shown in **Attachment F**.

4.2 Fluid properties

The breach simulations were conducted assuming the fly ash to have properties identical to water (Newtonian fluid).

4.3 Results

The 2D HEC-RAS model was run with inputs described in Section 3. A total of three breach simulations were performed: Sunny-Day, 100-year Rainy Day, and PMF Rainy Day. The area of interest likely to be inundated due to FAD failure include Cheshire Baptist Church, Cheshire Village City Hall, Gallia Meigs Community Action, former Cheshire Kyger Elementary School and portions of Ohio State Route 554 and Stingy Creek Road, railroad, Little Kyger Road, Kyger Creek Plants and buildings at the Gavin Power Plant. The maximum inundation extents and depths within the downstream area from each HEC-RAS 2D modeled breach simulation are shown in **Attachment A**.

5. CONCLUSIONS

This memo summarizes the results of the FAD breach analysis and estimates inundation extents for hypothetical breach scenarios; Sunny-Day, 100-year Rainy Day, and PMF Rainy Day PMF of

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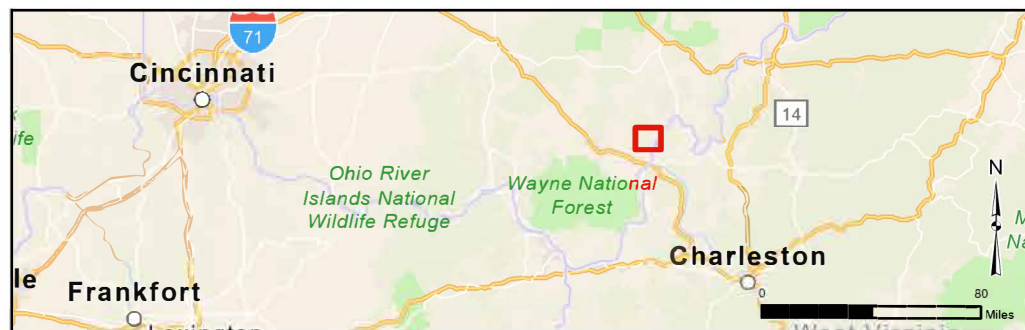
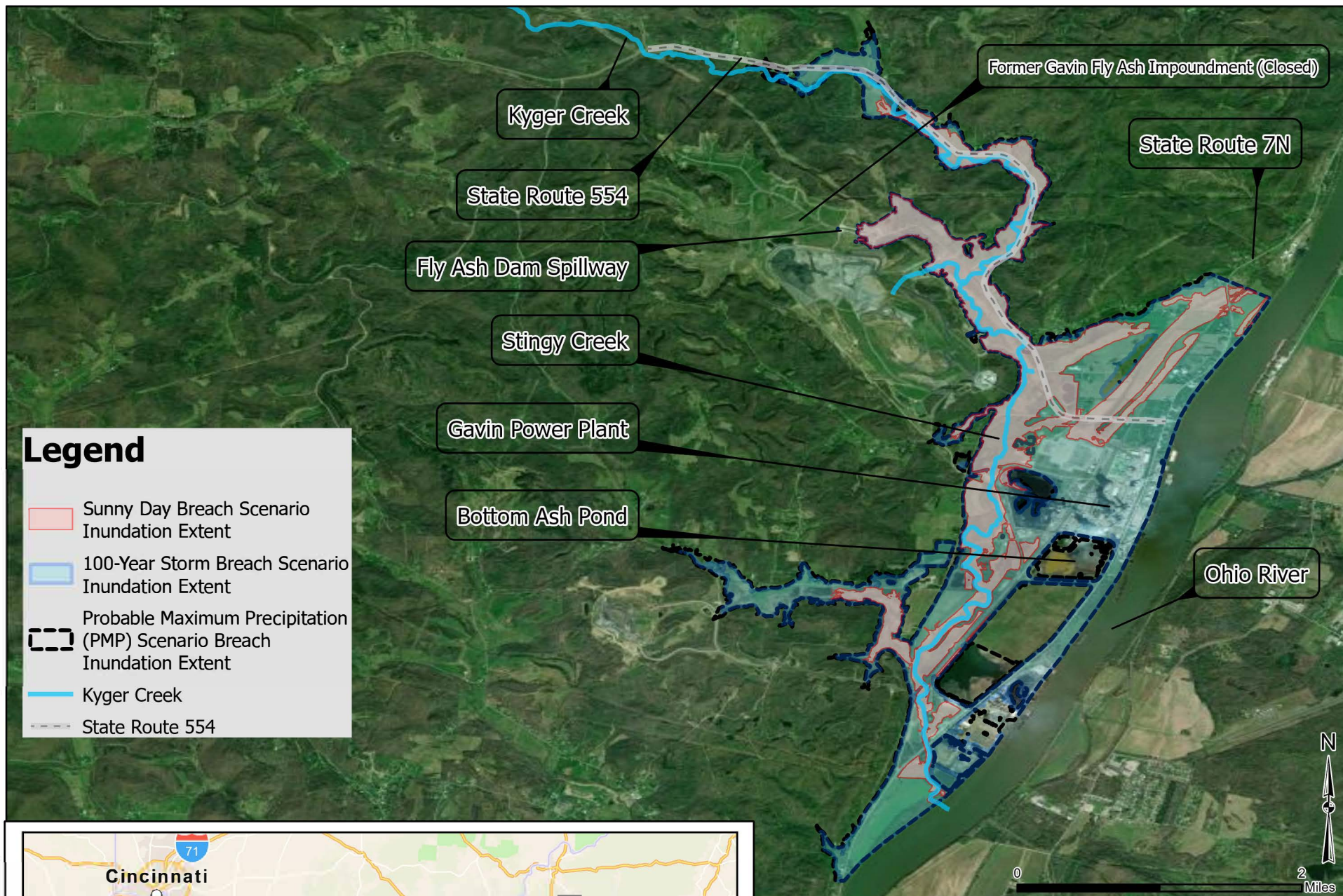
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ATTACHMENT A

MODELED INUNDATION MAP



**Gavin Power Plant
Fly Ash Dam (FAD)
Inundation Extent Map**

Cheshire, OH

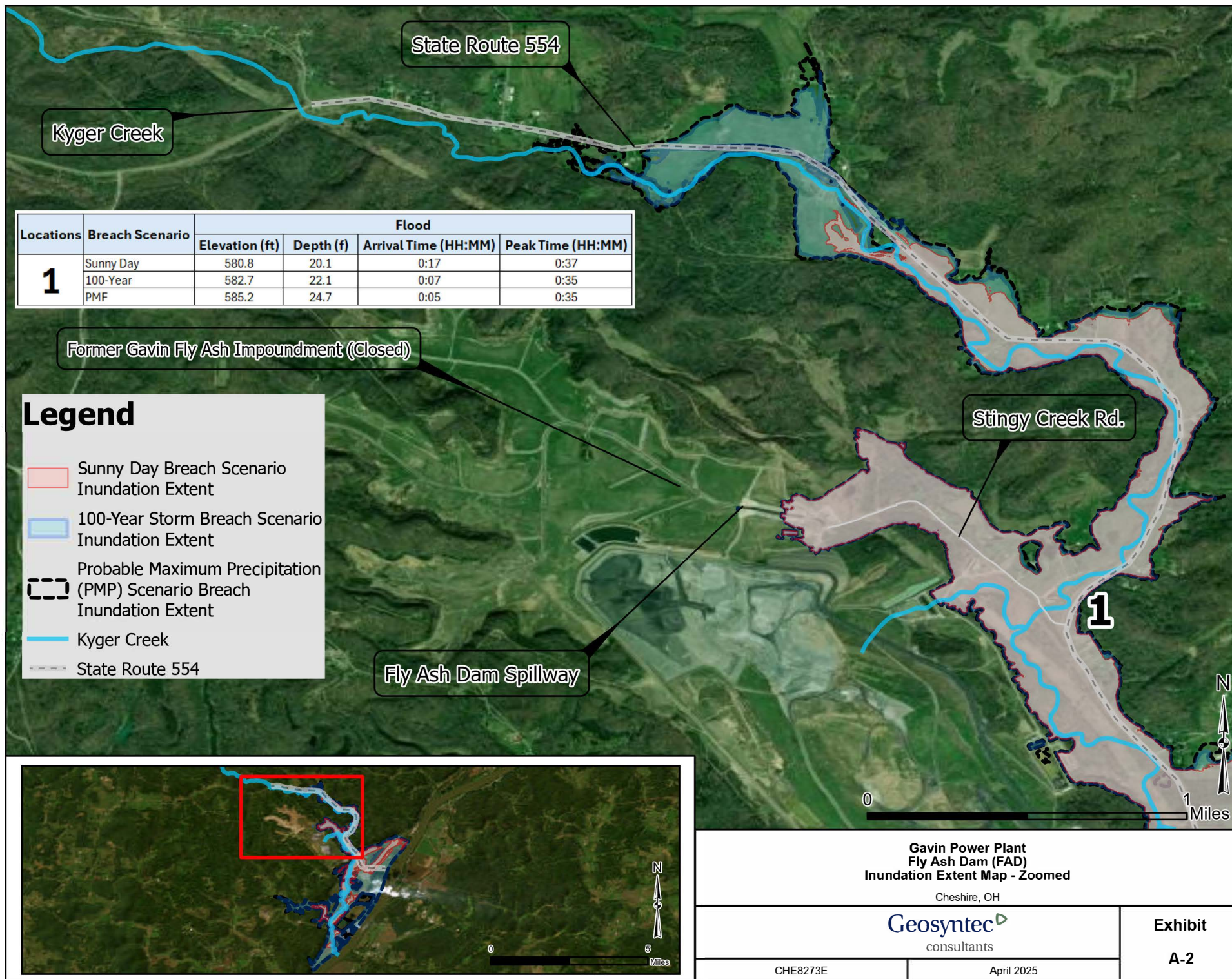
Geosyntec
consultants

Exhibit

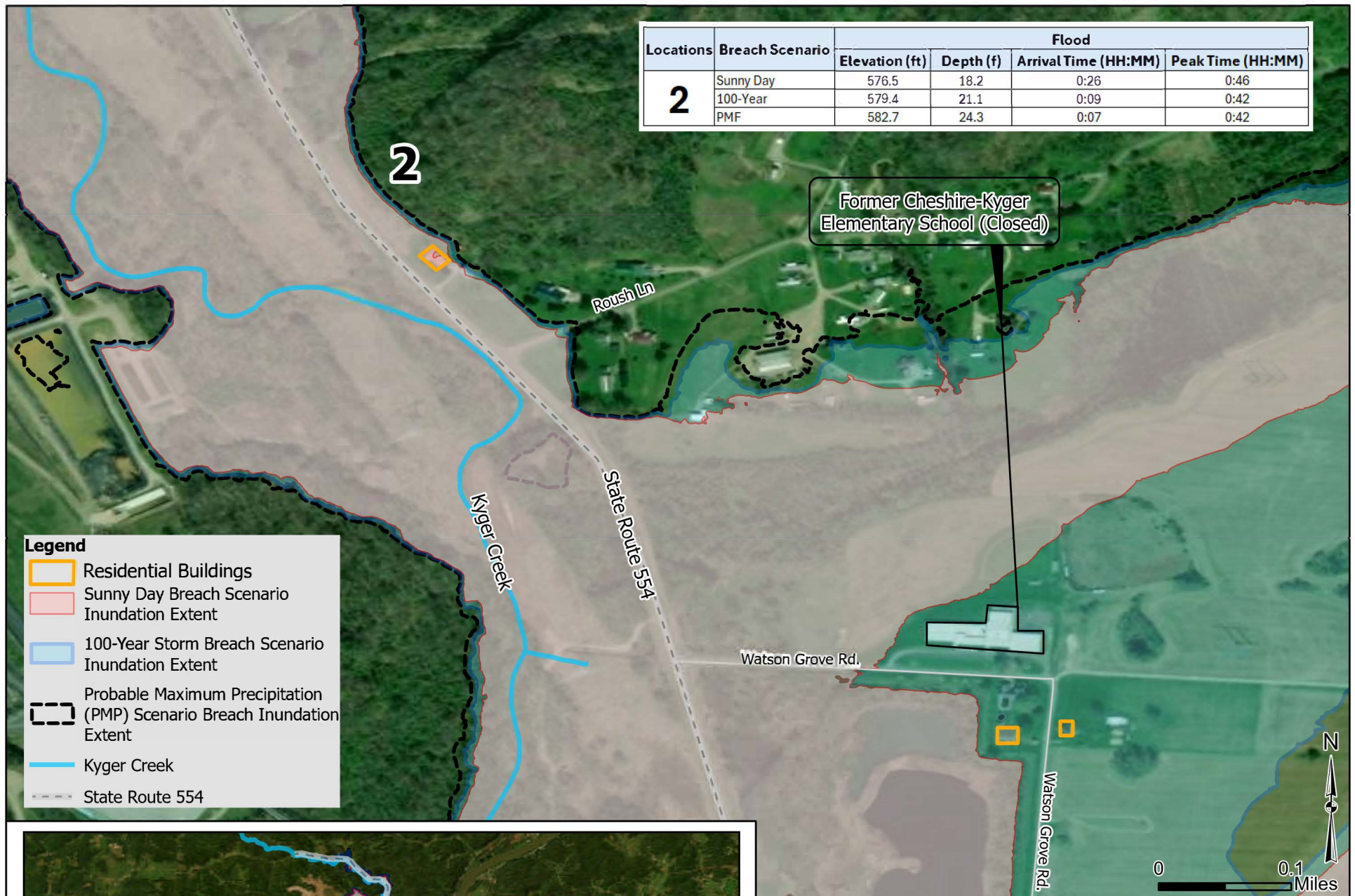
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CHE8273E

April 2025



Locations	Breach Scenario	Flood			
		Elevation (ft)	Depth (f)	Arrival Time (HH:MM)	Peak Time (HH:MM)
2	Sunny Day	576.5	18.2	0:26	0:46
	100-Year	579.4	21.1	0:09	0:42
	PMF	582.7	24.3	0:07	0:42



**Gavin Power Plant
Fly Ash Dam (FAD)
Inundation Extent Map - Zoomed**

Cheshire, OH

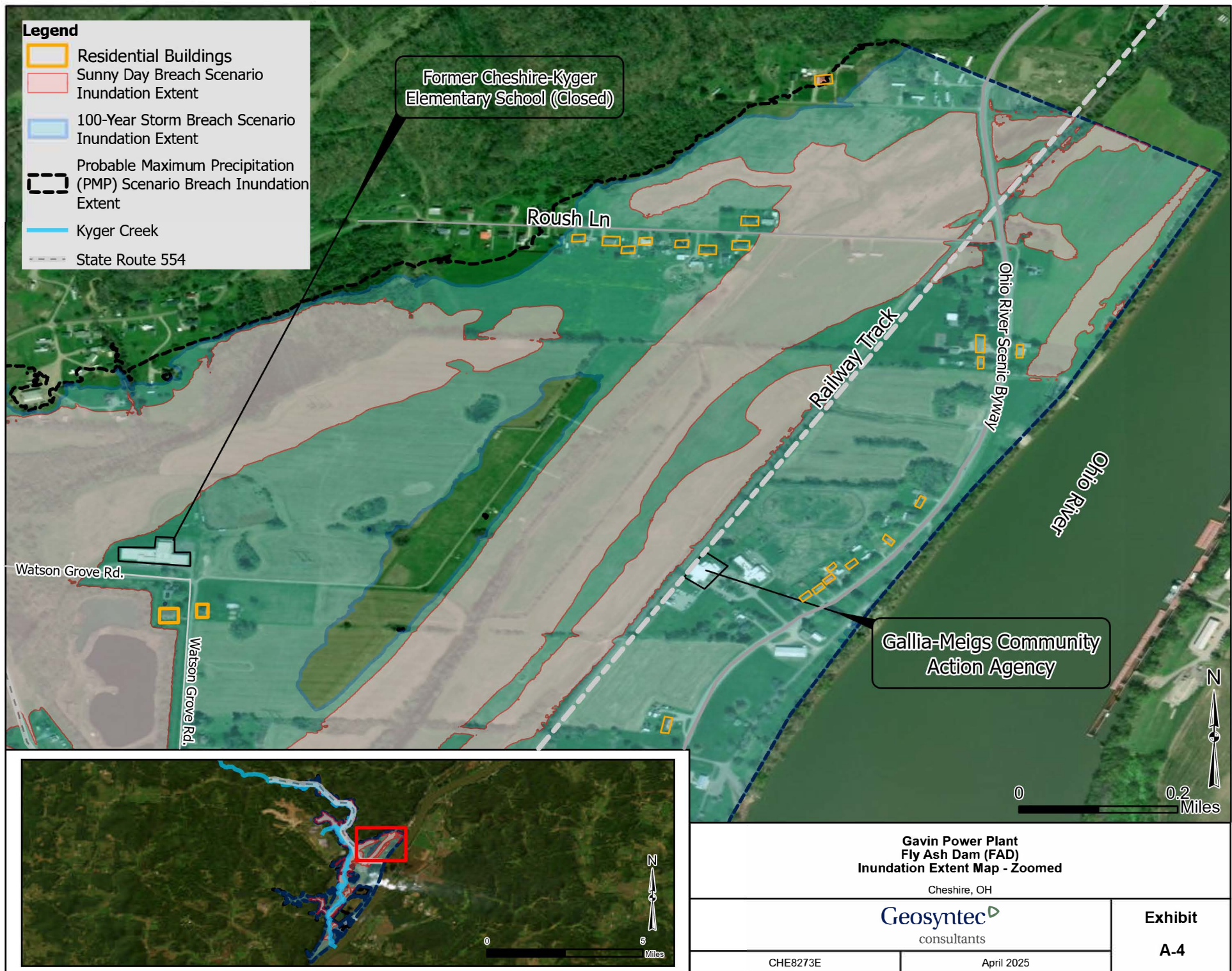
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consultants

Exhibit

A-3

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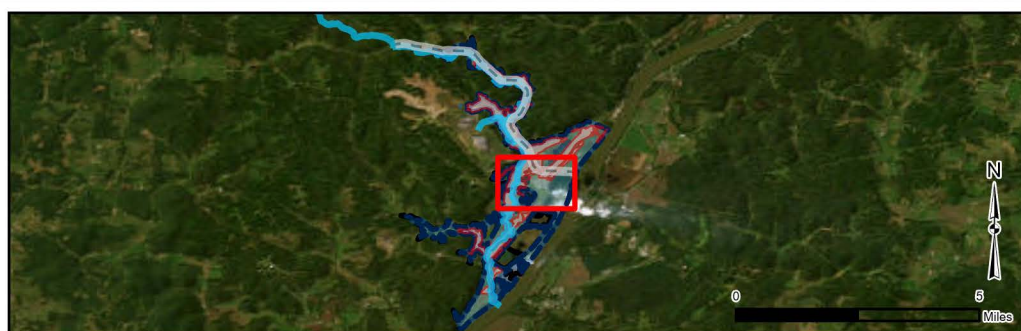
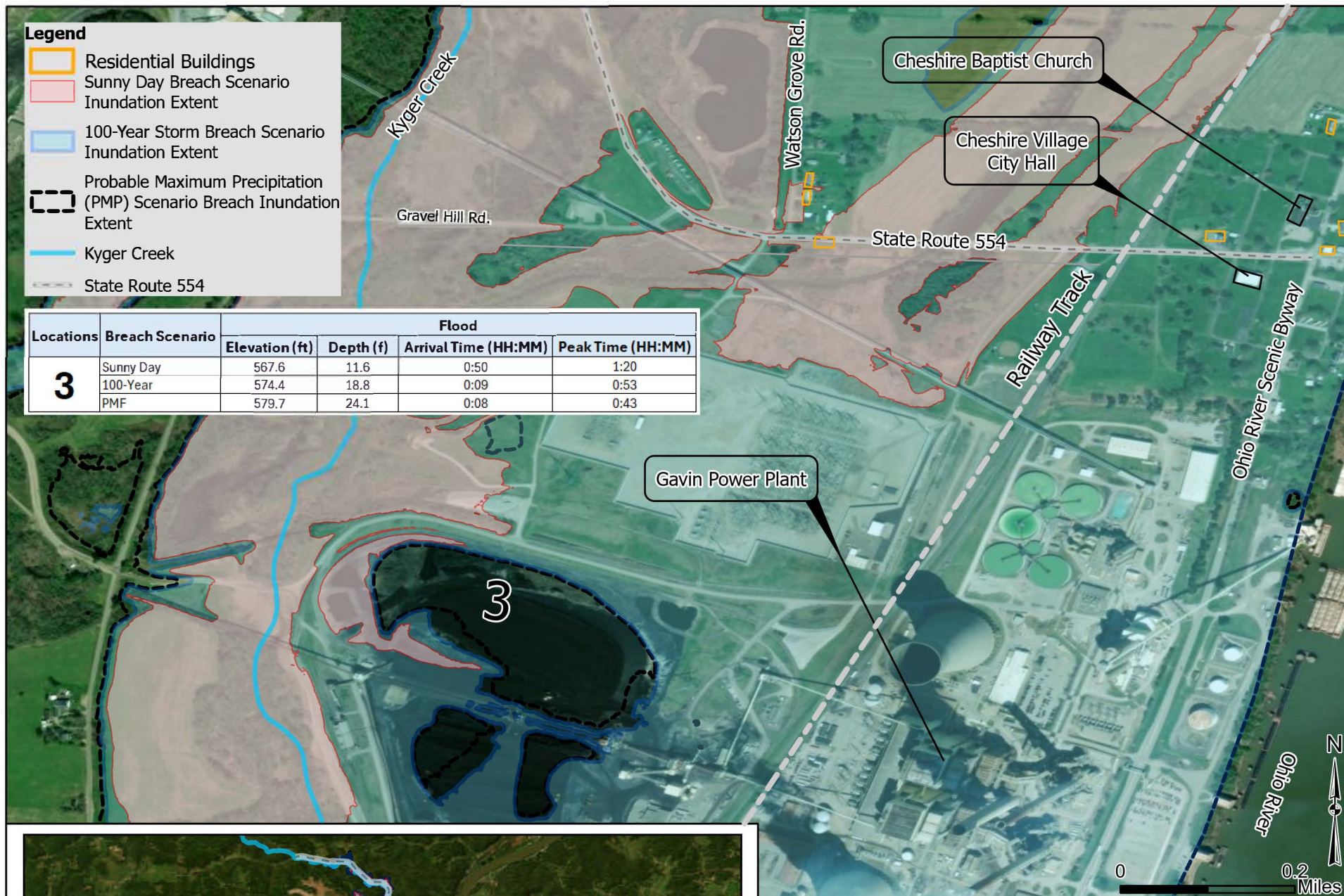
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Legend

- Residential Buildings
- Sunny Day Breach Scenario Inundation Extent
- 100-Year Storm Breach Scenario Inundation Extent
- Probable Maximum Precipitation (PMP) Scenario Breach Inundation Extent
- Kyger Creek
- State Route 554

Locations	Breach Scenario	Flood			
		Elevation (ft)	Depth (f)	Arrival Time (HH:MM)	Peak Time (HH:MM)
3	Sunny Day	567.6	11.6	0:50	1:20
	100-Year	574.4	18.8	0:09	0:53
	PMF	579.7	24.1	0:08	0:43



Gavin Power Plant Fly Ash Dam (FAD) Inundation Extent Map - Zoomed

Cheshire, OH

Geosyntec
consultants

Exhibit

A-5

CHE8273E

April 2025

Legend

- Sunny Day Breach Scenario Inundation Extent
- 100-Year Storm Breach Scenario Inundation Extent
- Probable Maximum Precipitation (PMP) Scenario Breach Inundation Extent
- Kyger Creek
- State Route 554

Gavin Power Plant

Bottom Ash Pond

Locations	Breach Scenario	Flood			
		Elevation (ft)	Depth (f)	Arrival Time (HH:MM)	Peak Time (HH:MM)
4	Sunny Day	558.2	17.2	1:37	2:21
	100-Year	573.9	33	0:05	1:02
	PMF	579.6	38.6	0:04	0:47
5	Sunny Day	567	17.9	1:47	2:59
	100-Year	576.4	34.3	0:03	1:08
	PMF	581.2	40.4	0:03	0:49

Railway Track

Little Kyger Rd.

Kyger Creek

Ohio River Scenic Byway

Ohio River



0 0.5 Miles



Gavin Power Plant Fly Ash Dam (FAD) Inundation Extent Map - Zoomed

Cheshire, OH

Geosyntec
consultants

Exhibit

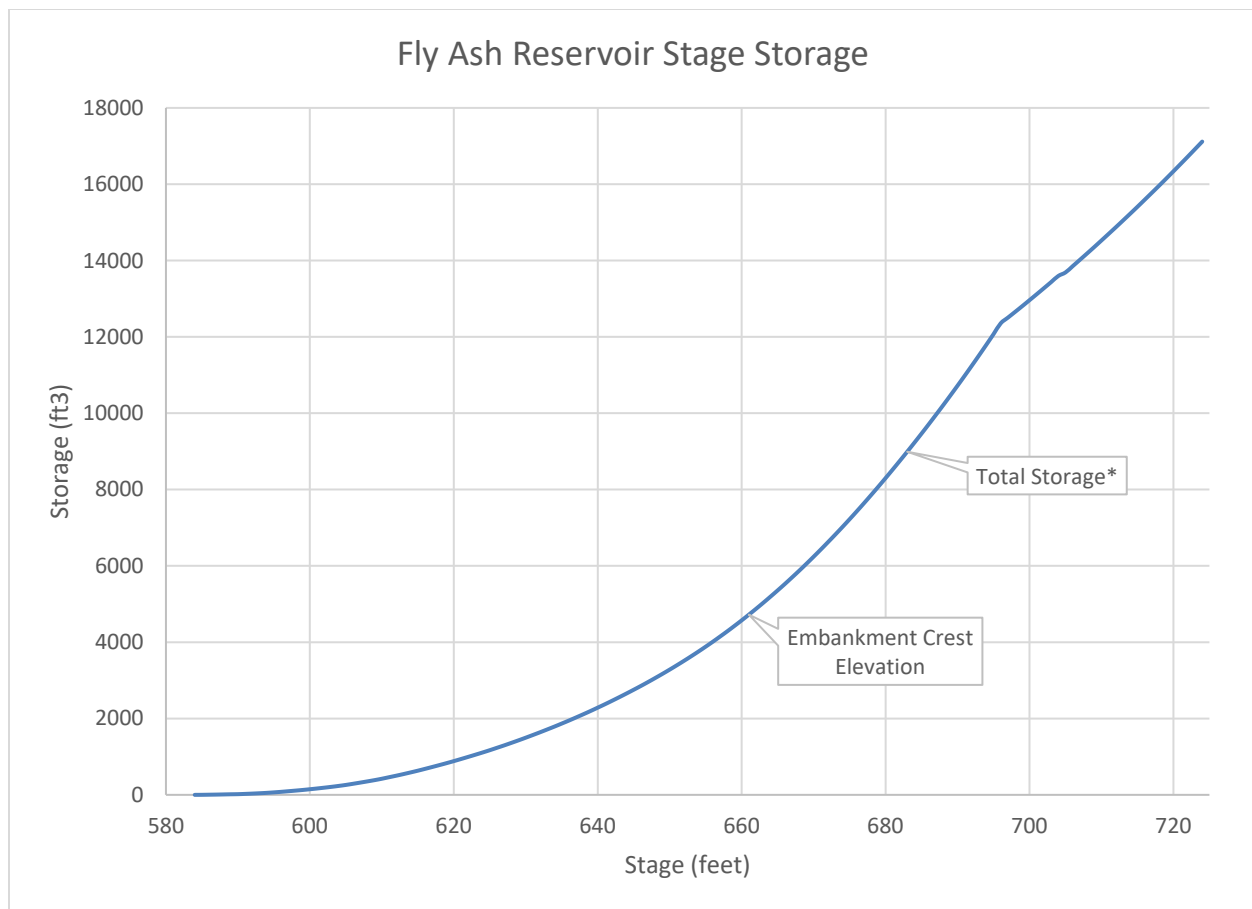
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April 2025

ATTACHMENT B

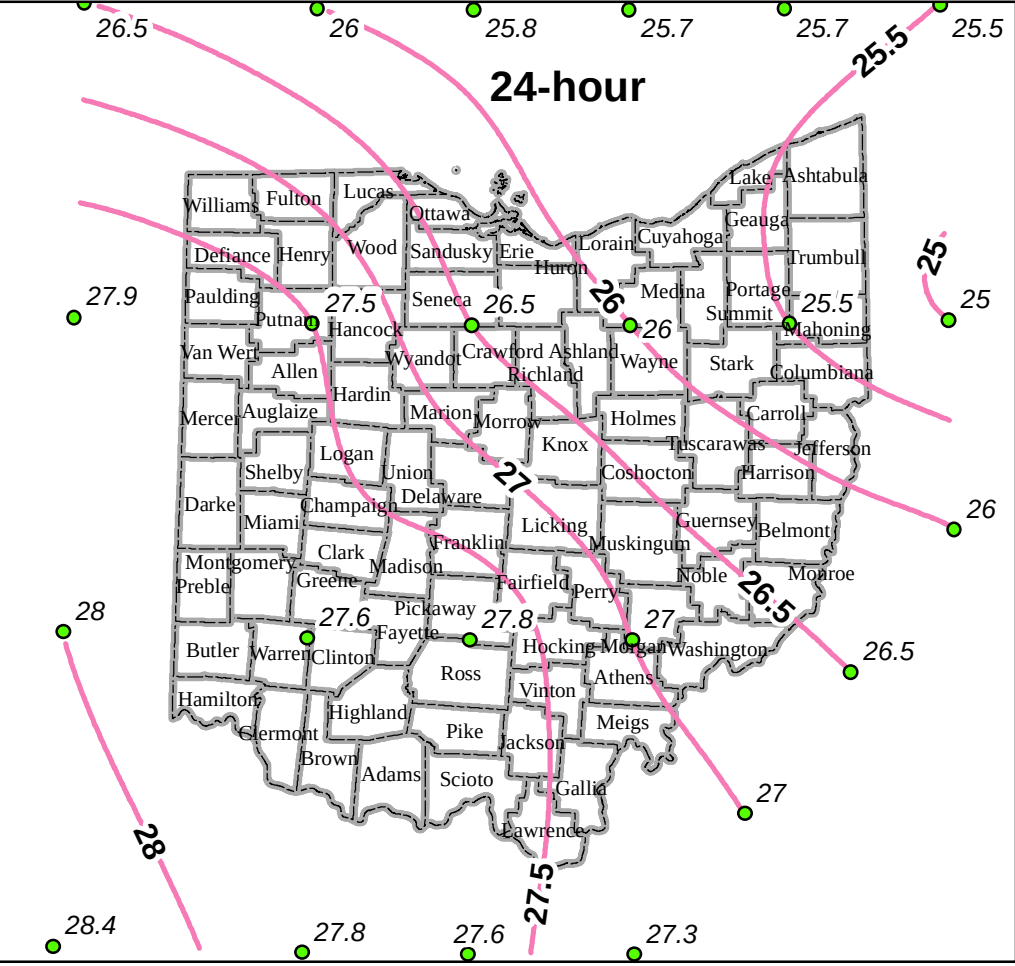
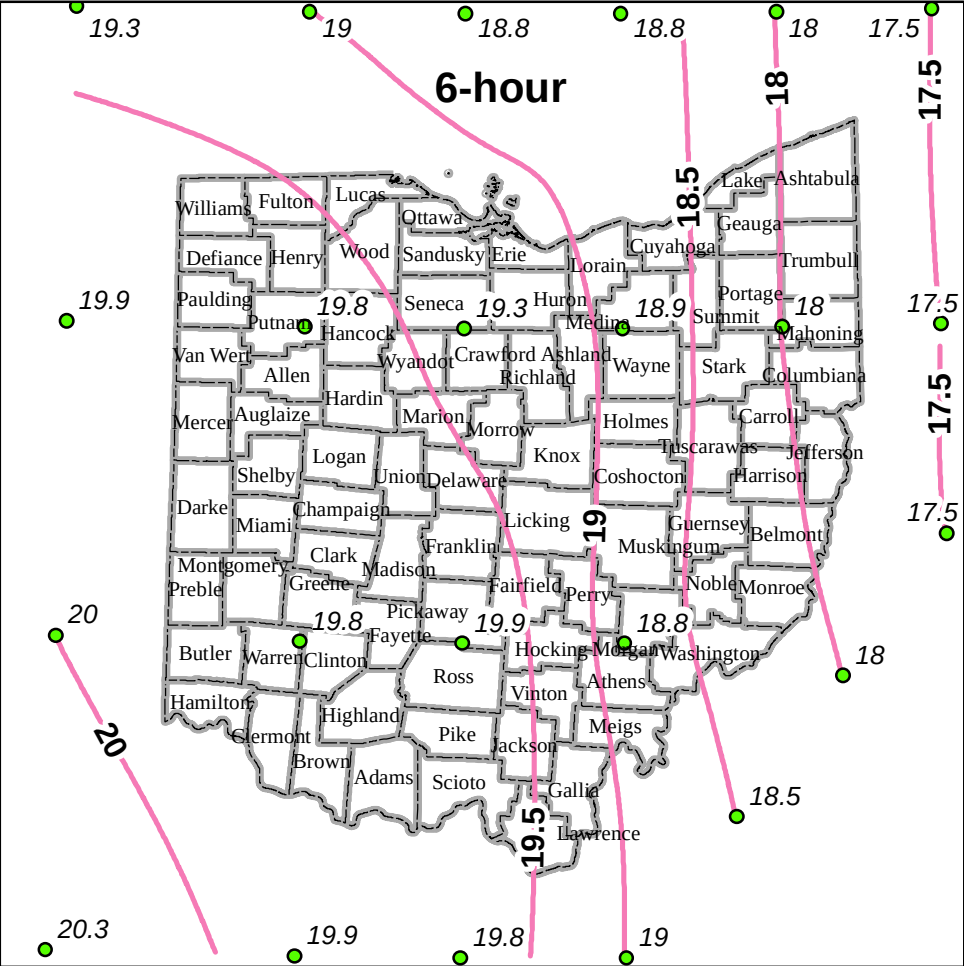
STAGE STORAGE



*Cumulative storage volume accounts for volume of fly ash in the FAR and storage available above the 1973 surface to an elevation equal to the top of the FAR closure cap and within the plan-view footprint of the FAR closure cap upstream of the FAD.

ATTACHMENT C

PRECIPITATION DATA

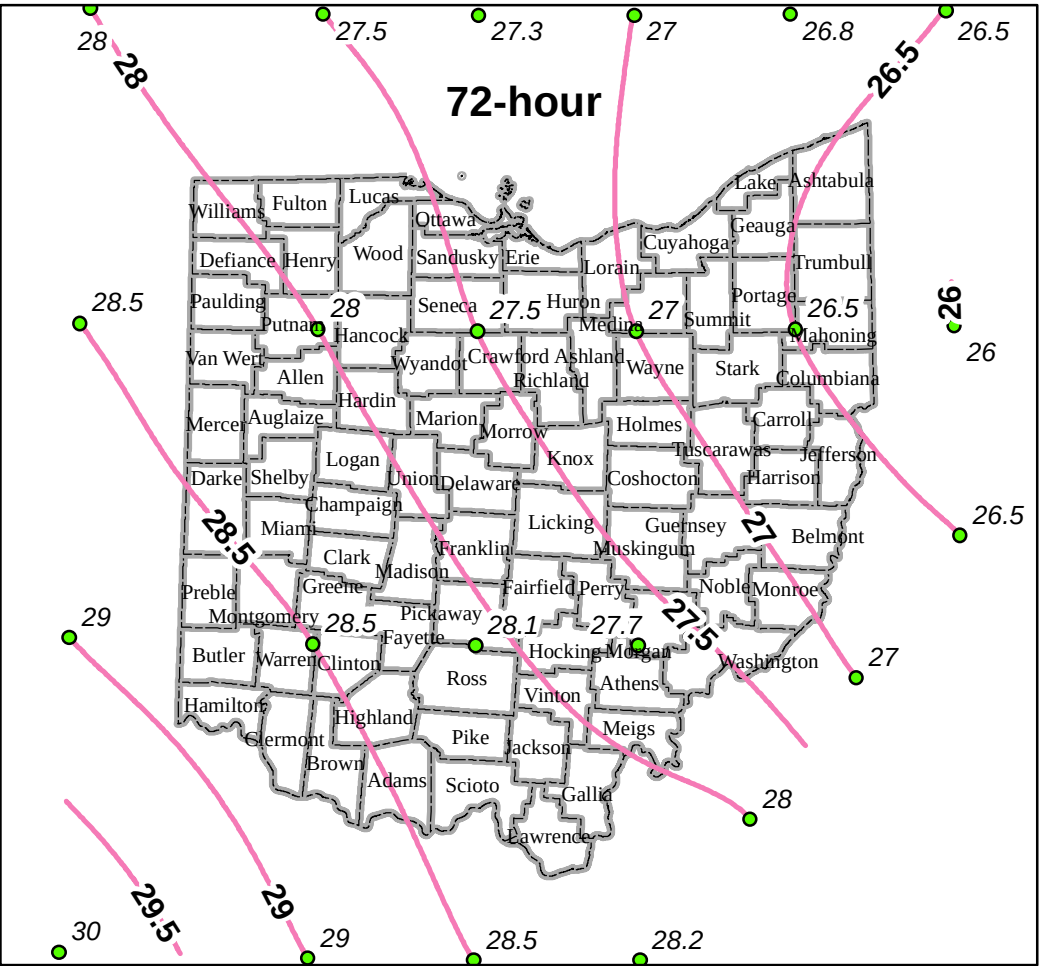
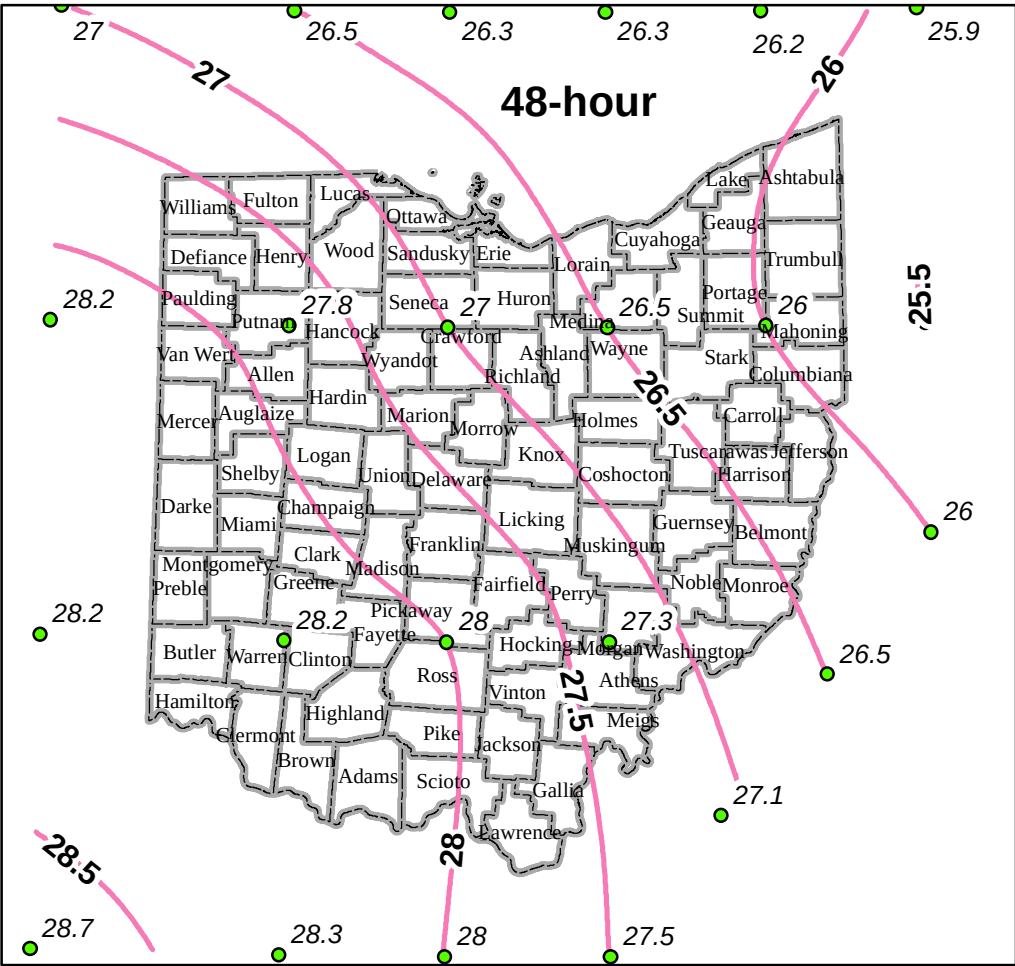
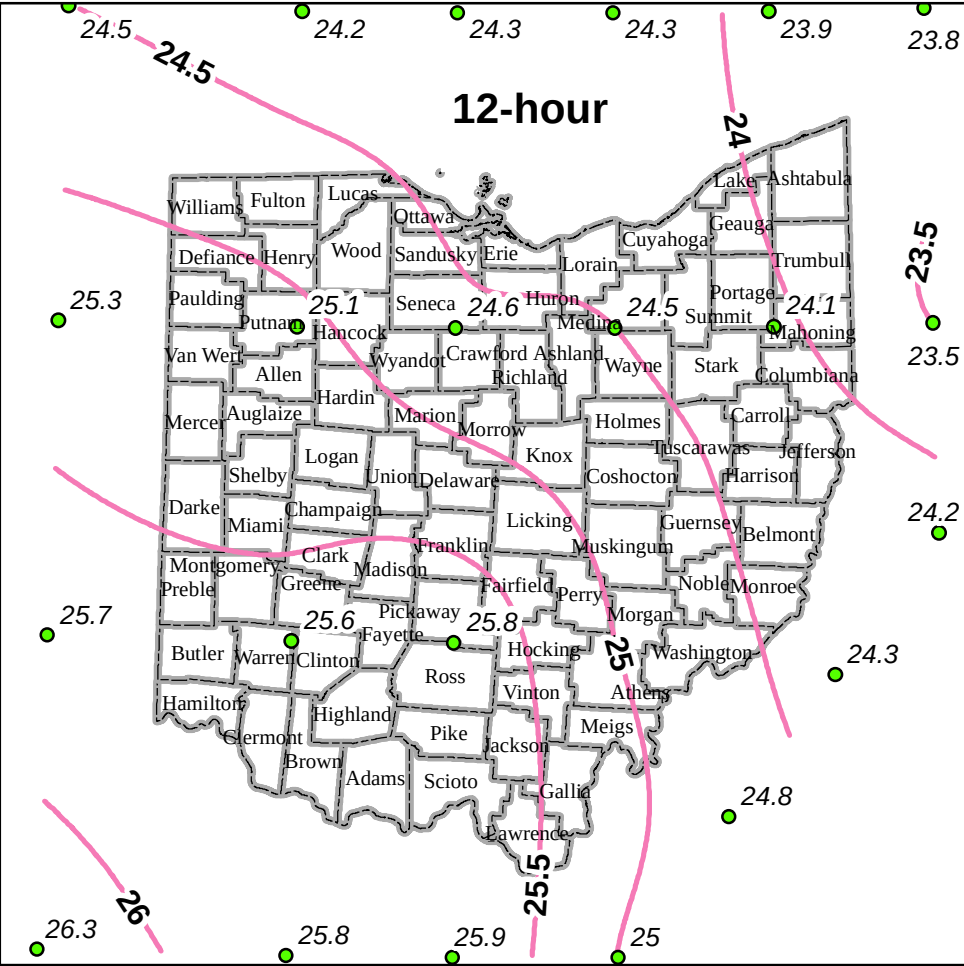


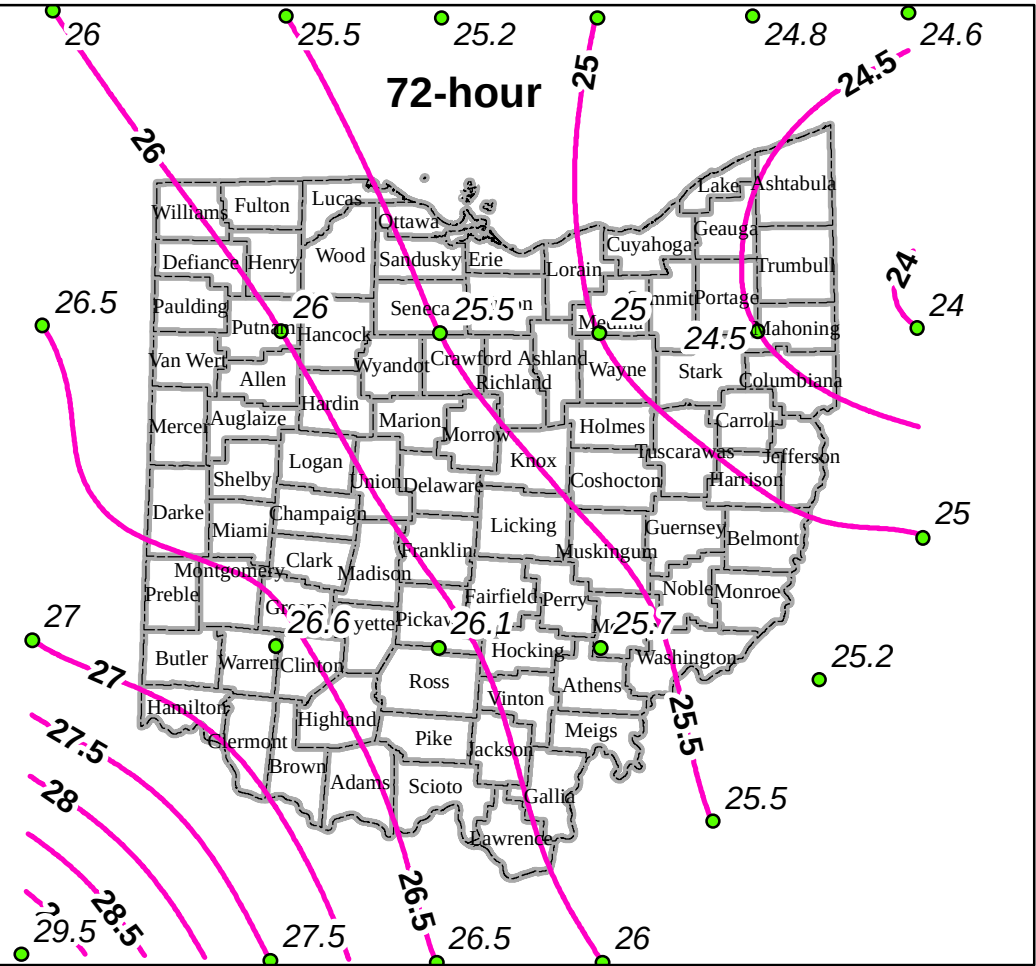
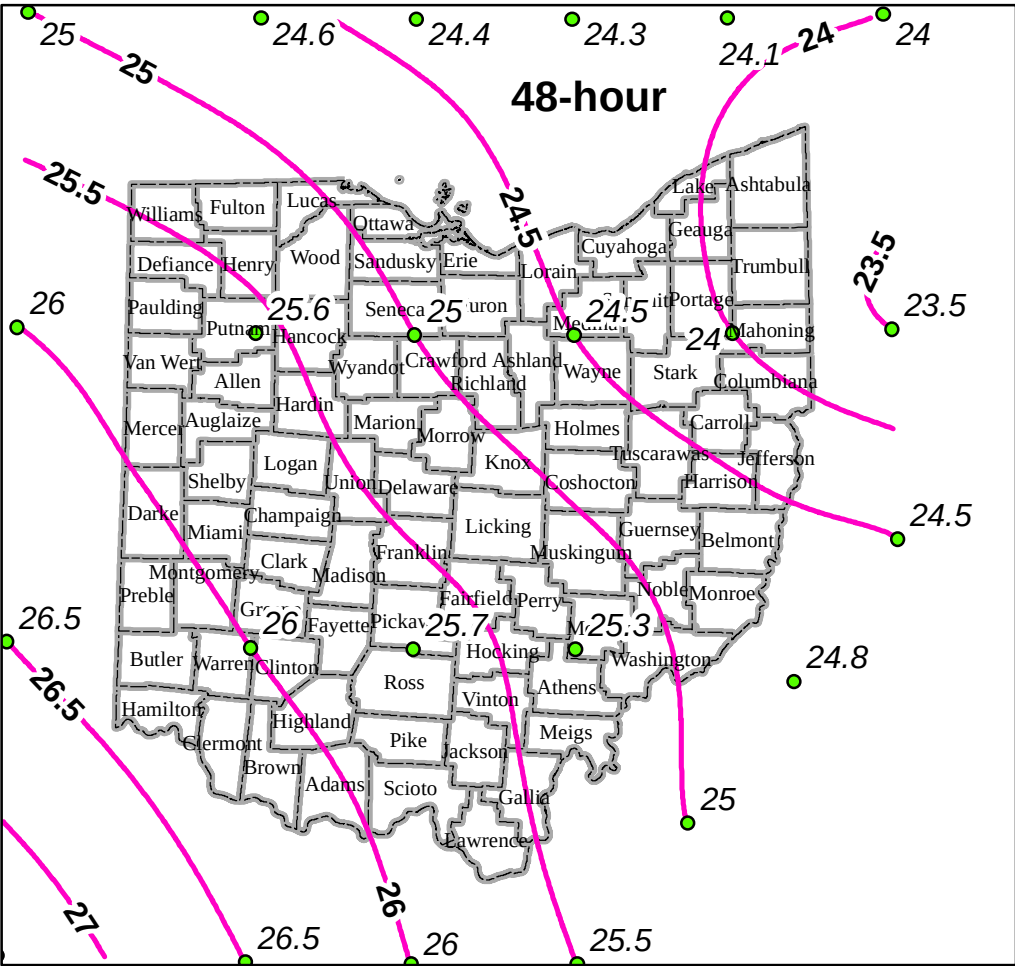
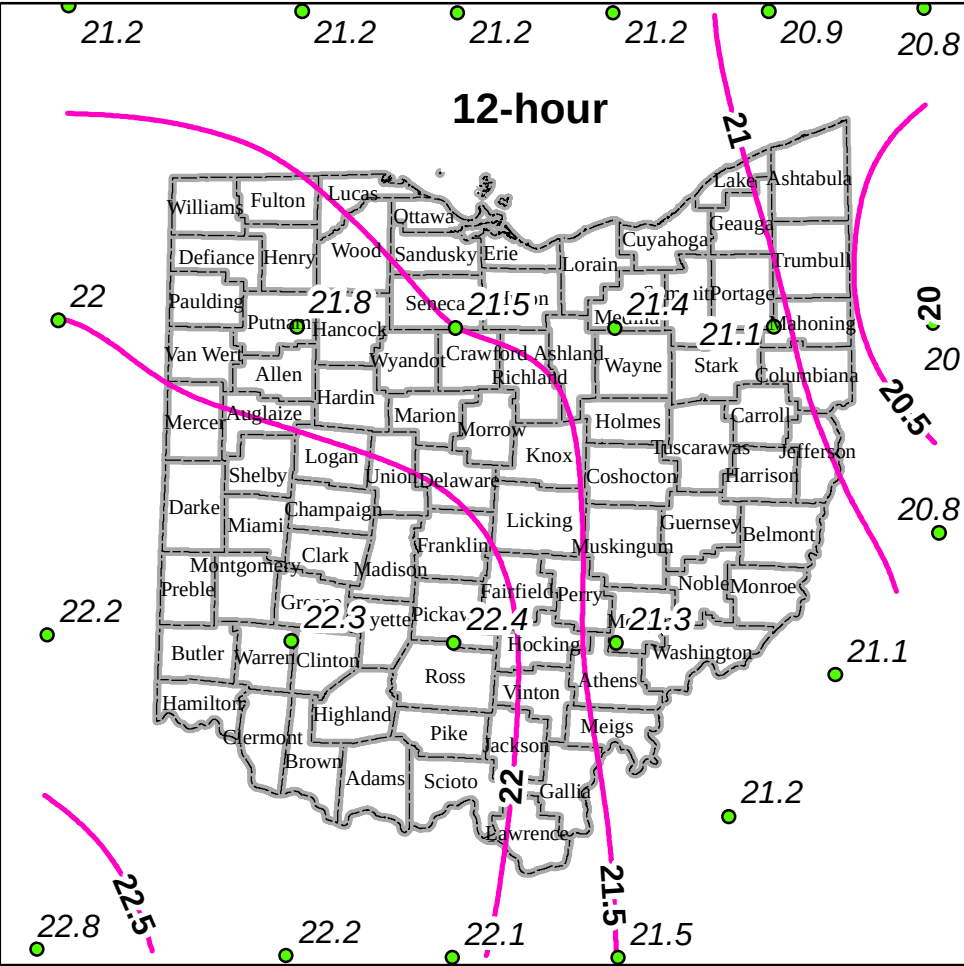
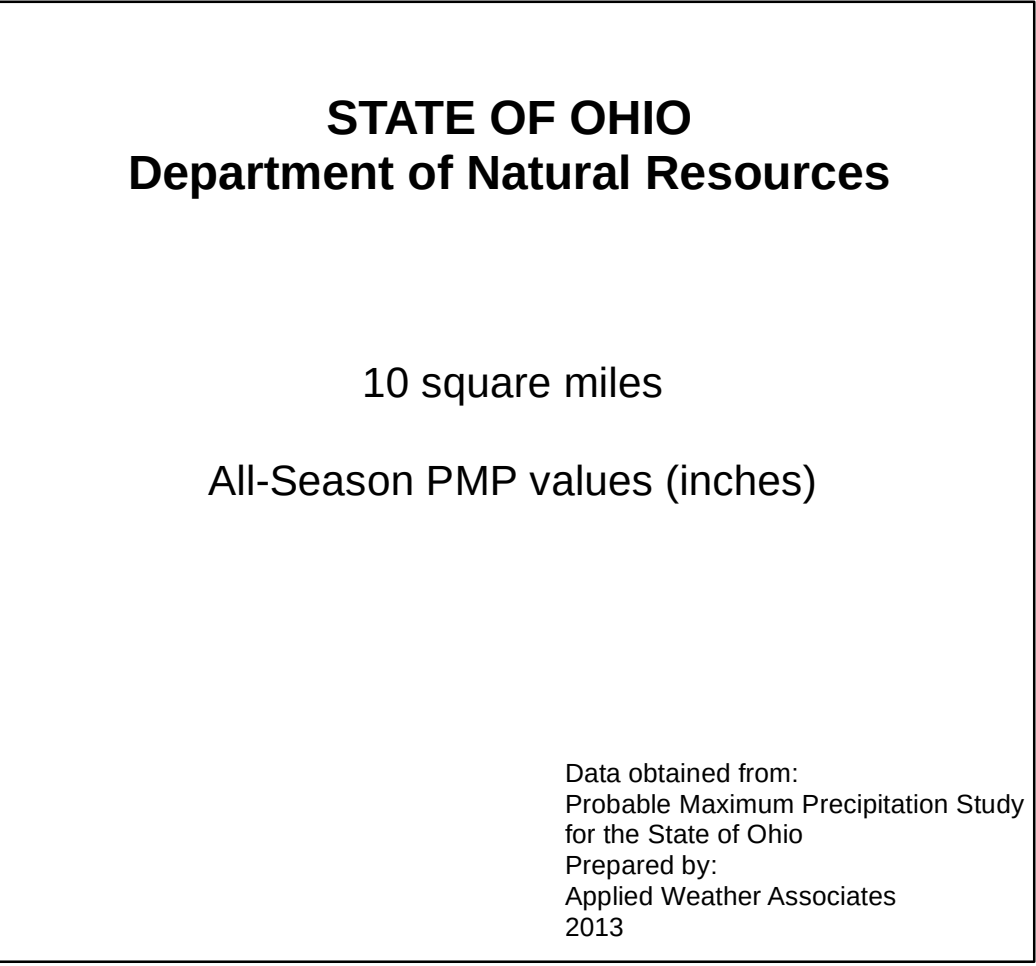
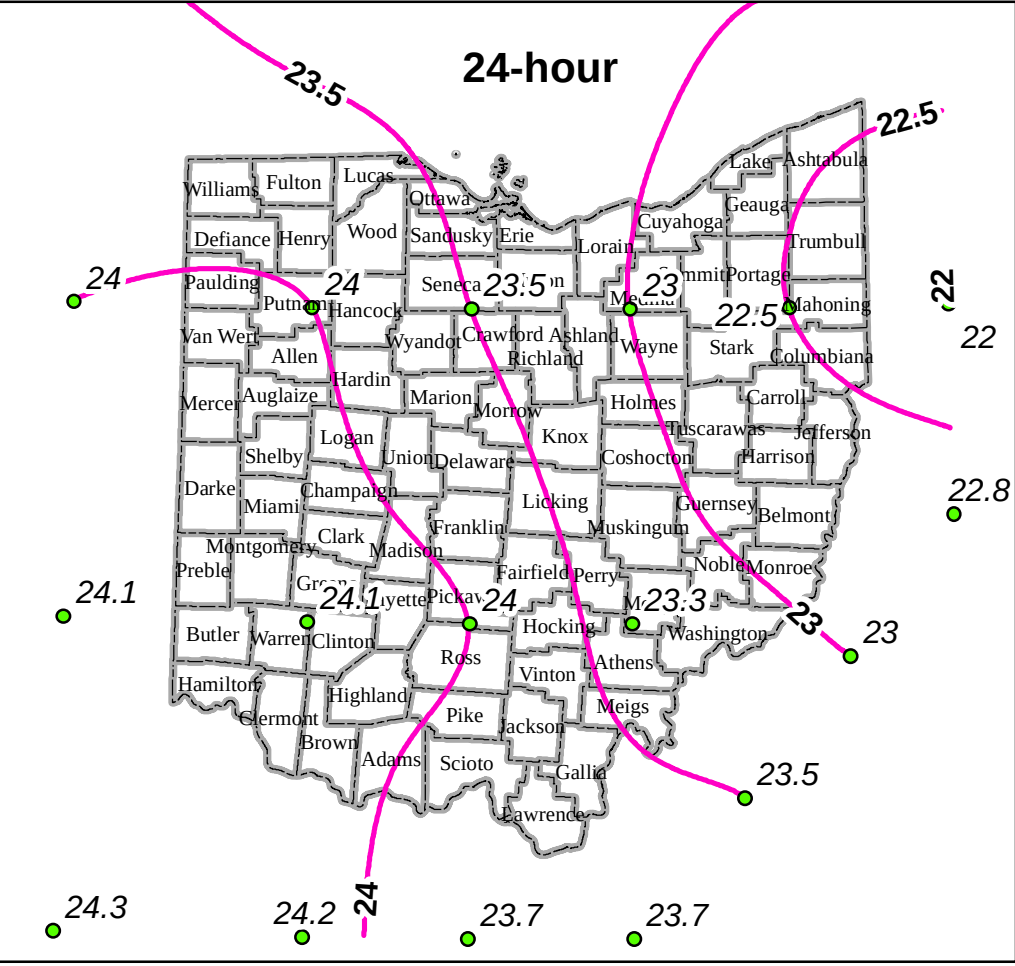
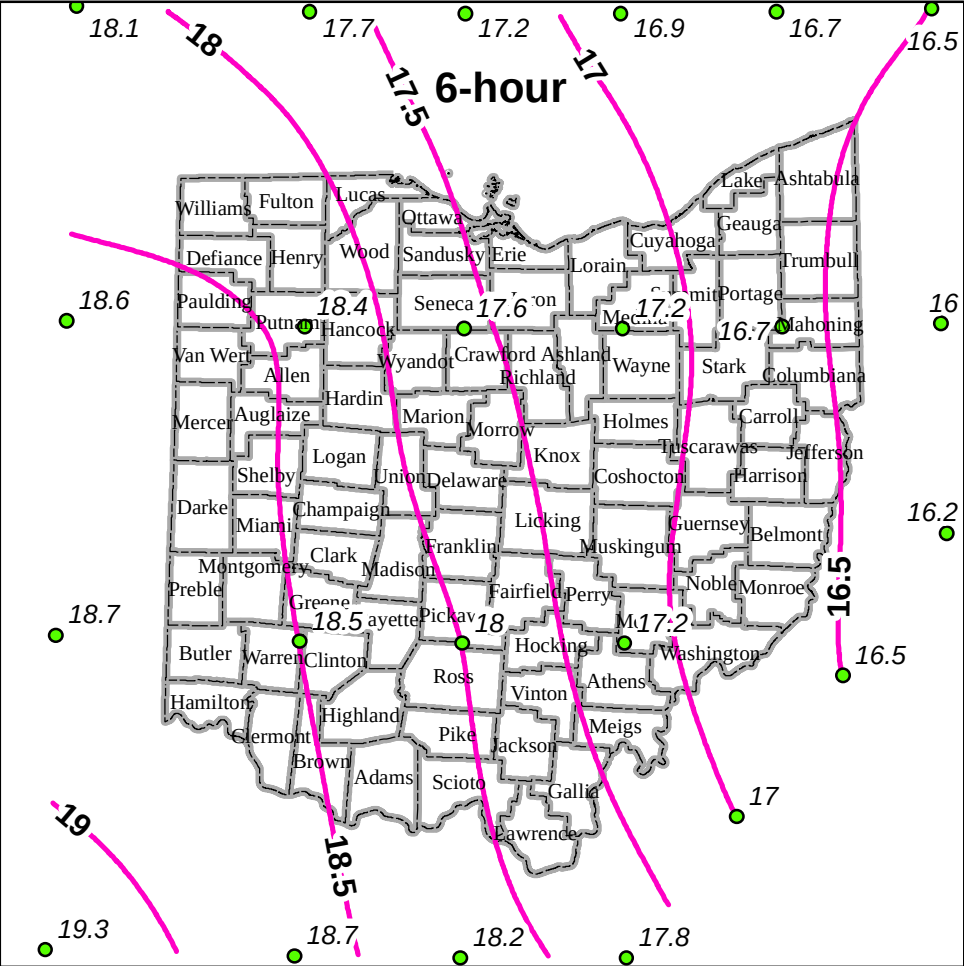
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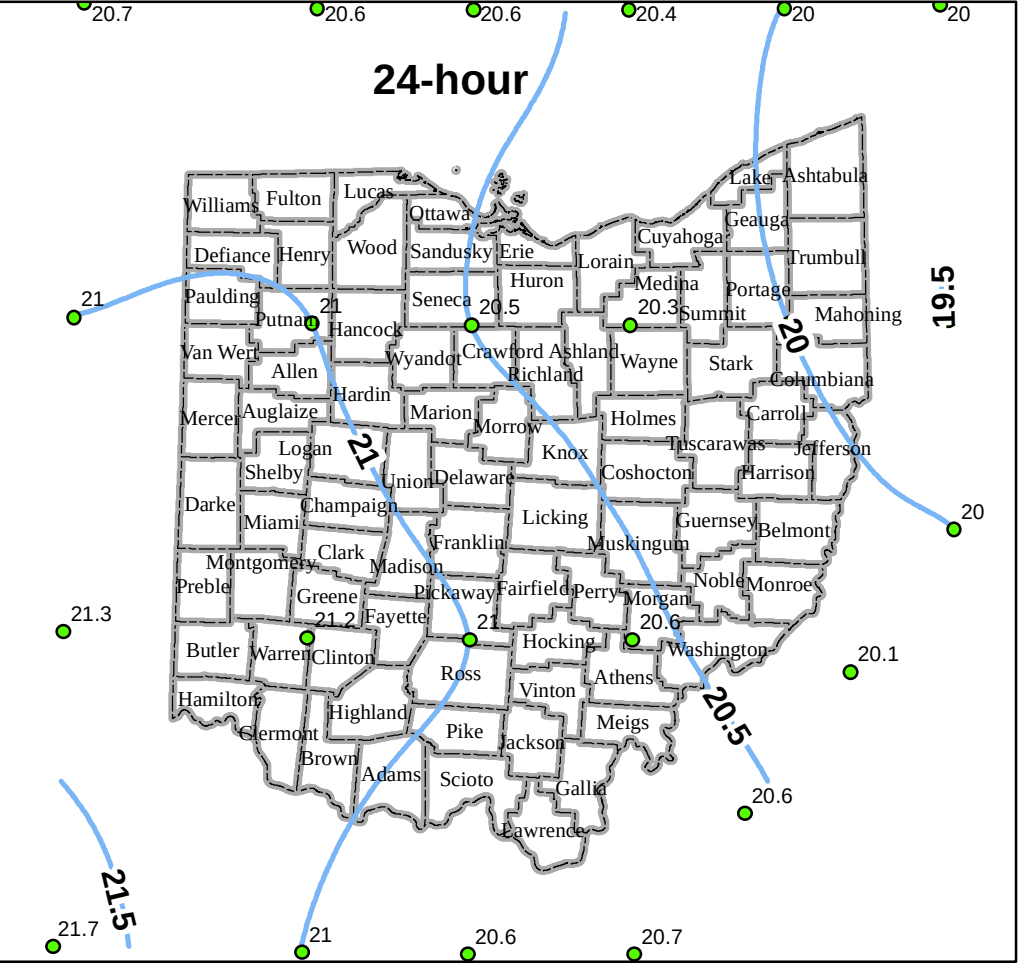
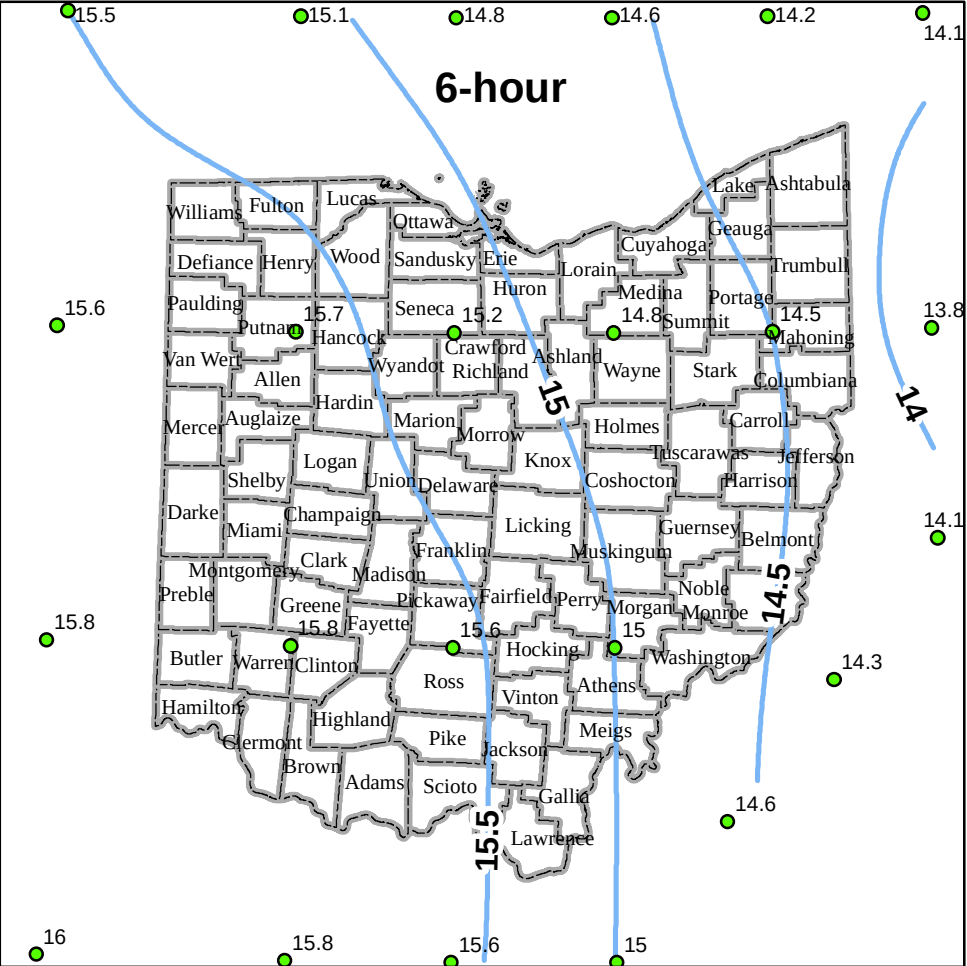
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All-Season PMP values (inches)

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Prepared by:
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2013





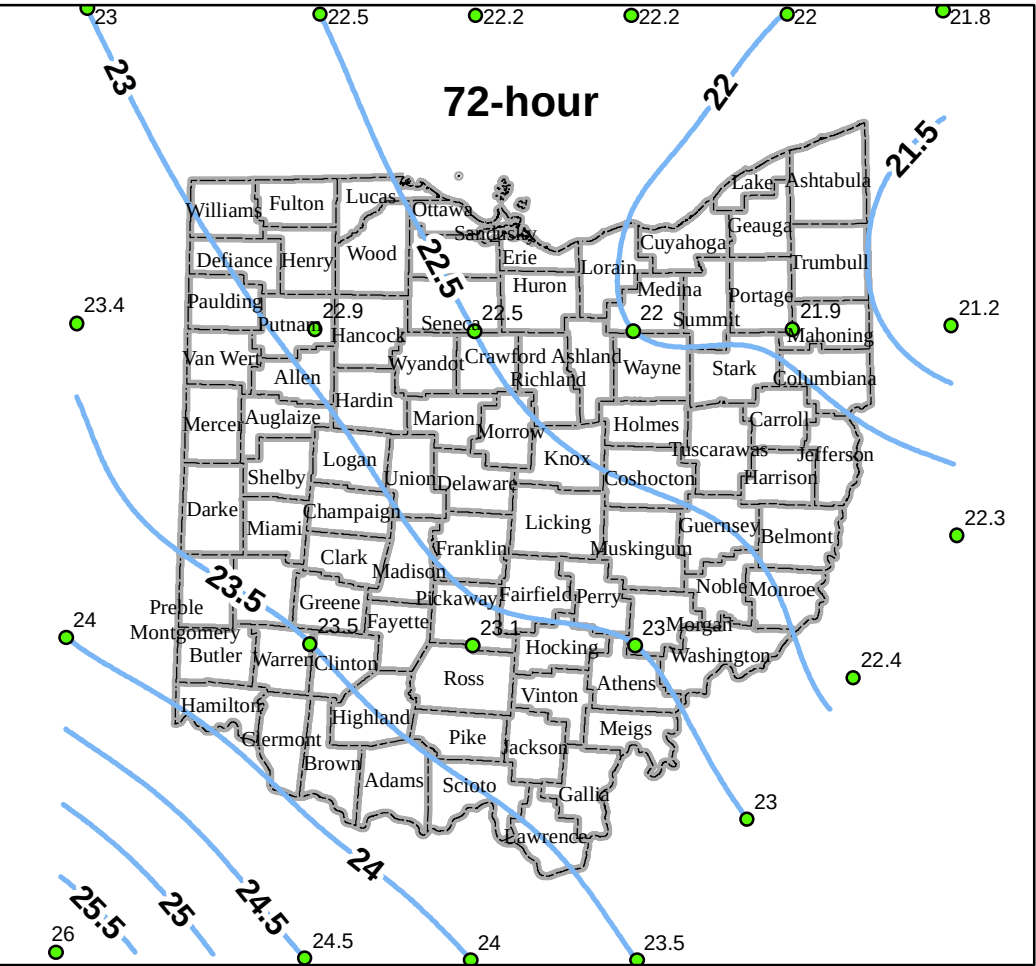
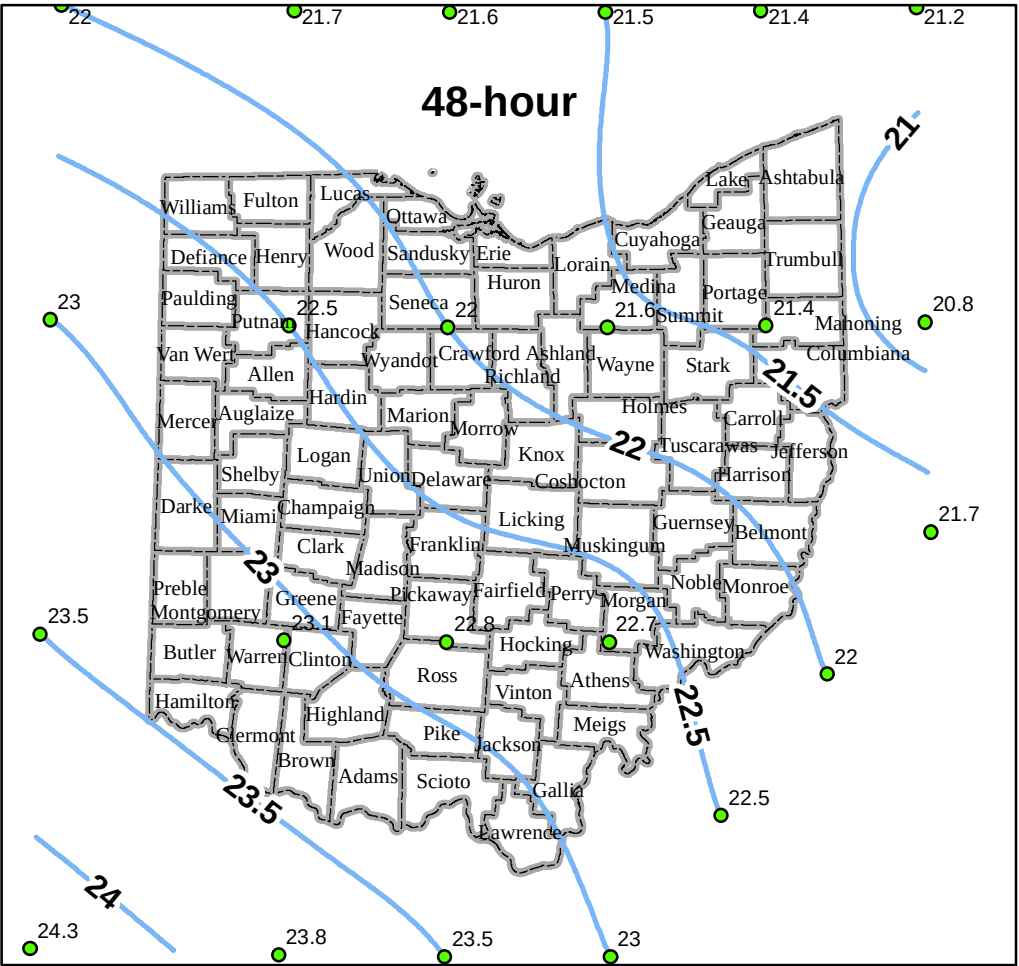
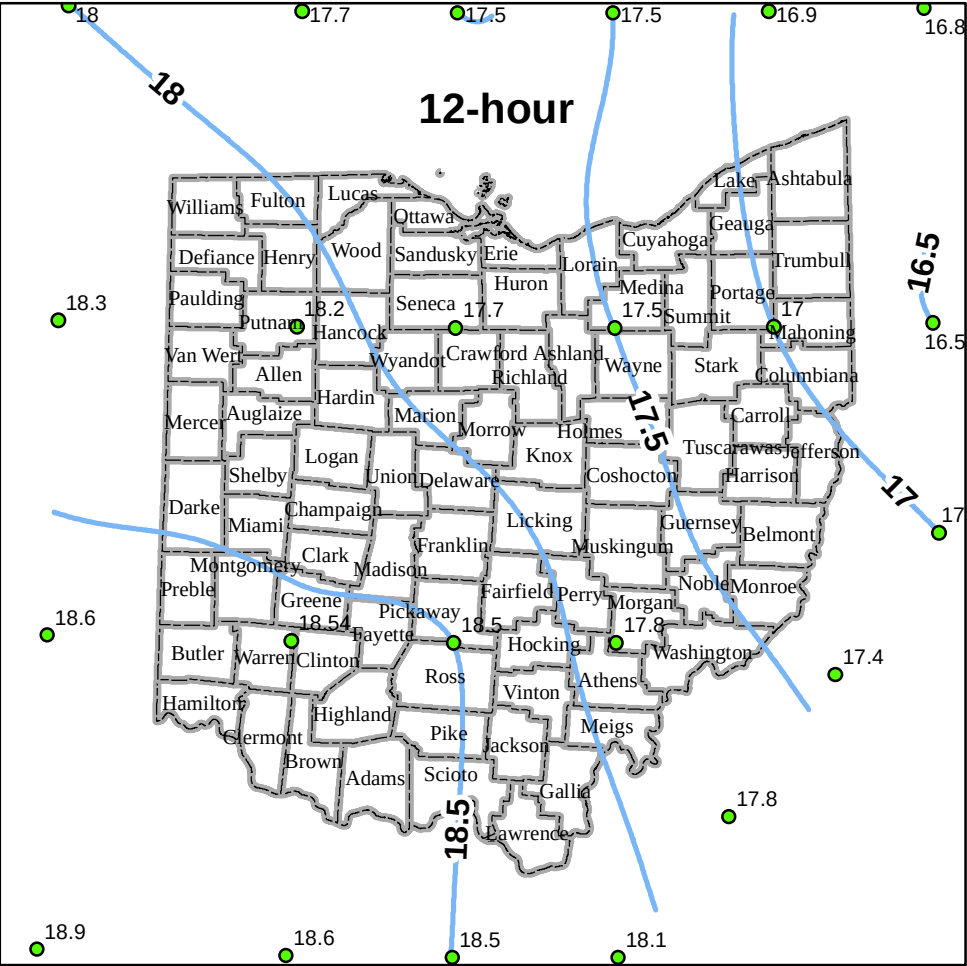


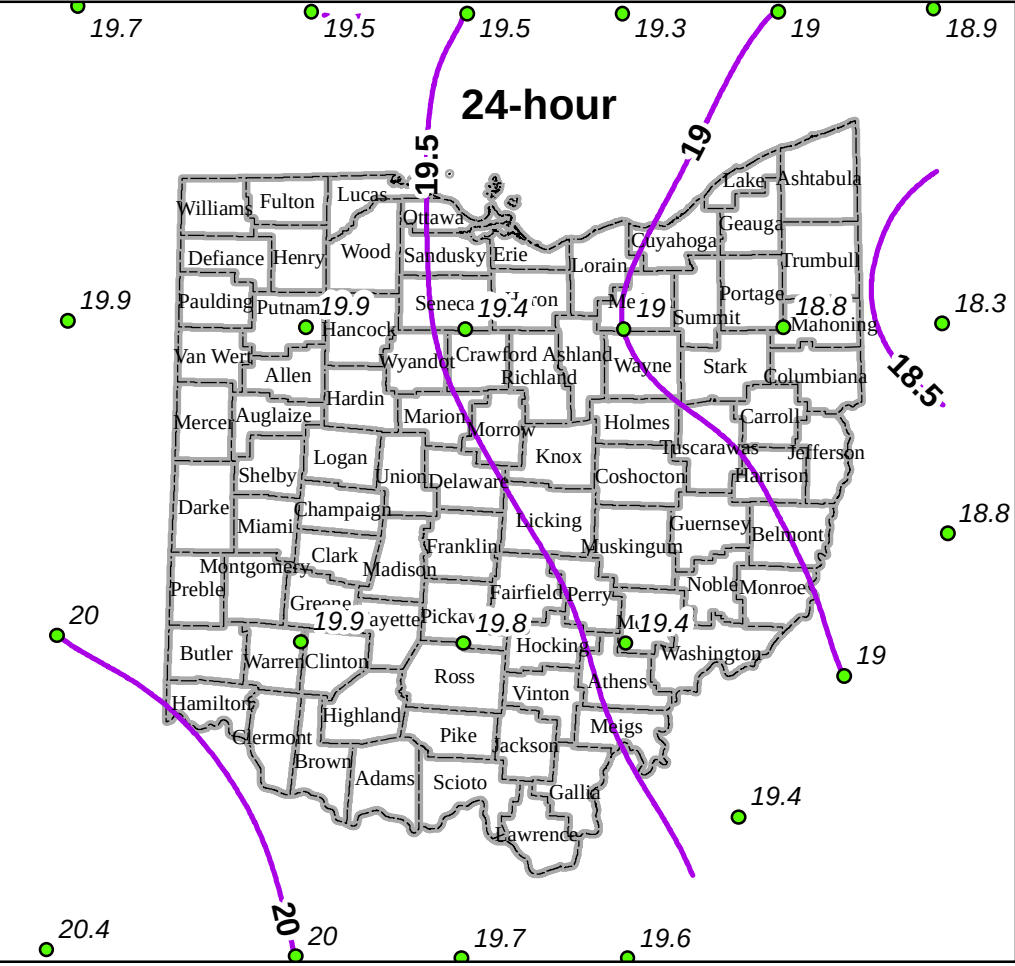
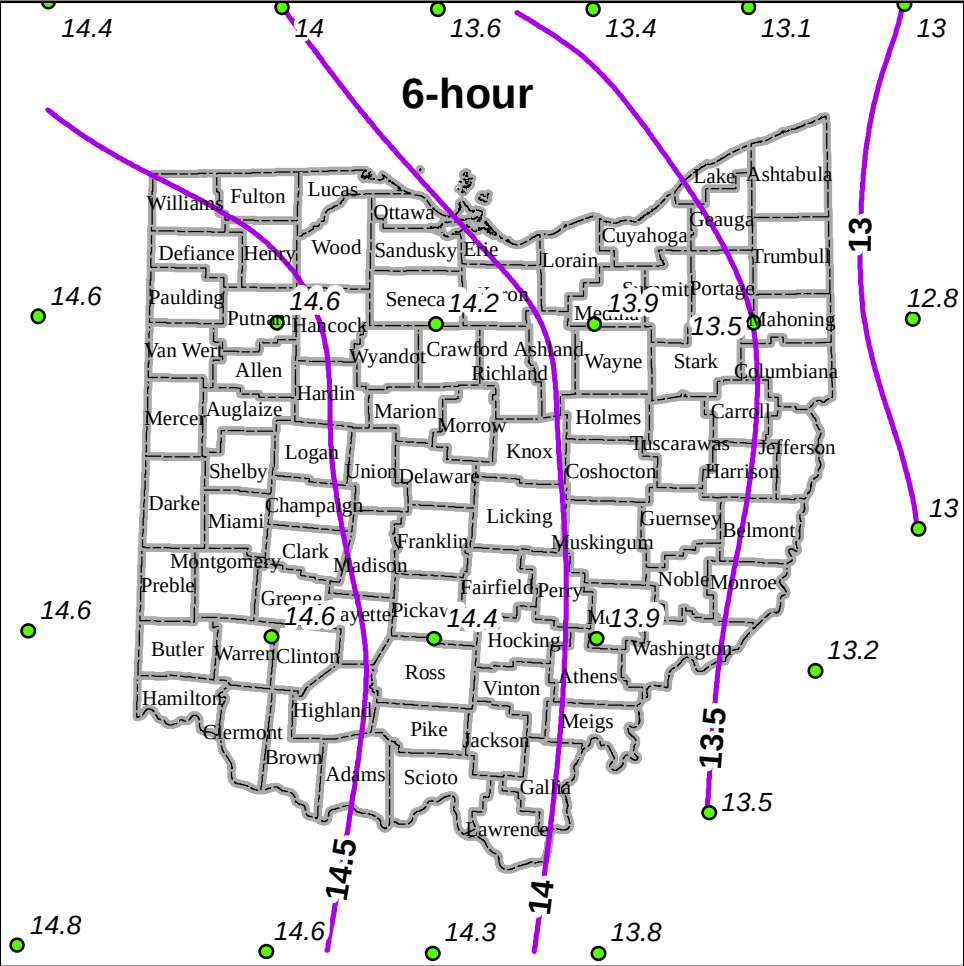
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Department of Natural Resources

100 square miles

All-Season PMP values (inches)

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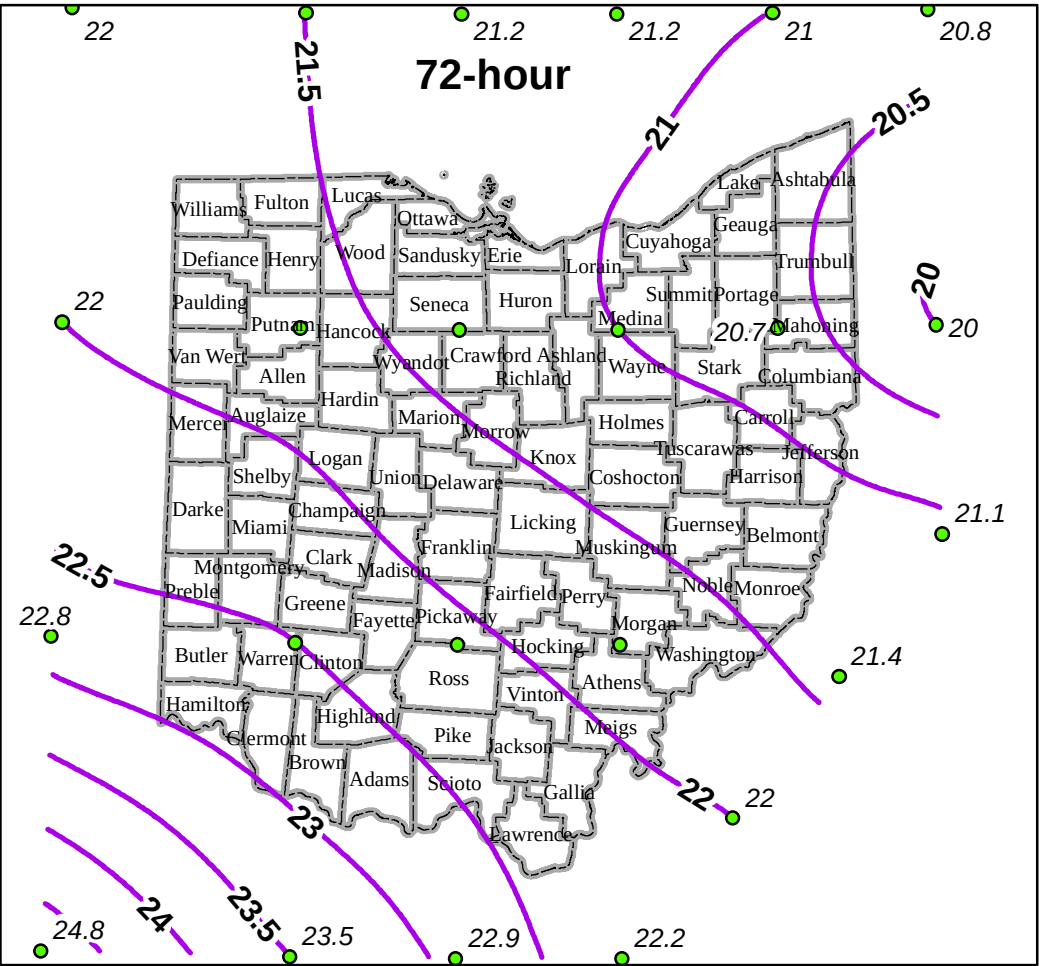
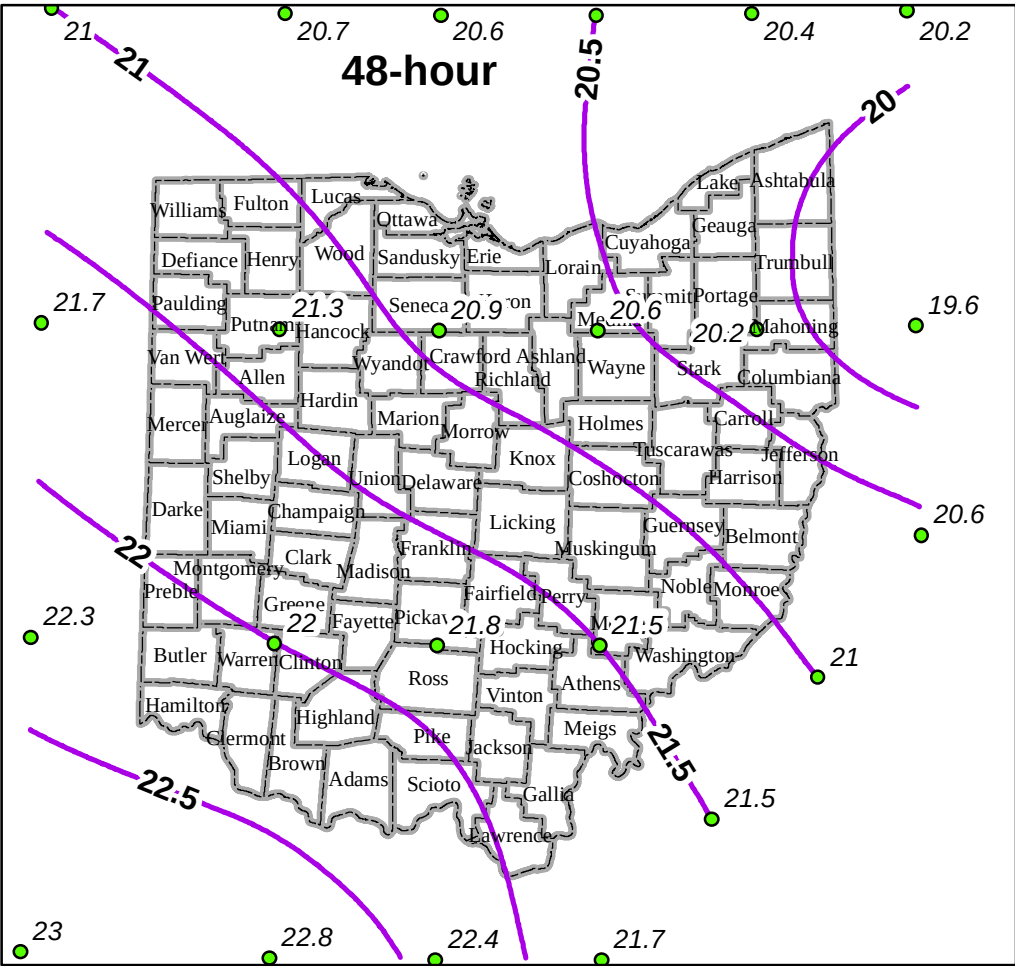
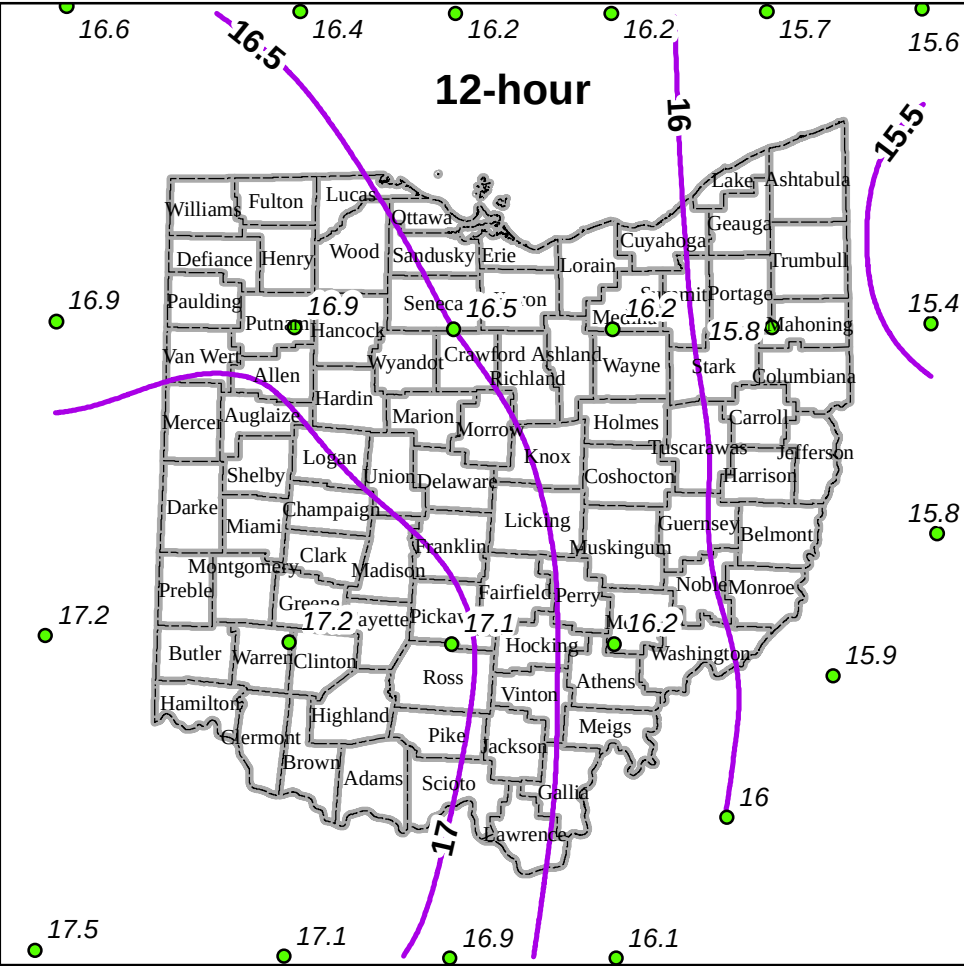


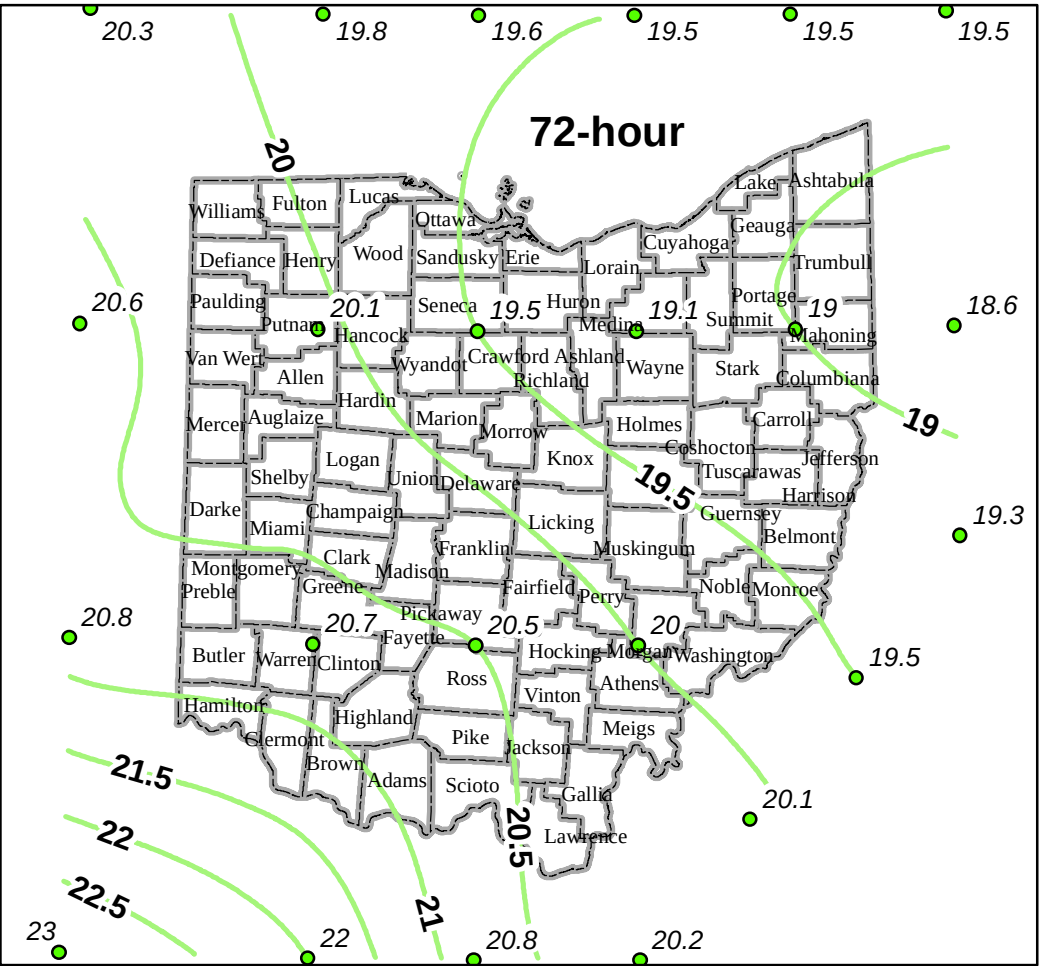
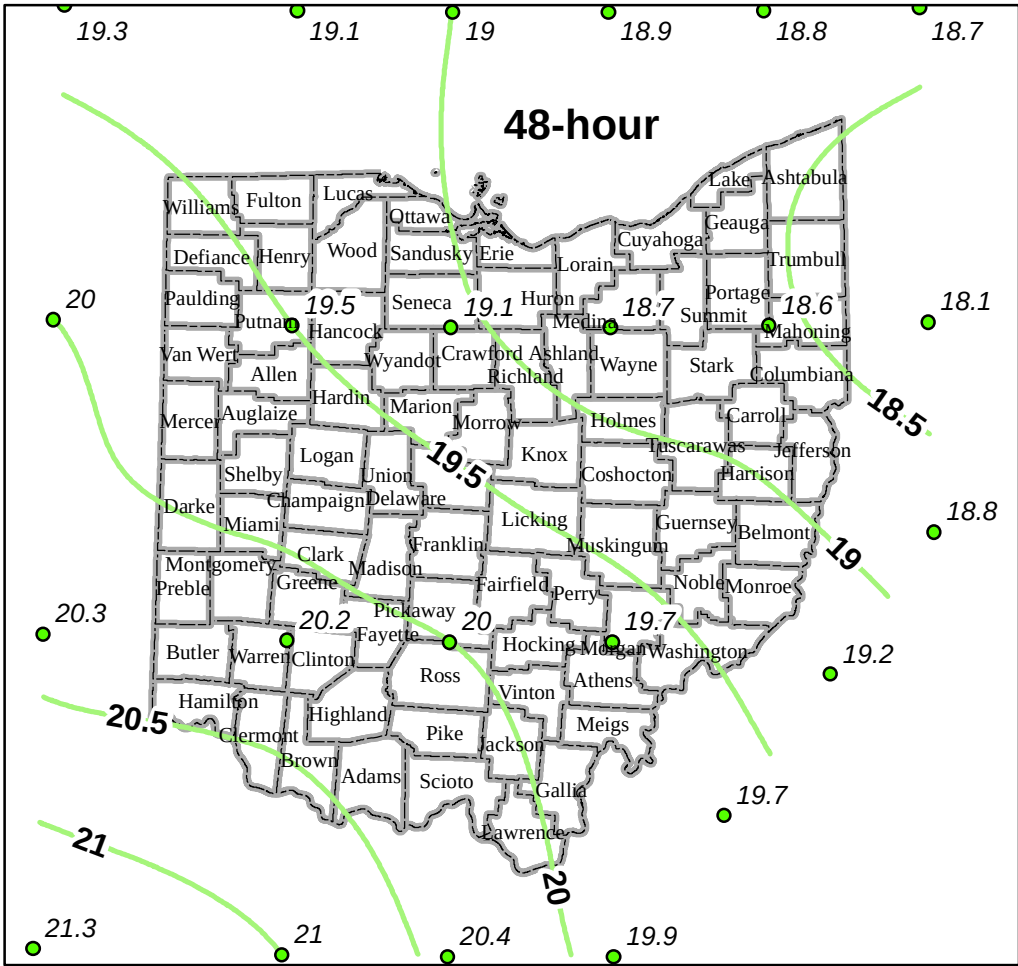
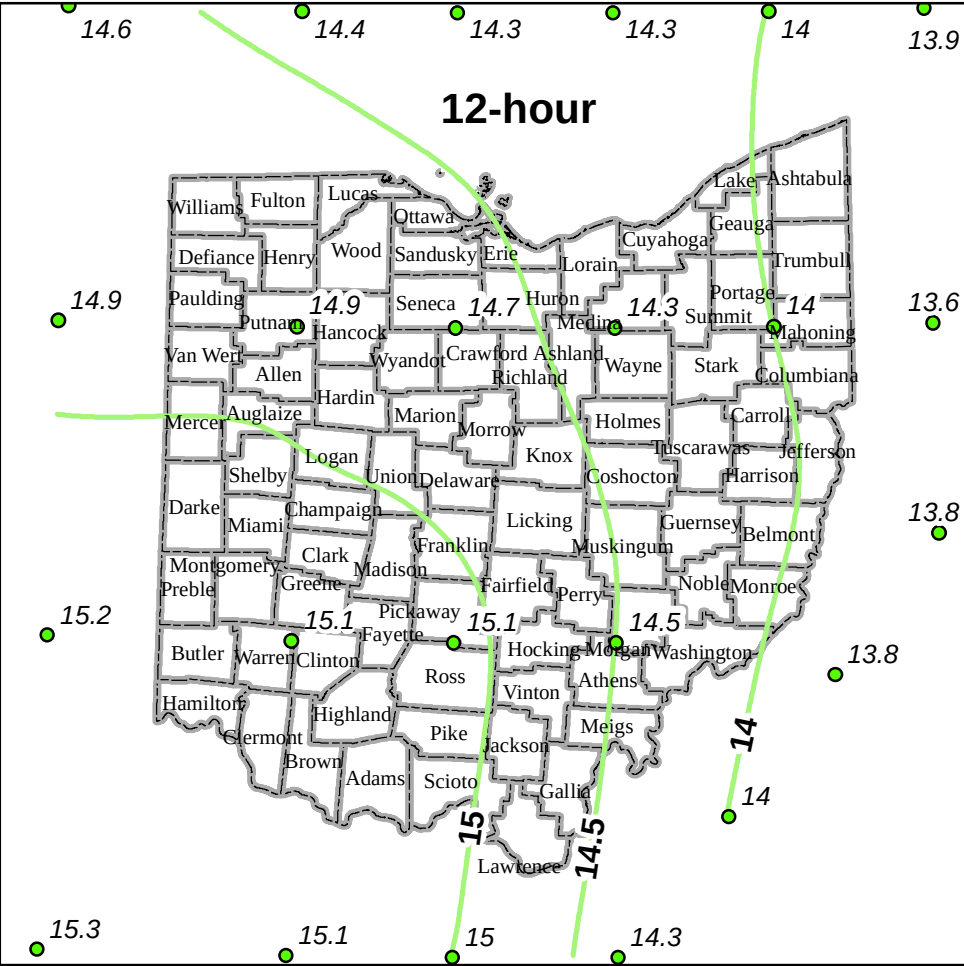
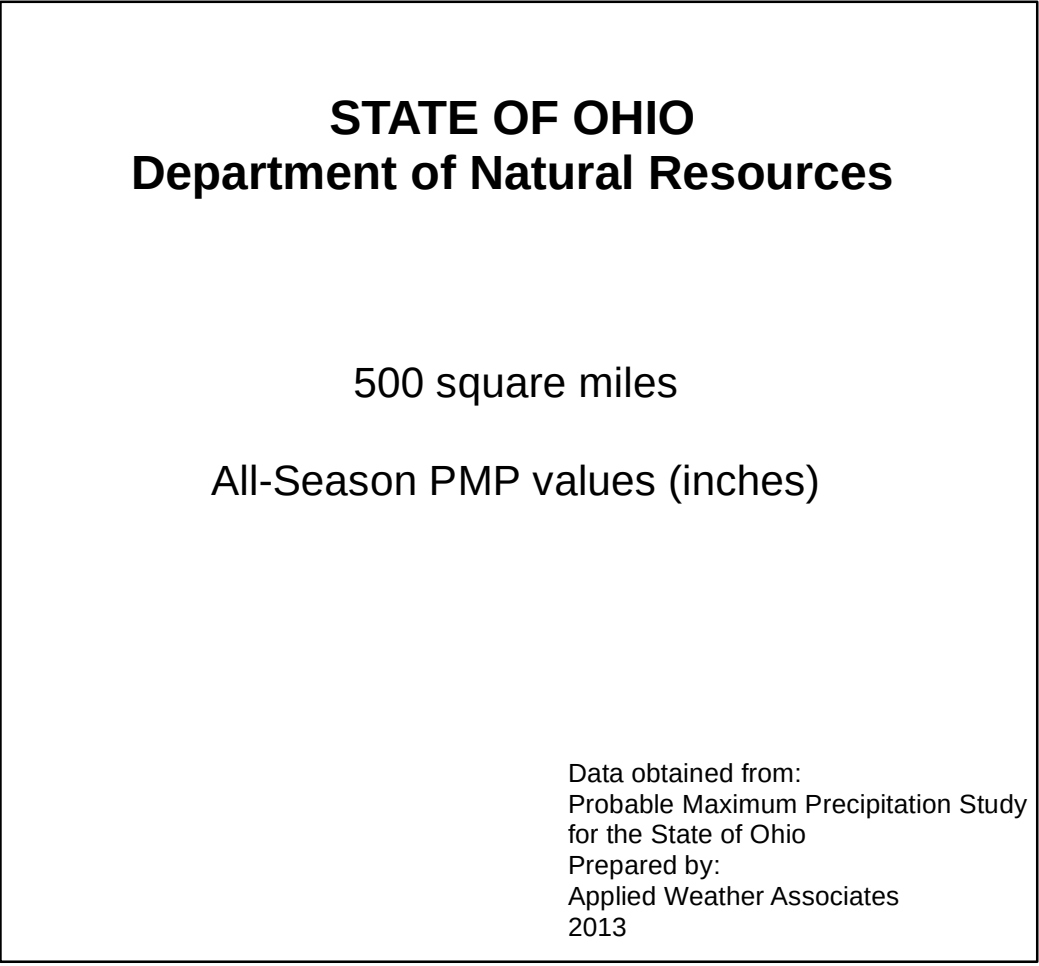
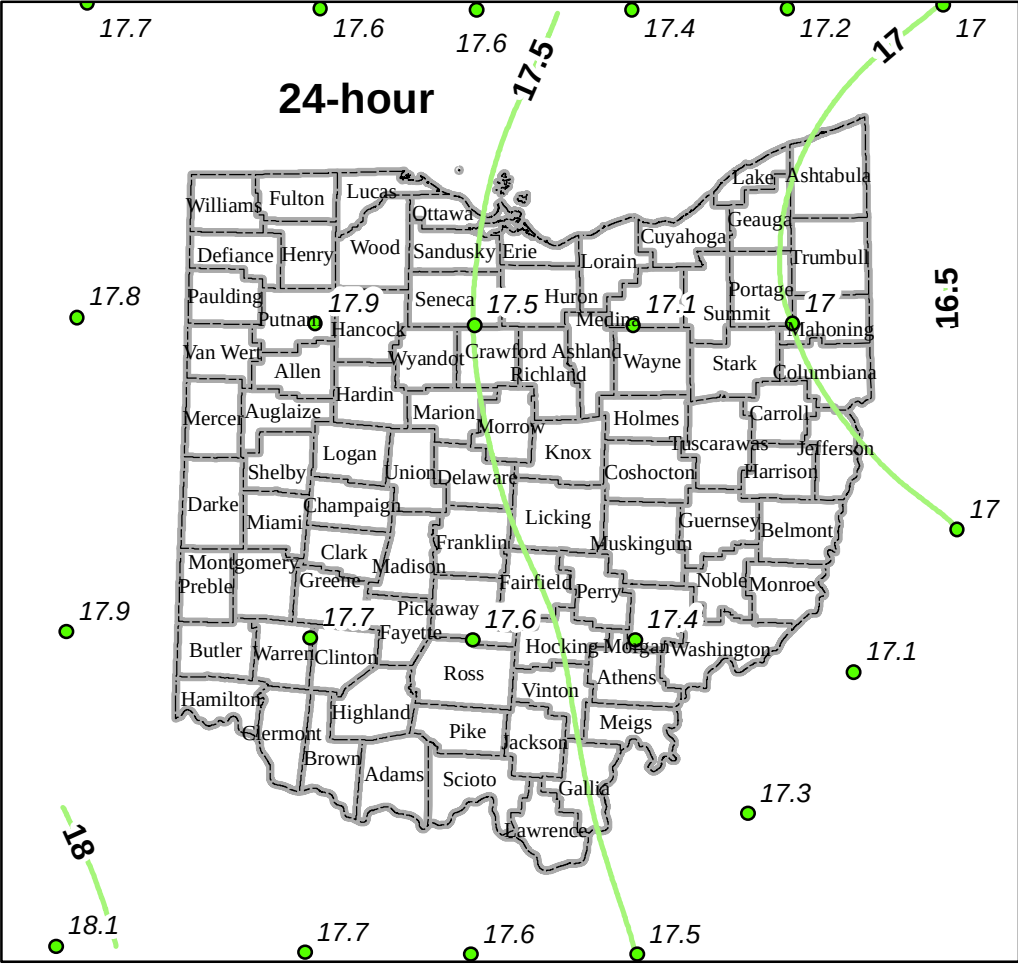
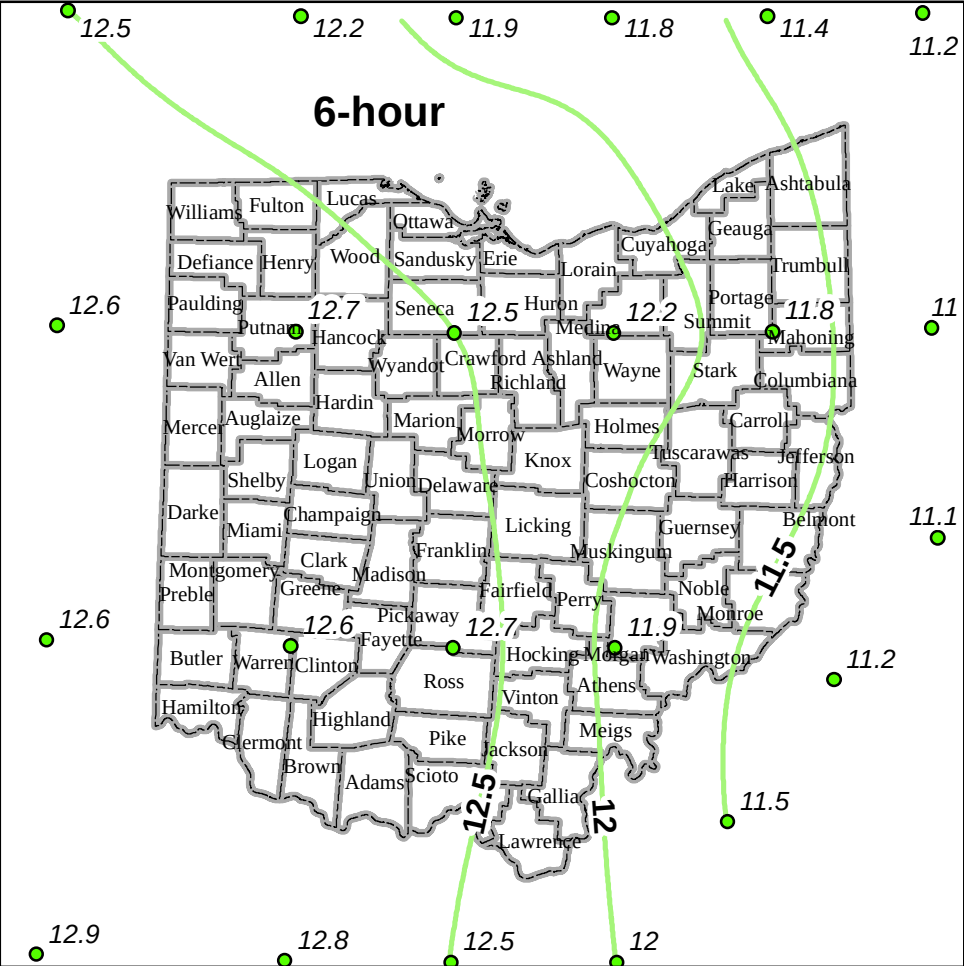
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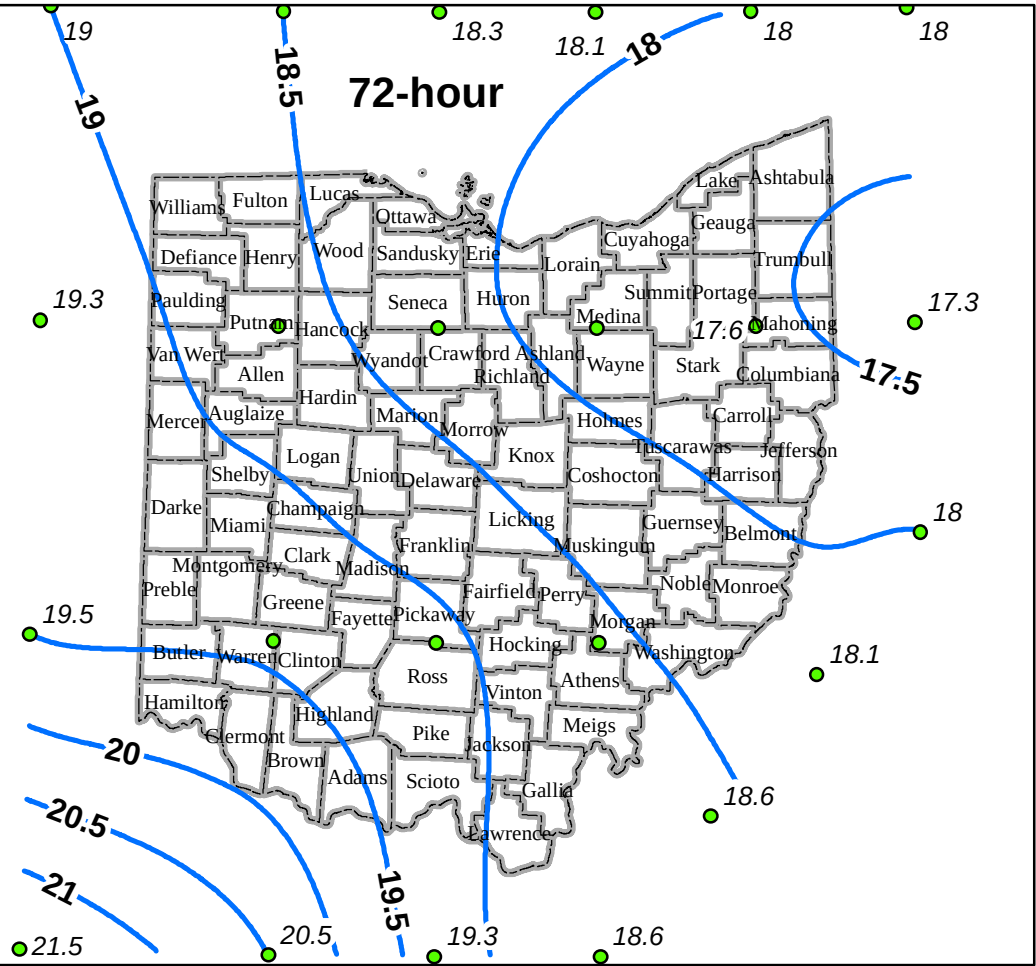
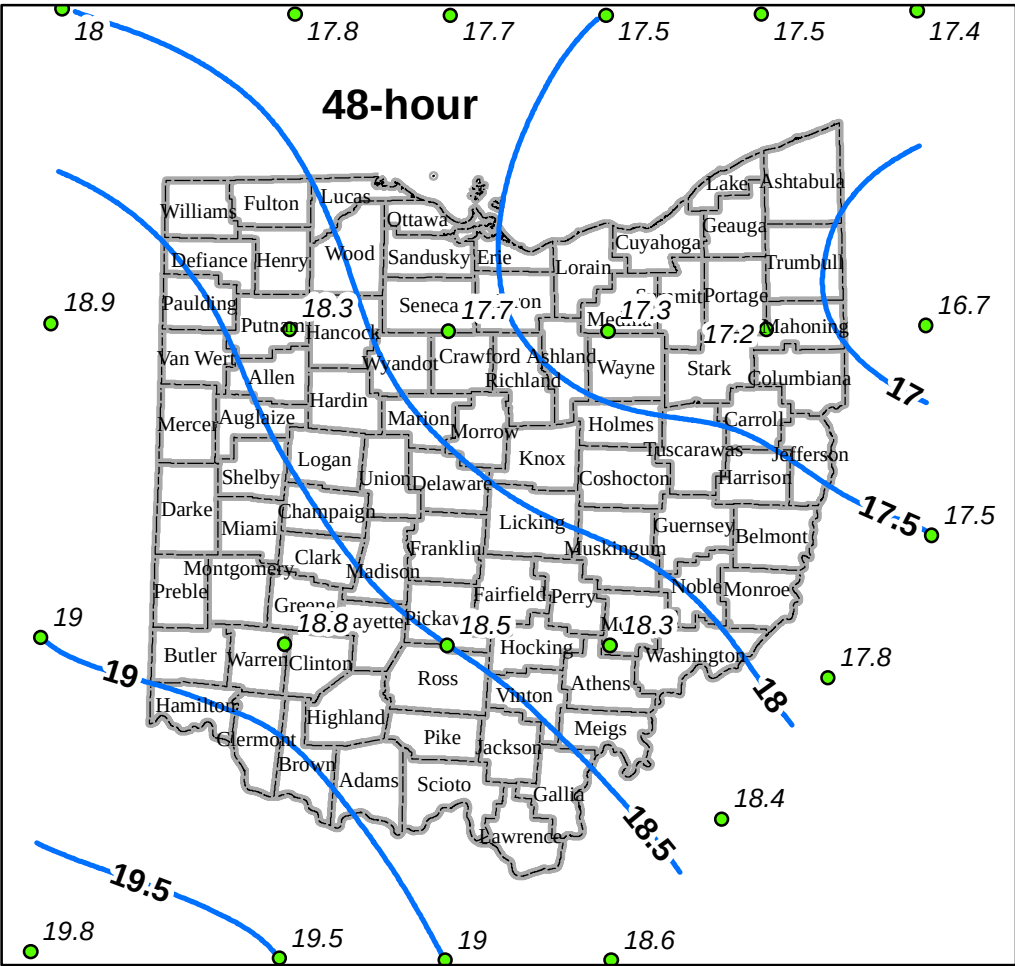
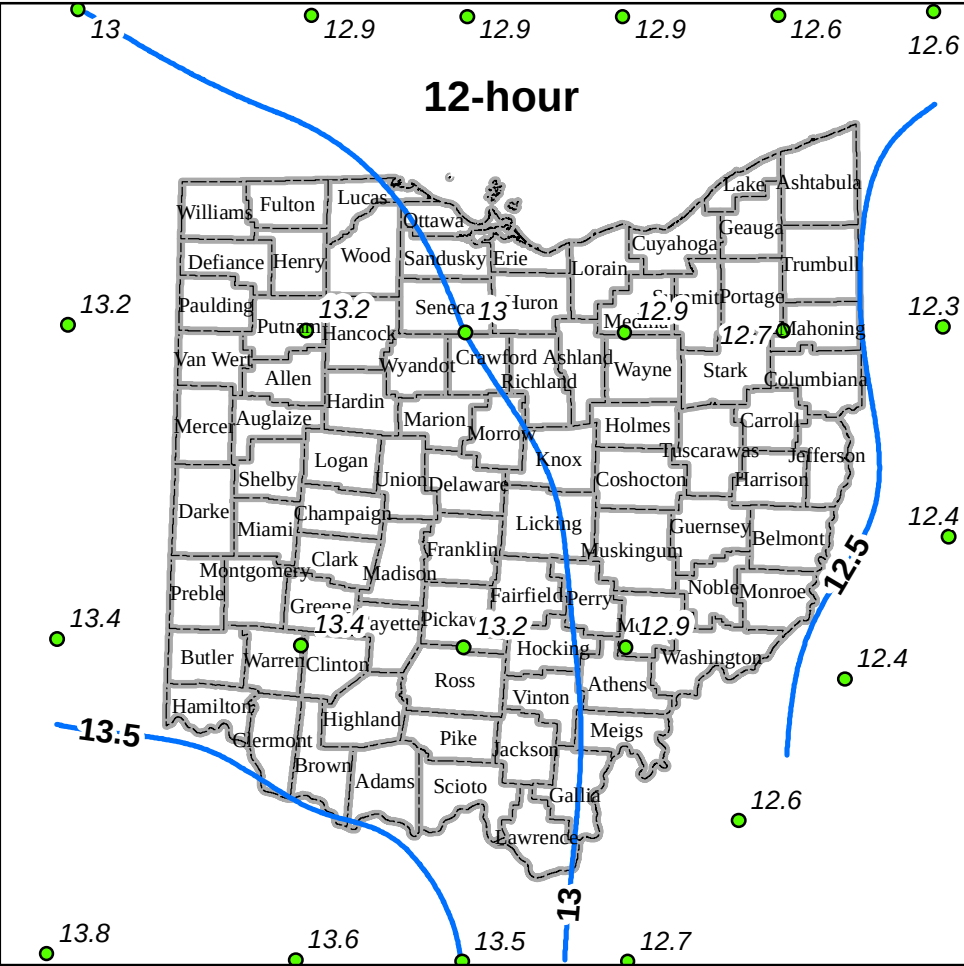
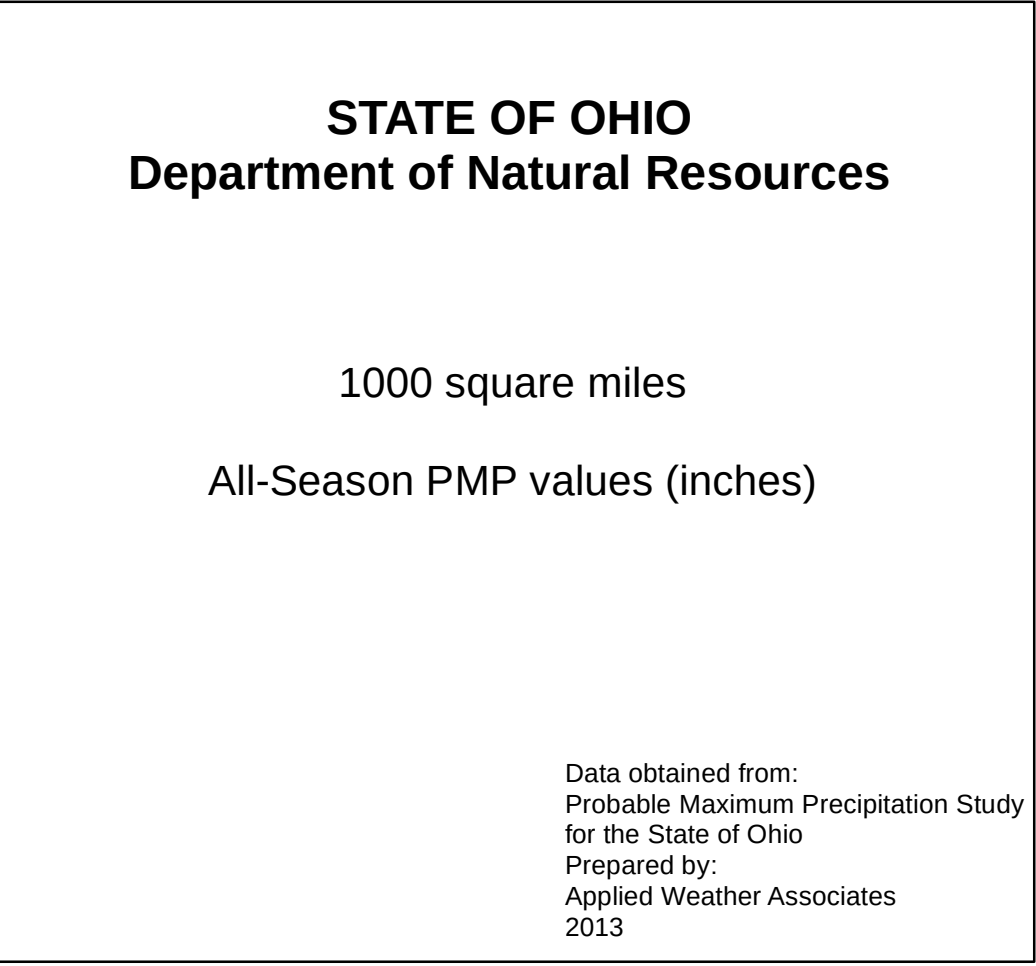
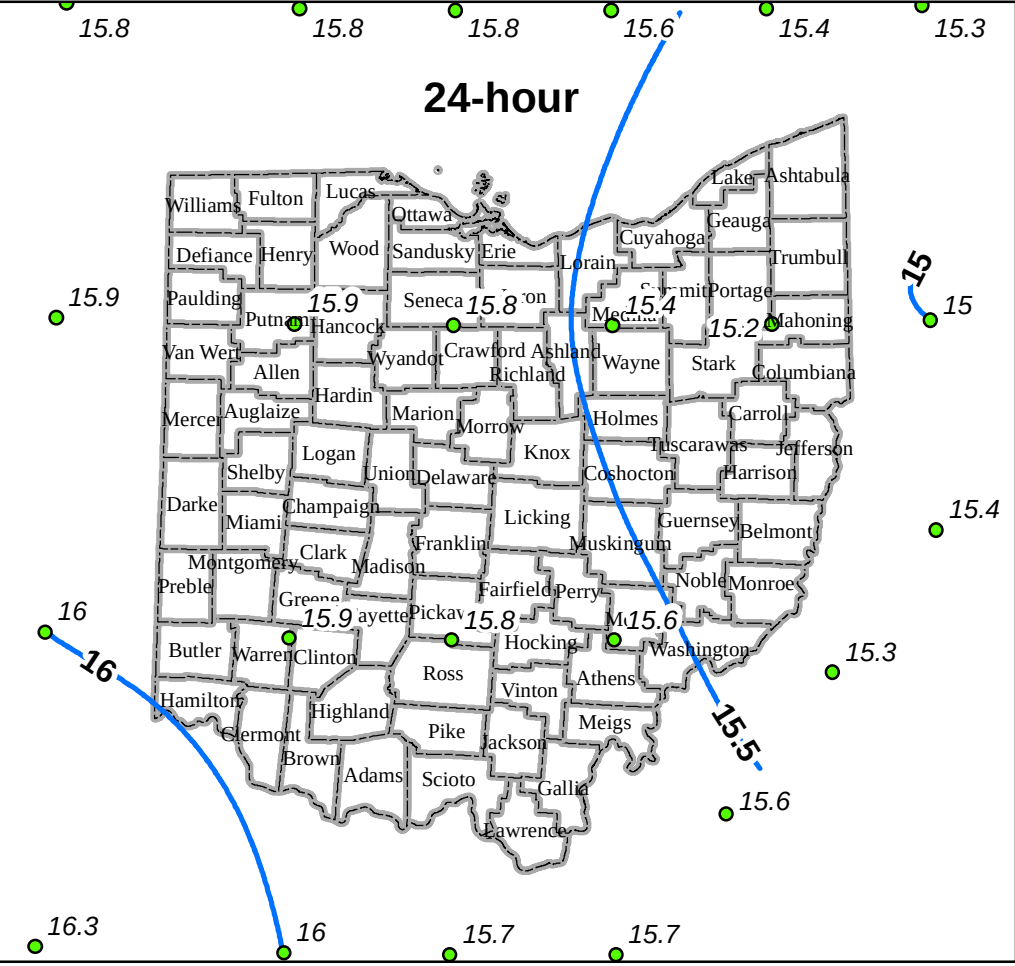
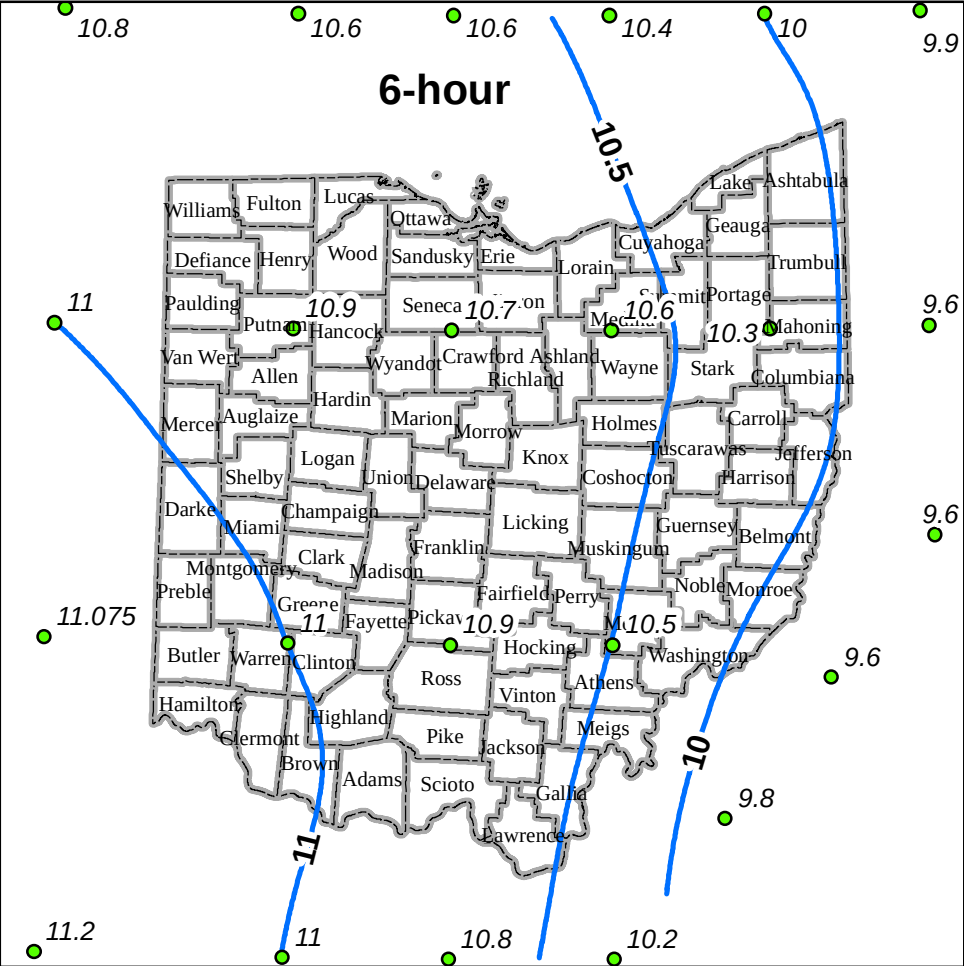
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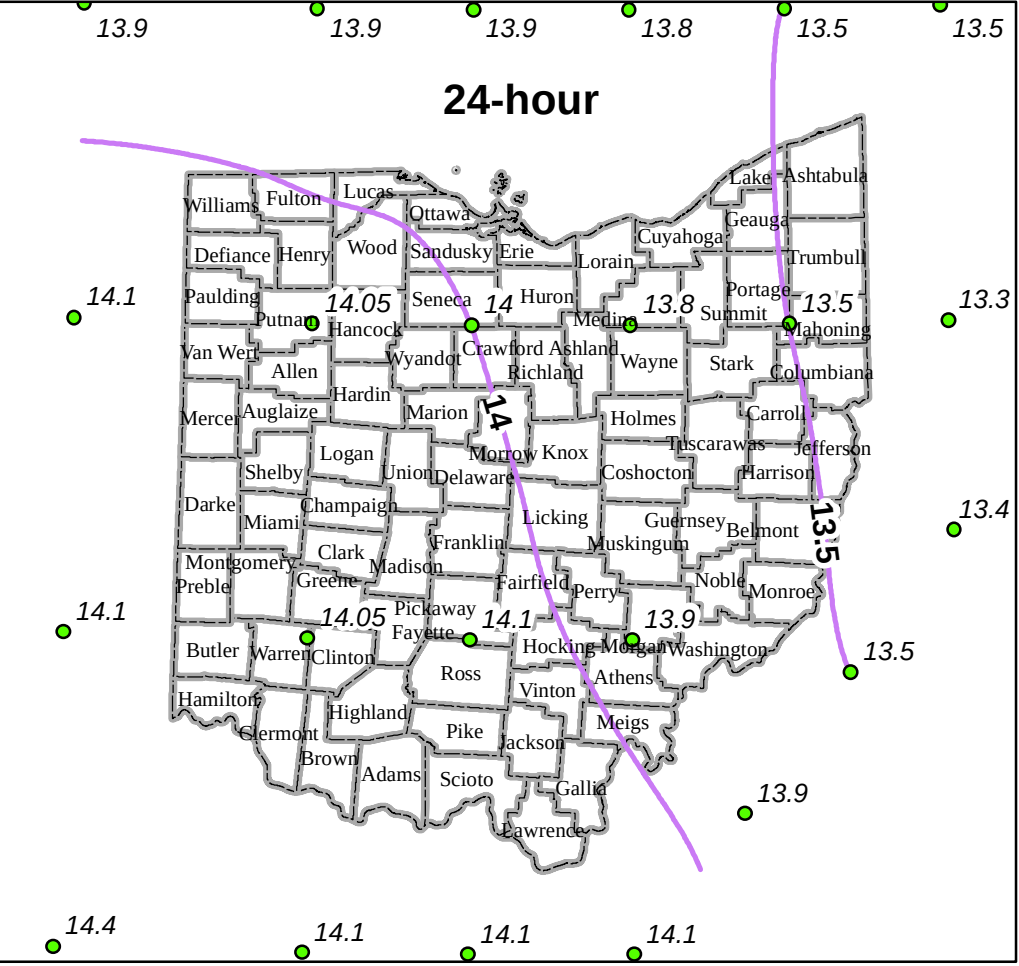
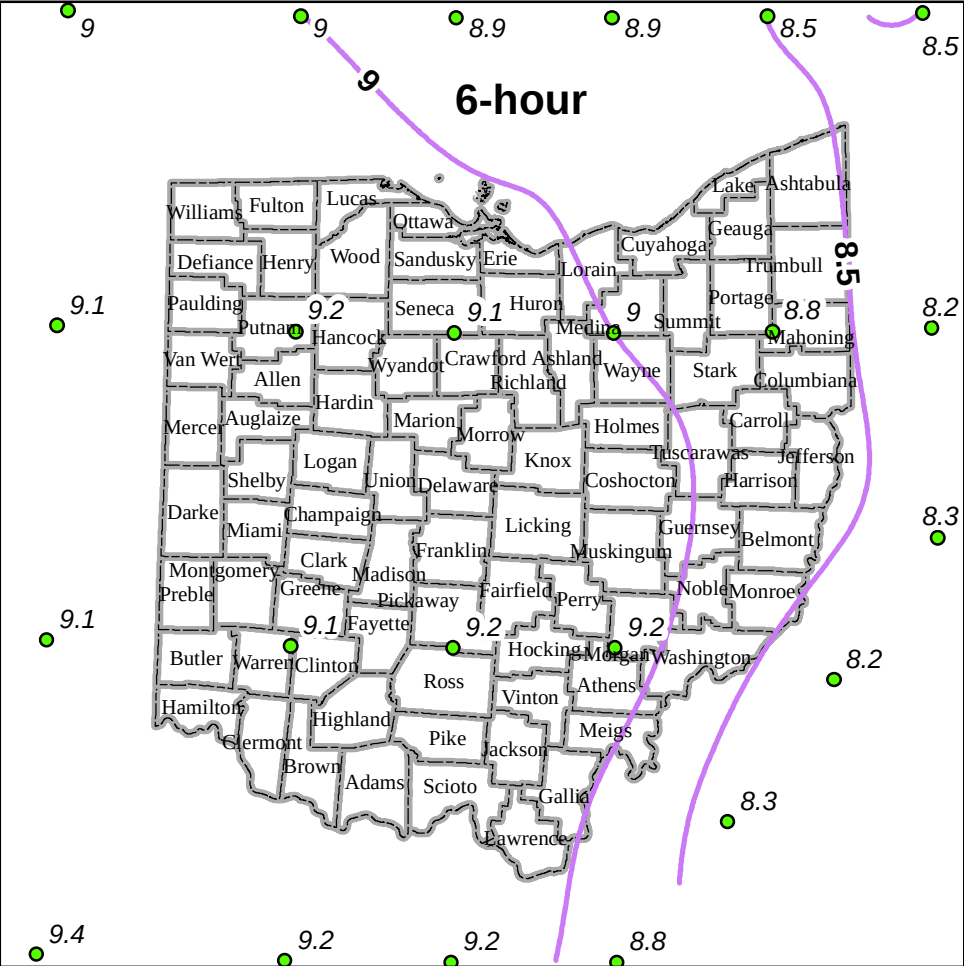
All-Season PMP values (inches)

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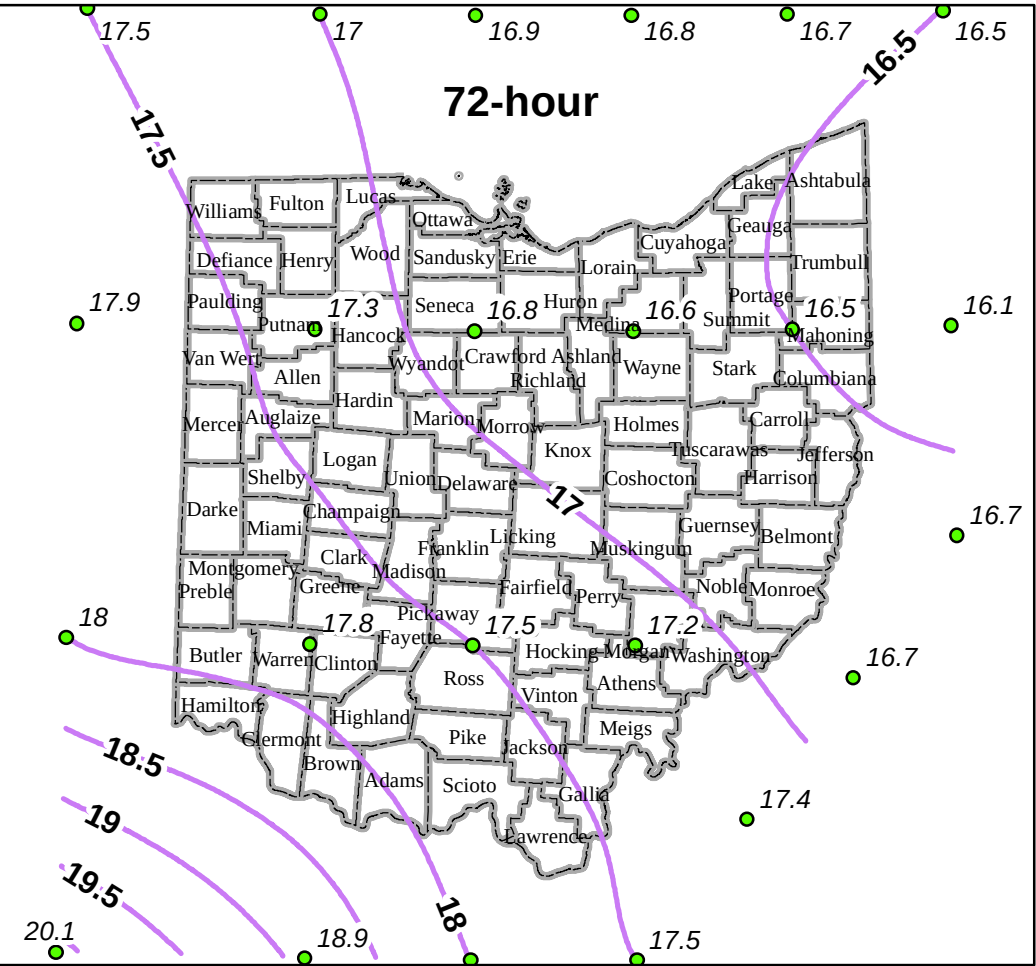
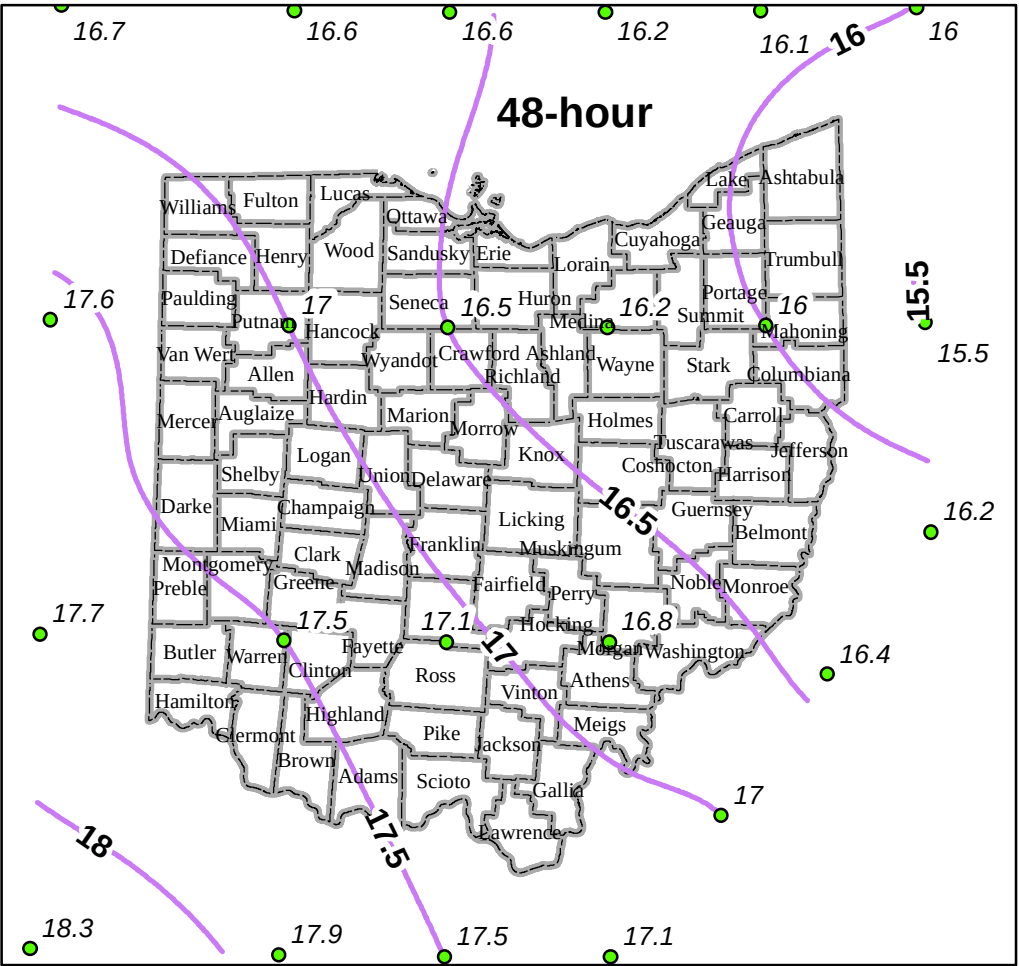
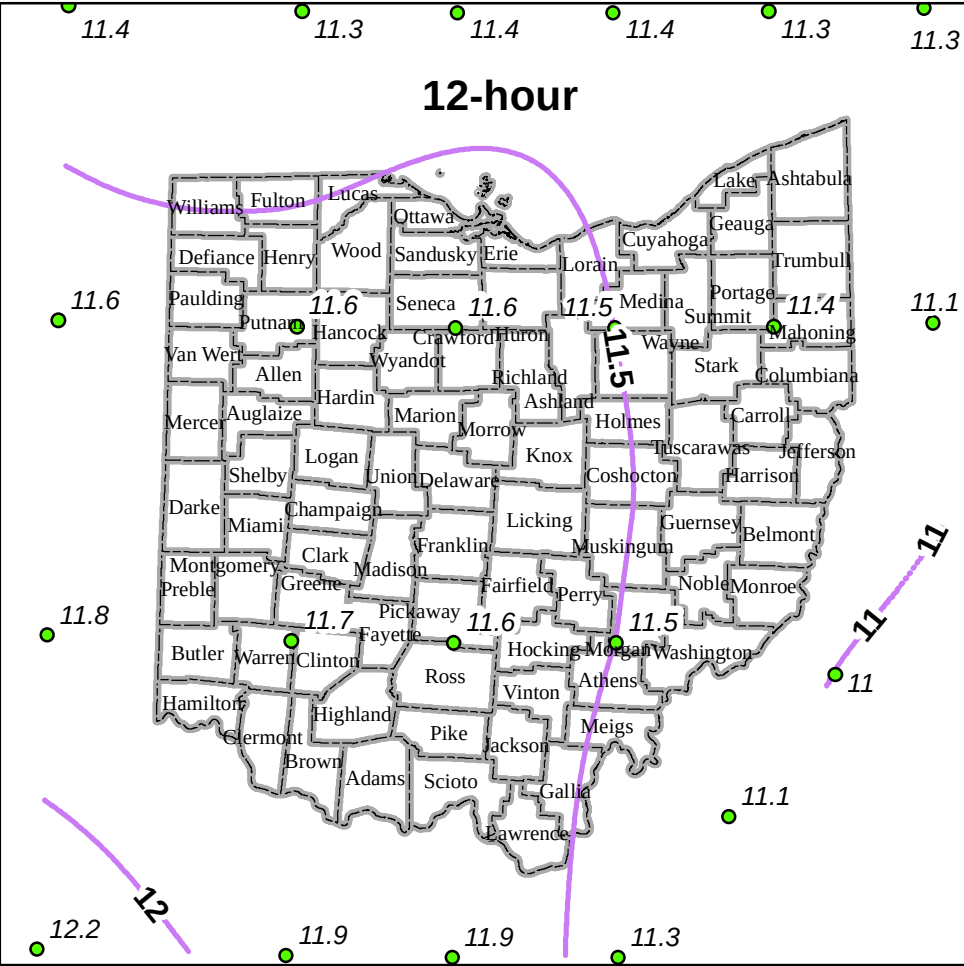


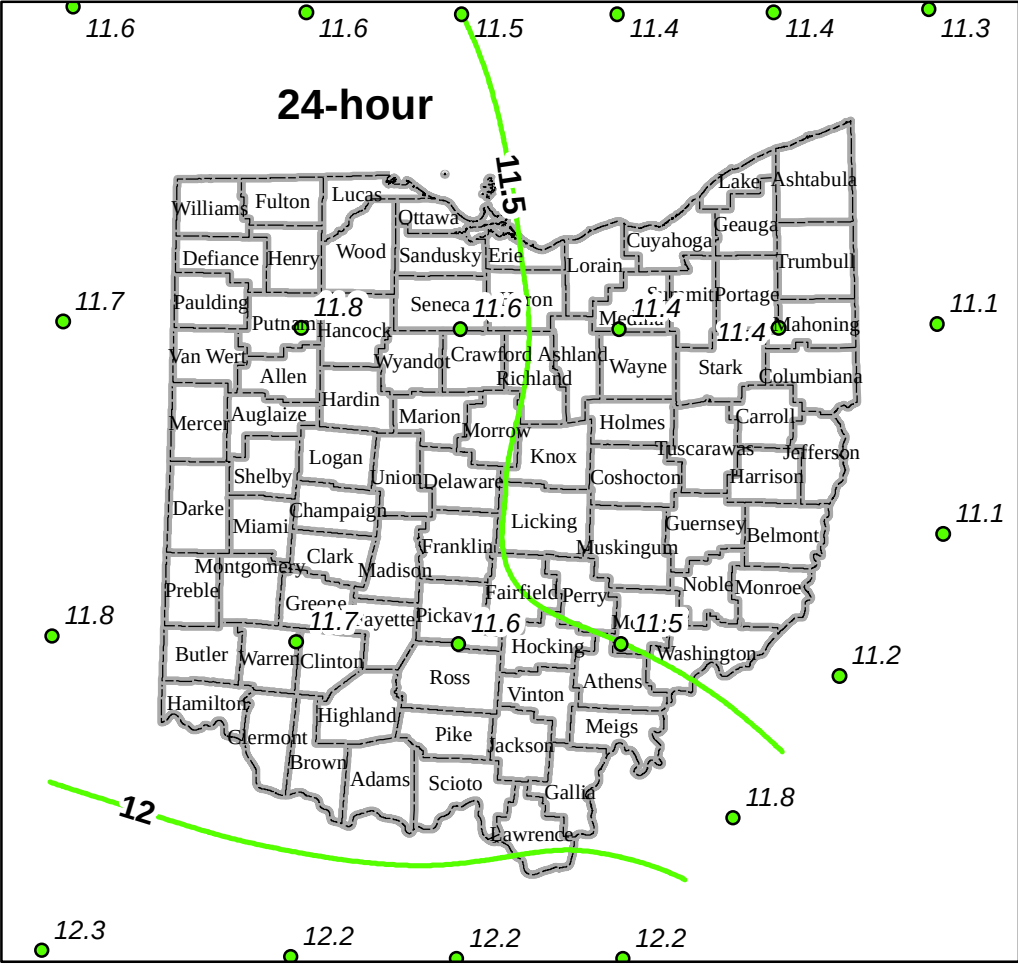
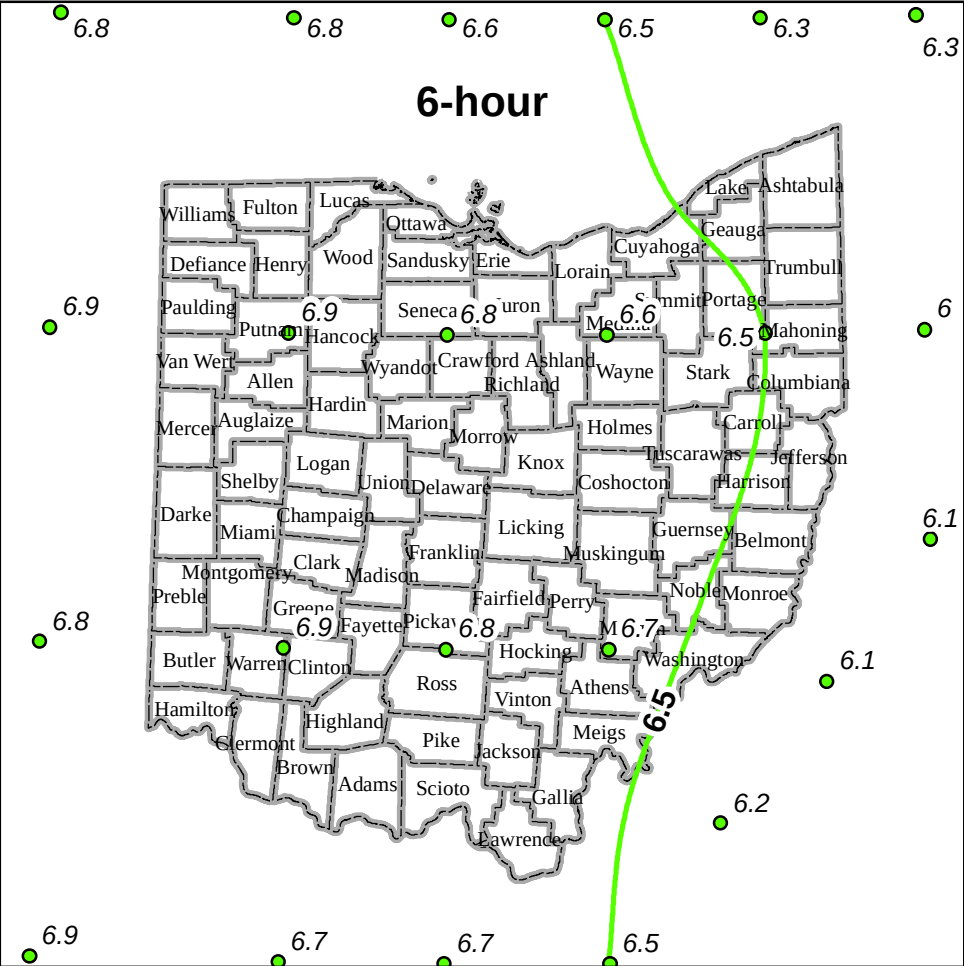
STATE OF OHIO
Department of Natural Resources

2000 square miles

All-Season PMP values (inches)

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Probable Maximum Precipitation Study
for the State of Ohio
Prepared by:
Applied Weather Associates
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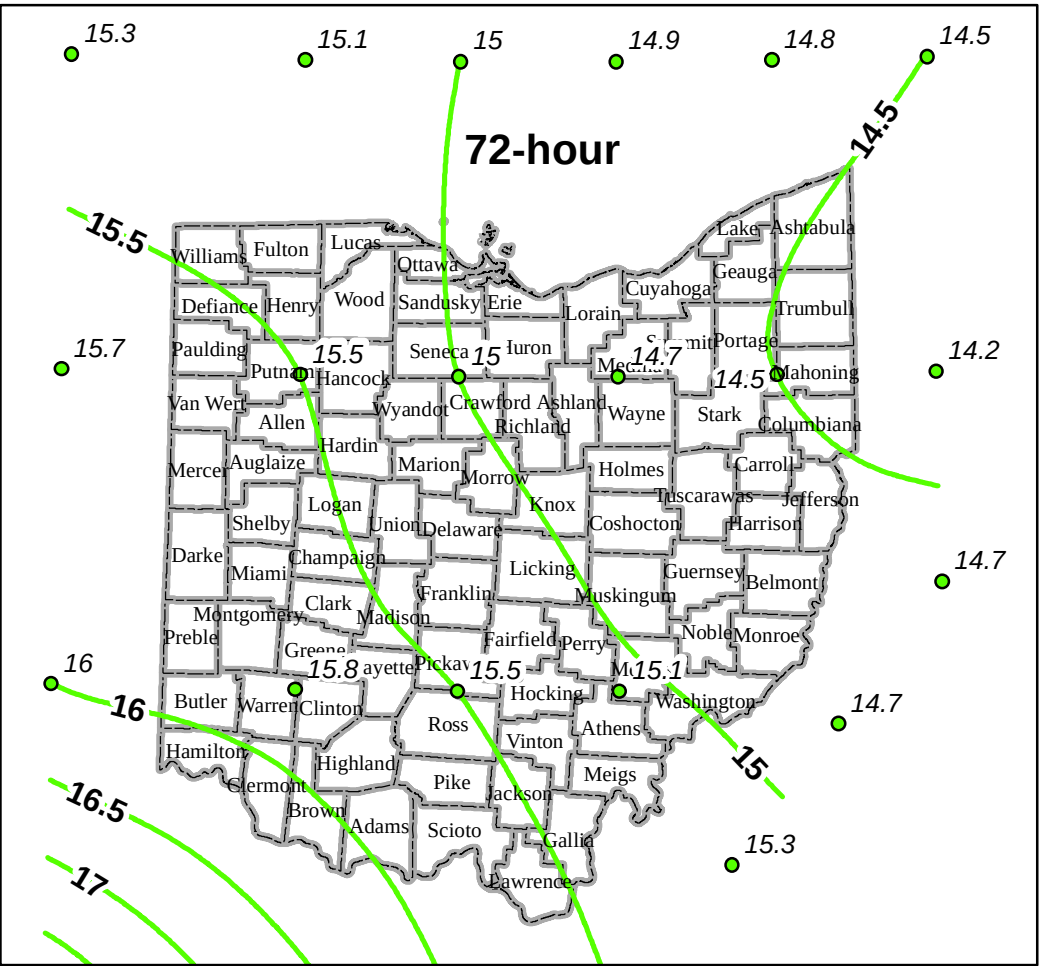
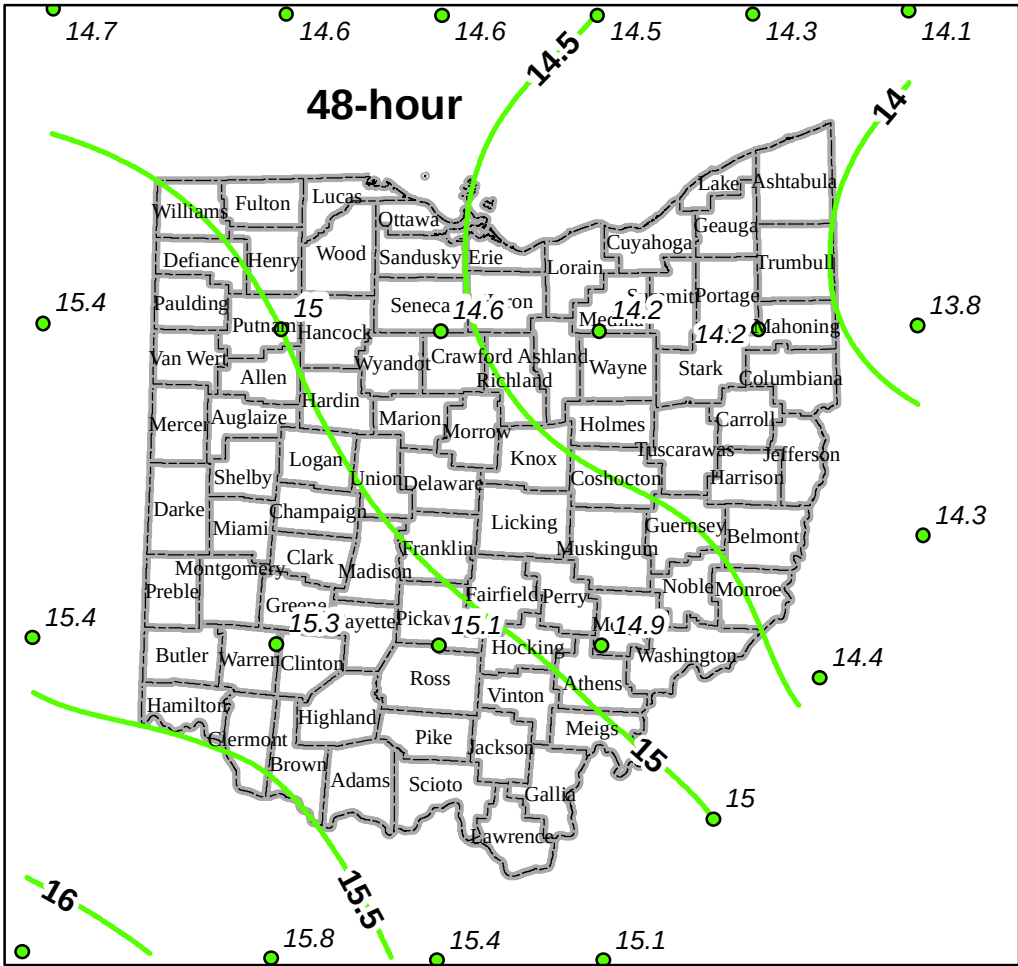
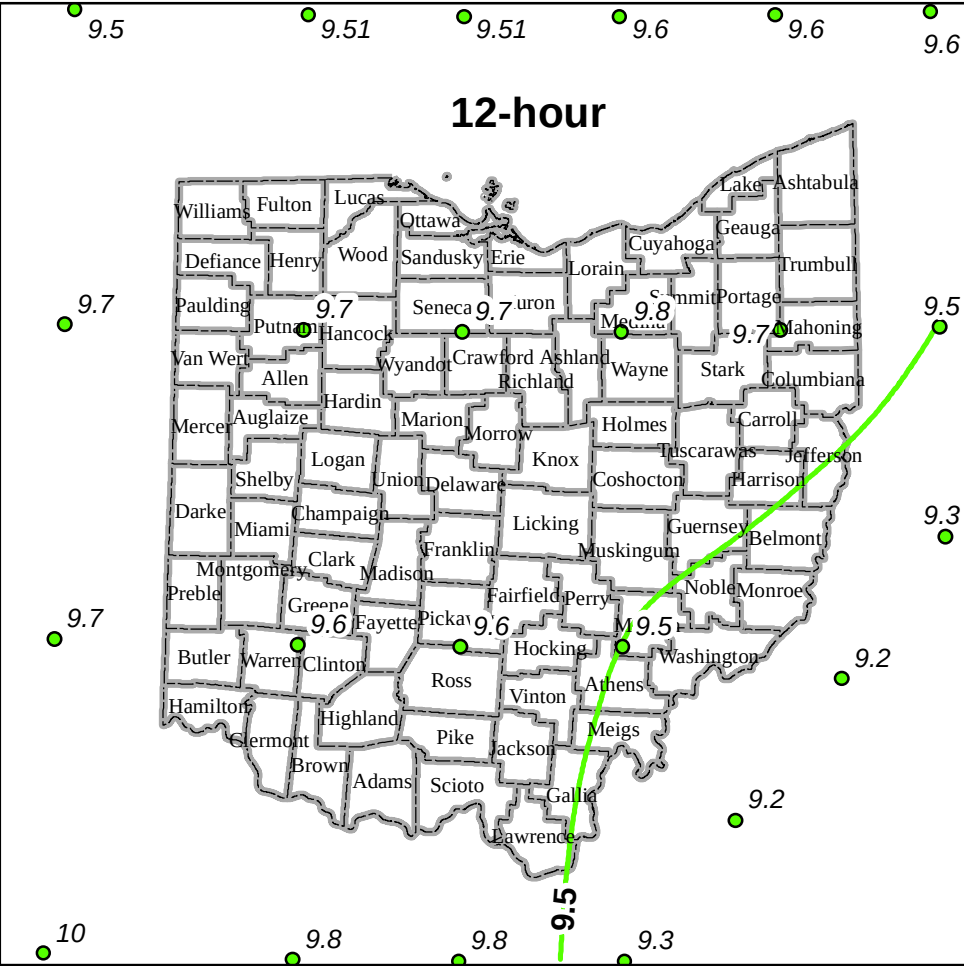


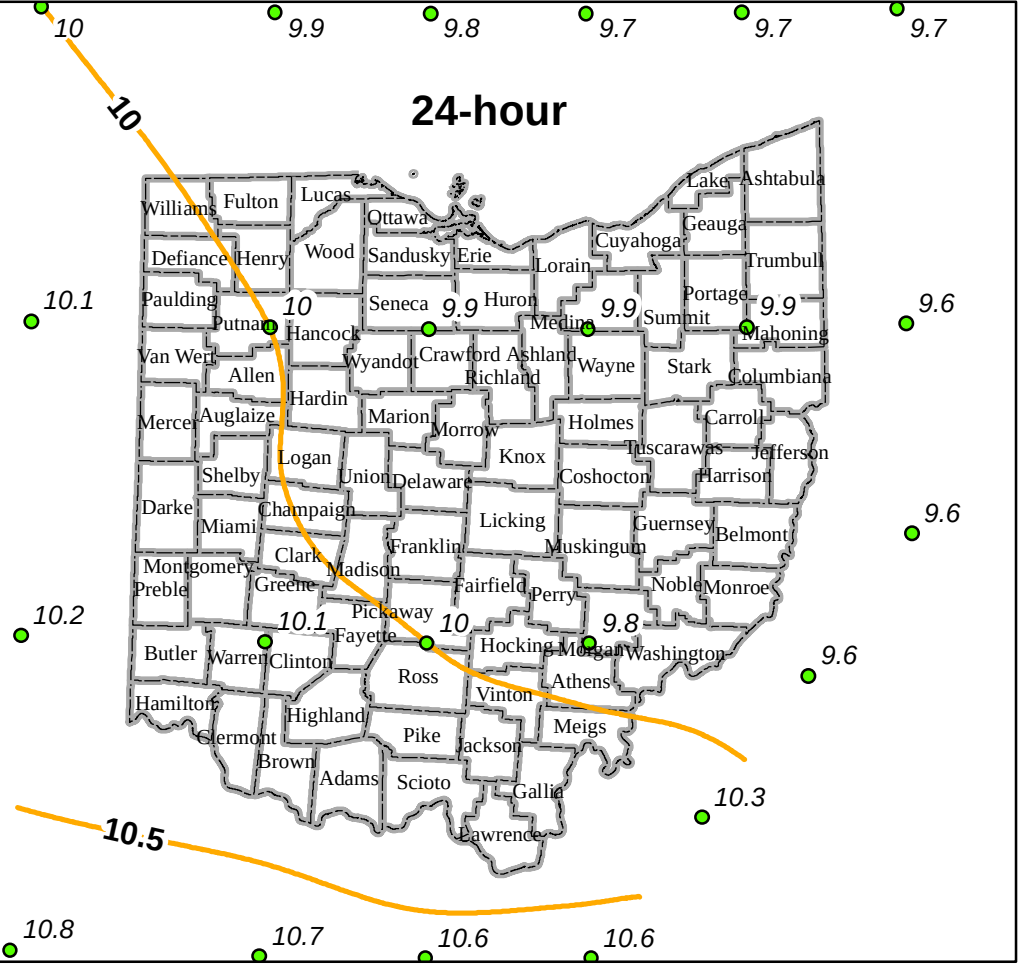
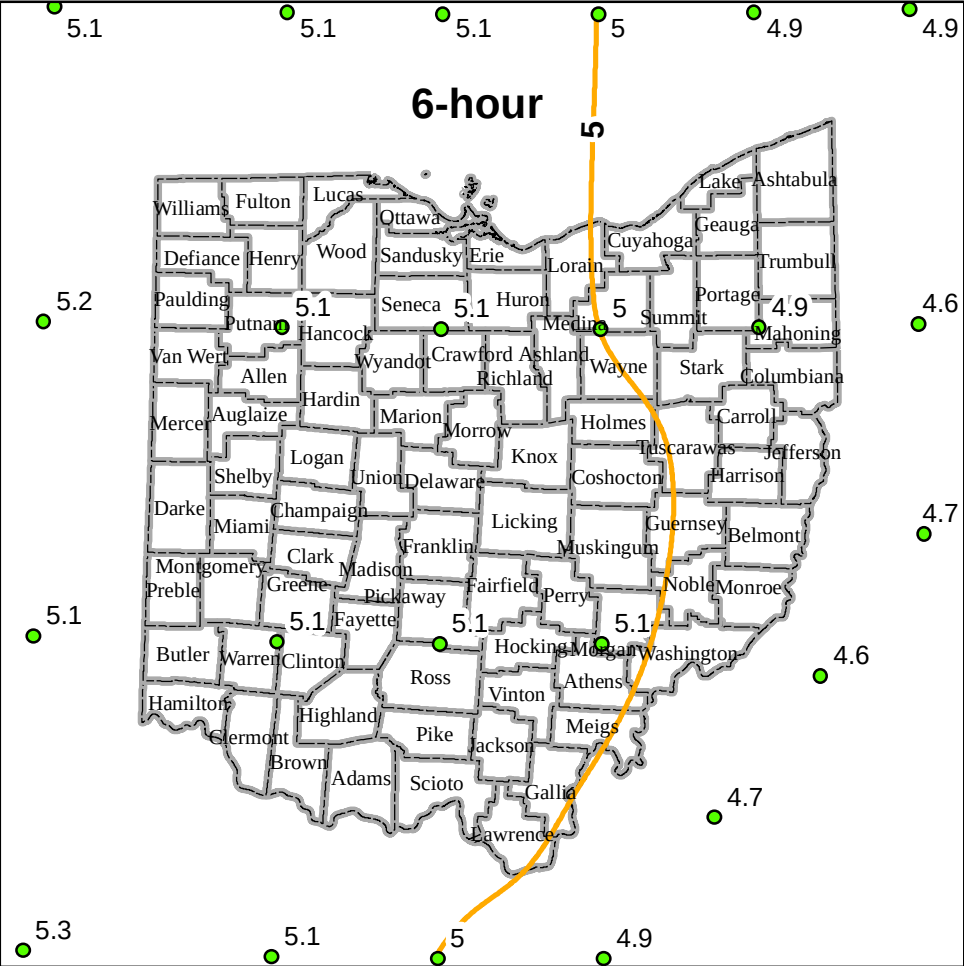
STATE OF OHIO
Department of Natural Resources

5000 square miles

All-Season PMP values (inches)

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Probable Maximum Precipitation Study
for the State of Ohio
Prepared by:
Applied Weather Associates
2013



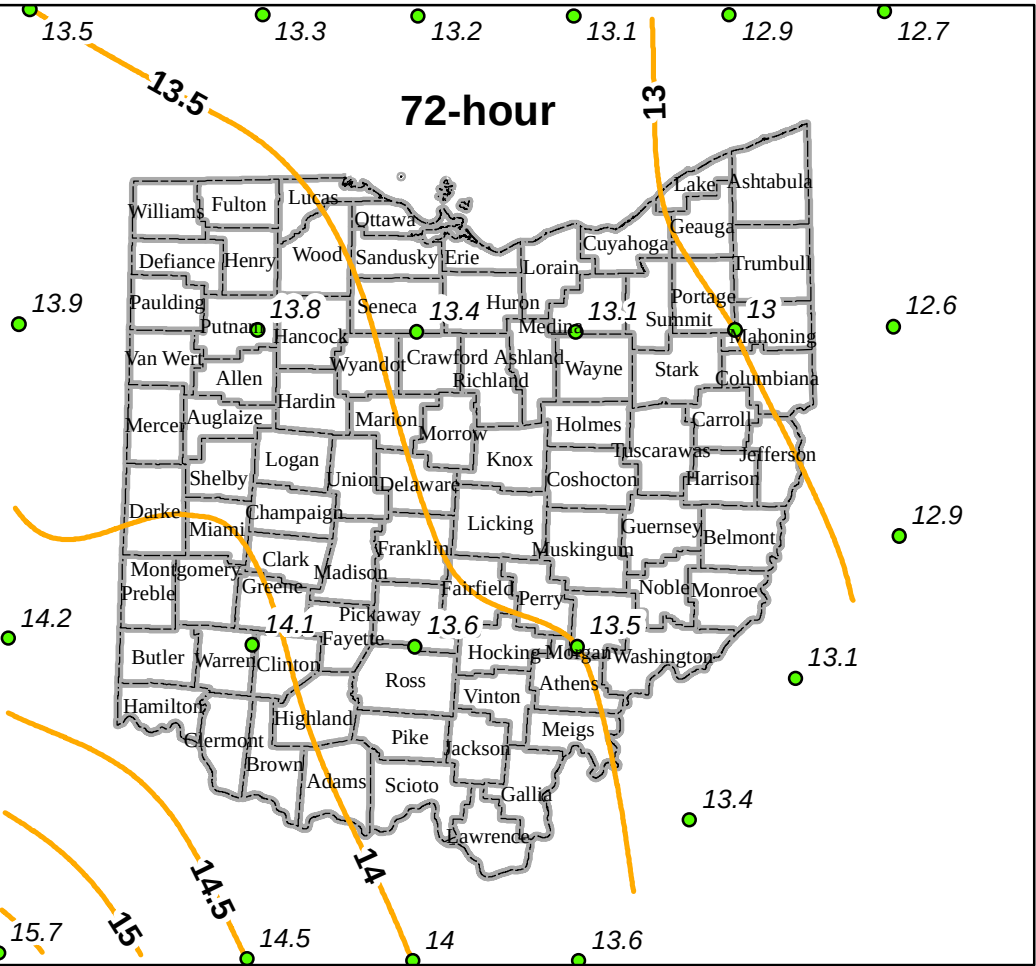
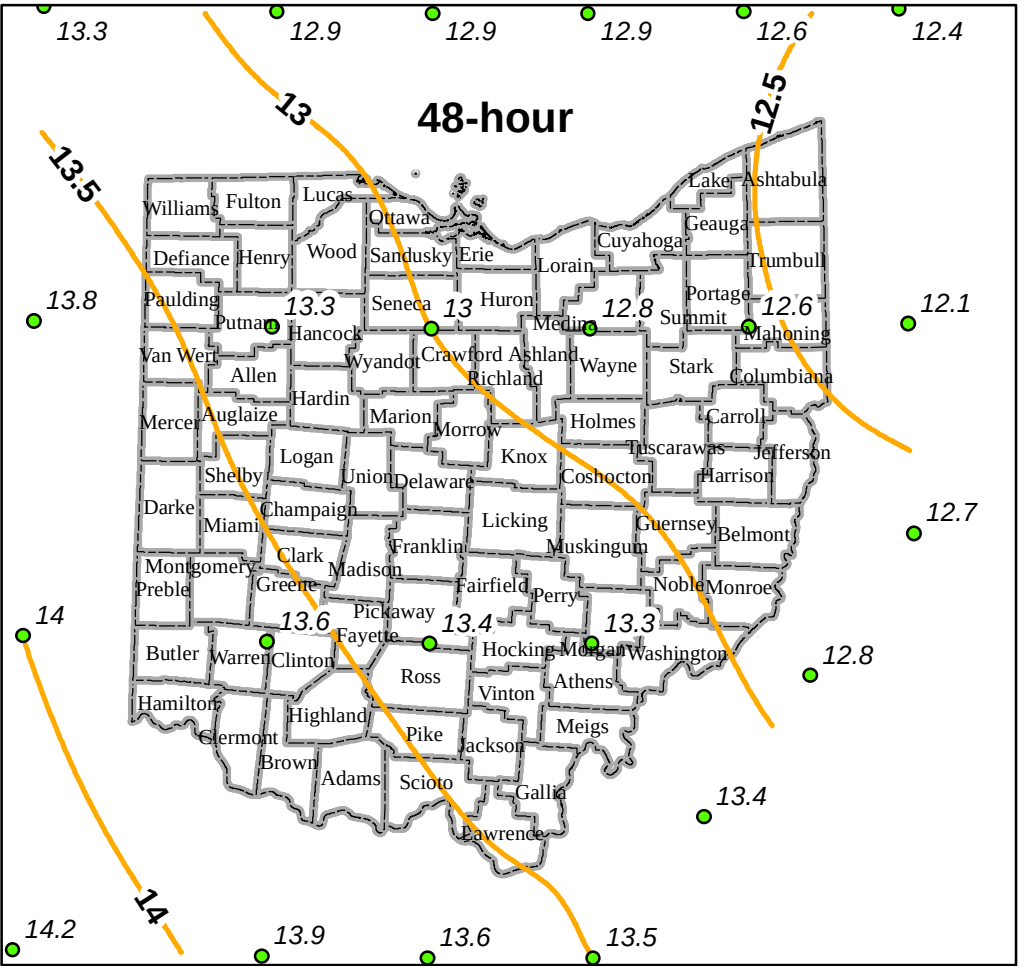
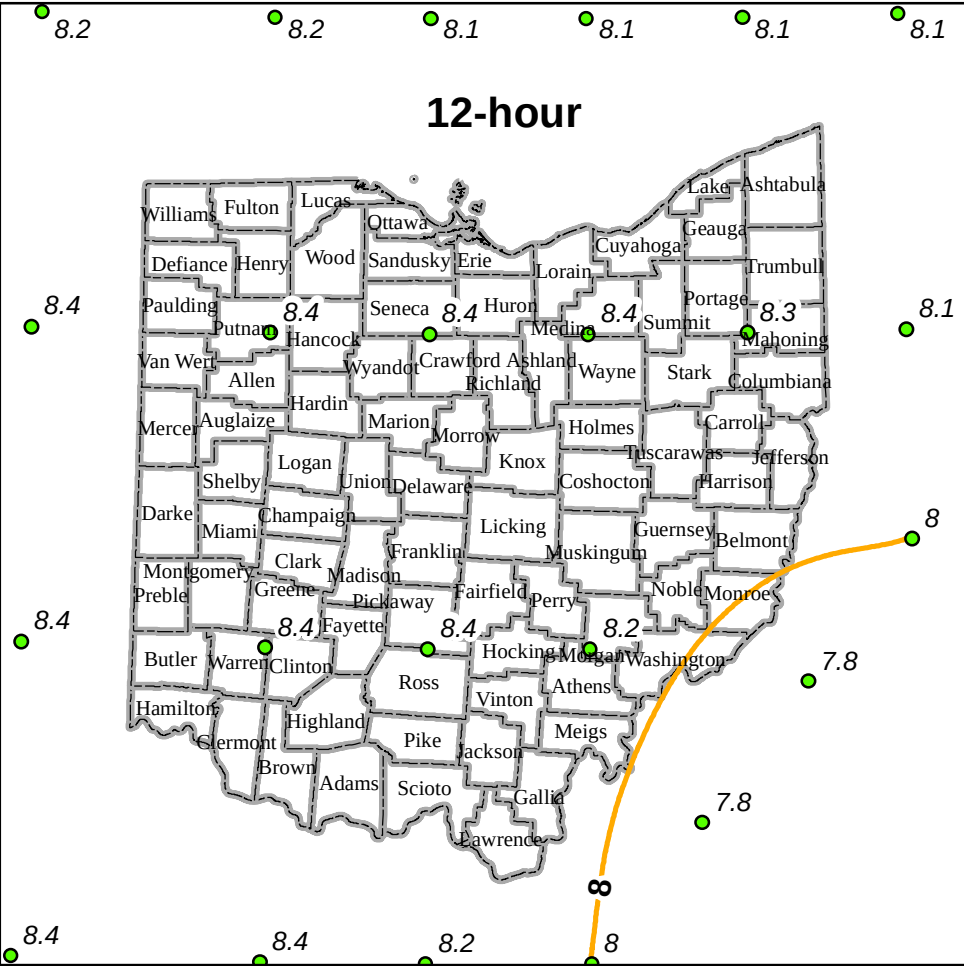


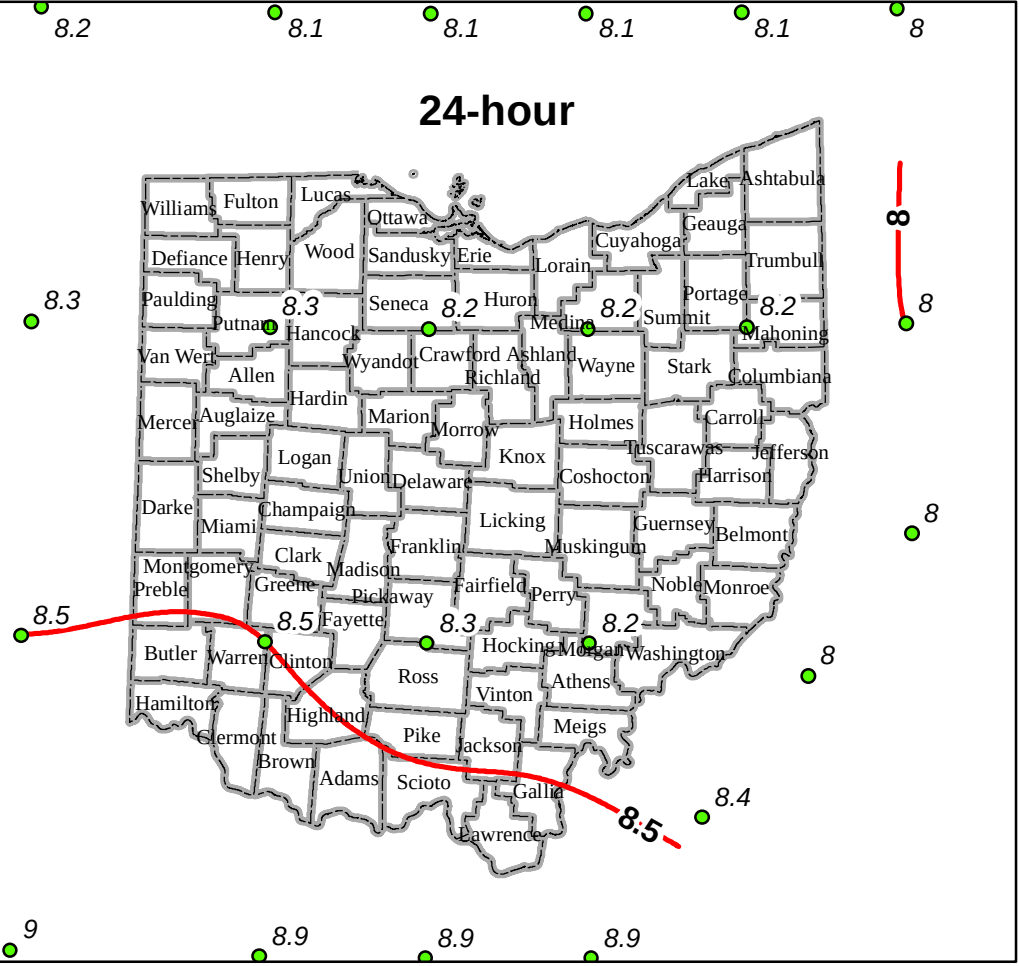
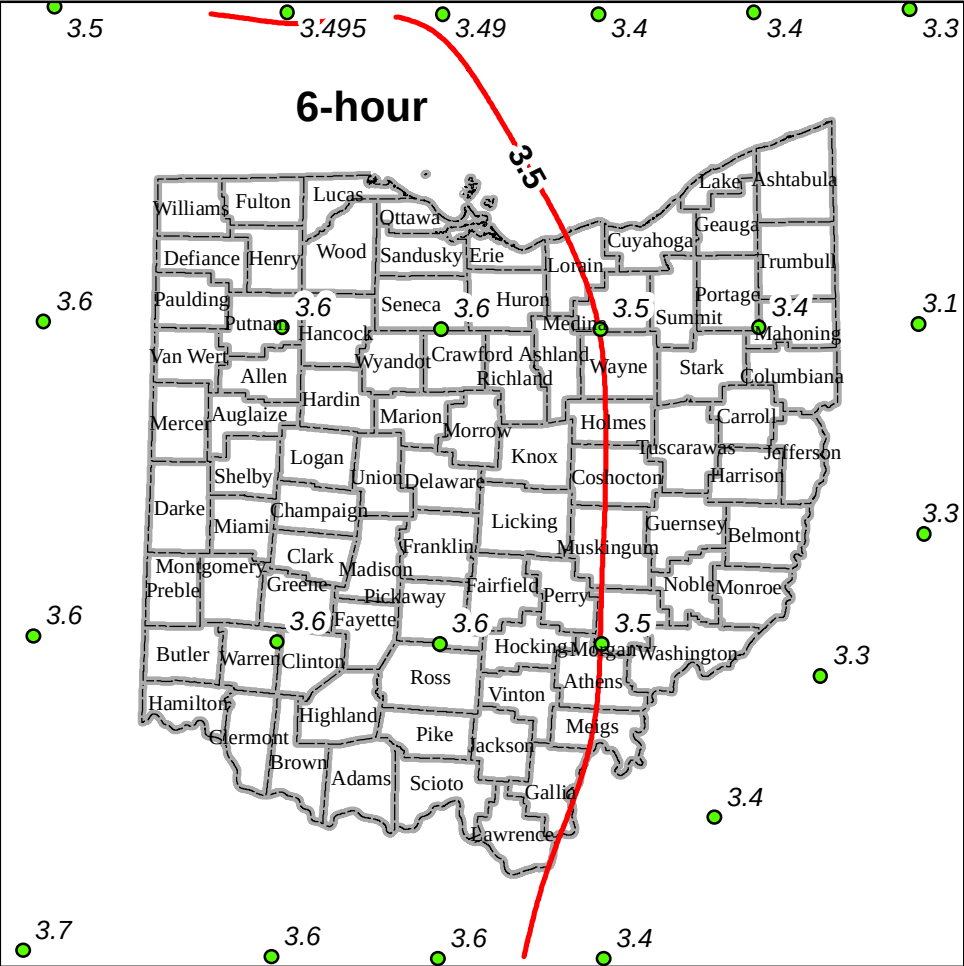
STATE OF OHIO
Department of Natural Resources

10000 square miles

All-Season PMP values (inches)

Data obtained from:
Probable Maximum Precipitation Study
for the State of Ohio
Prepared by:
Applied Weather Associates
2013



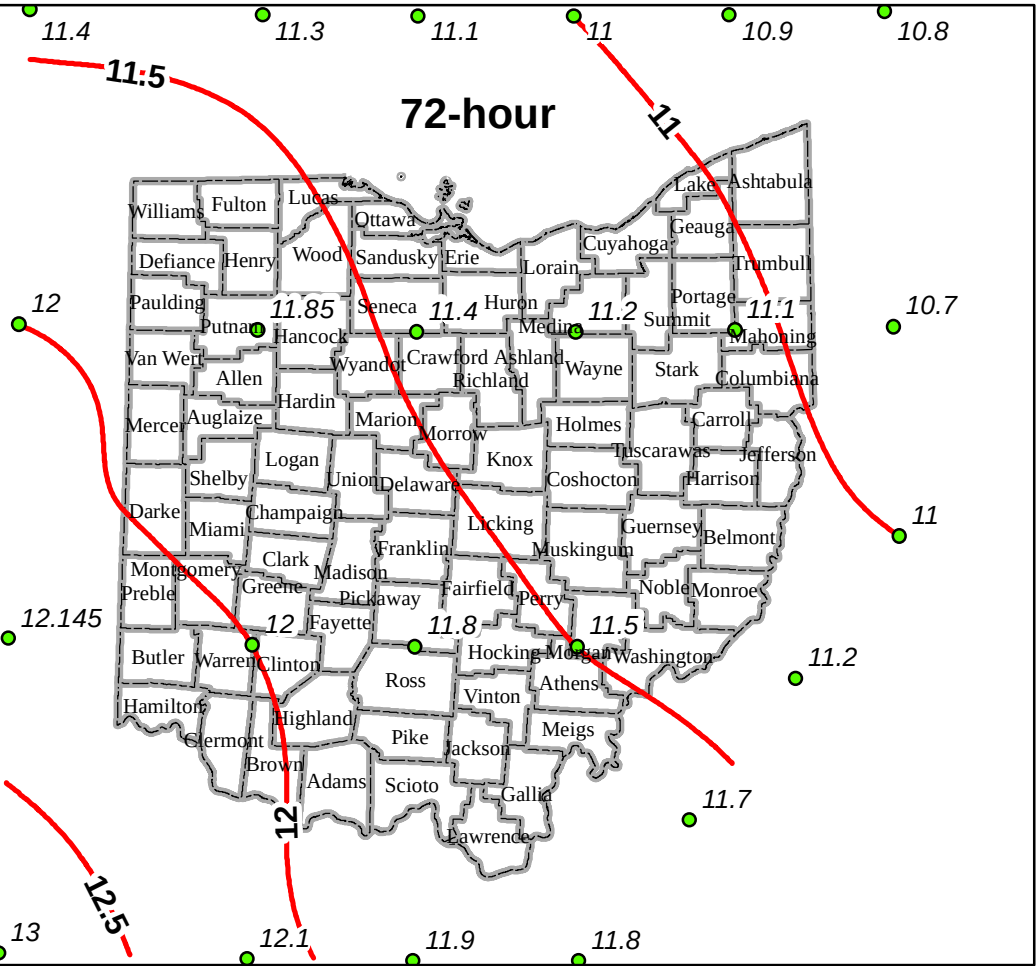
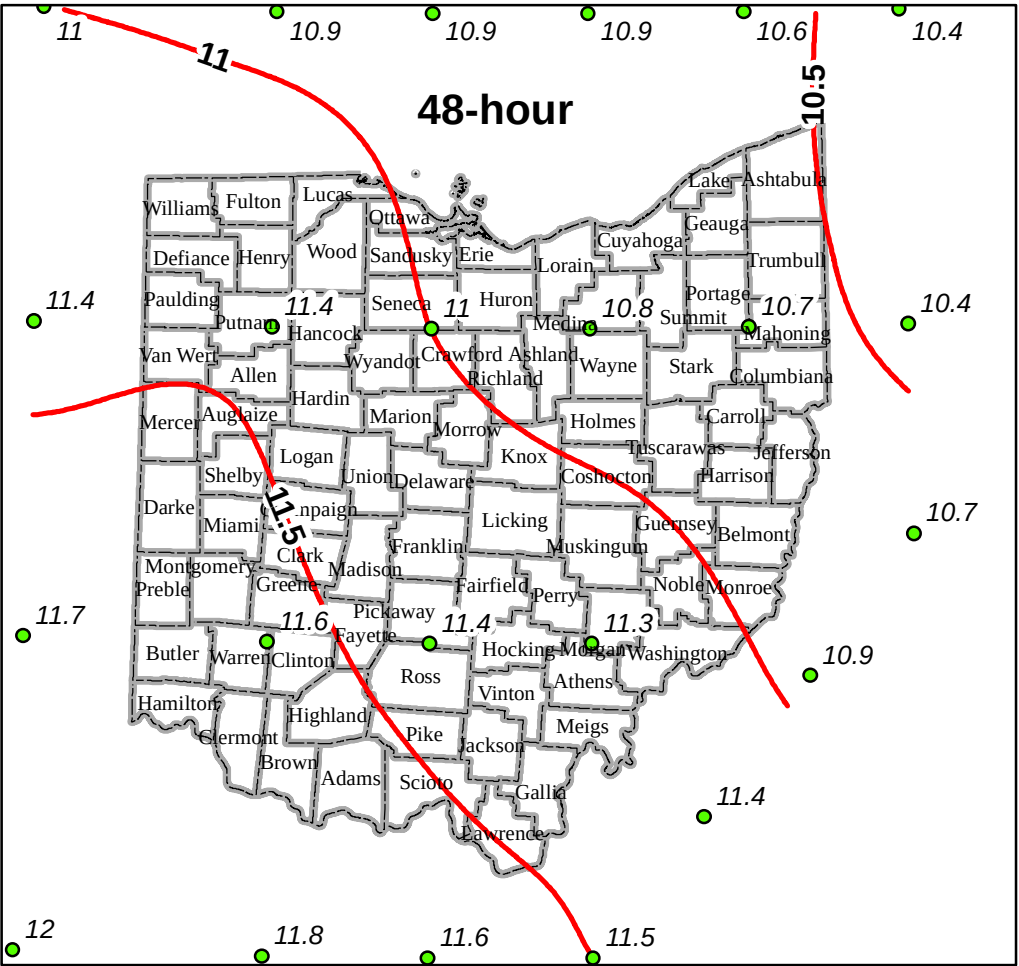
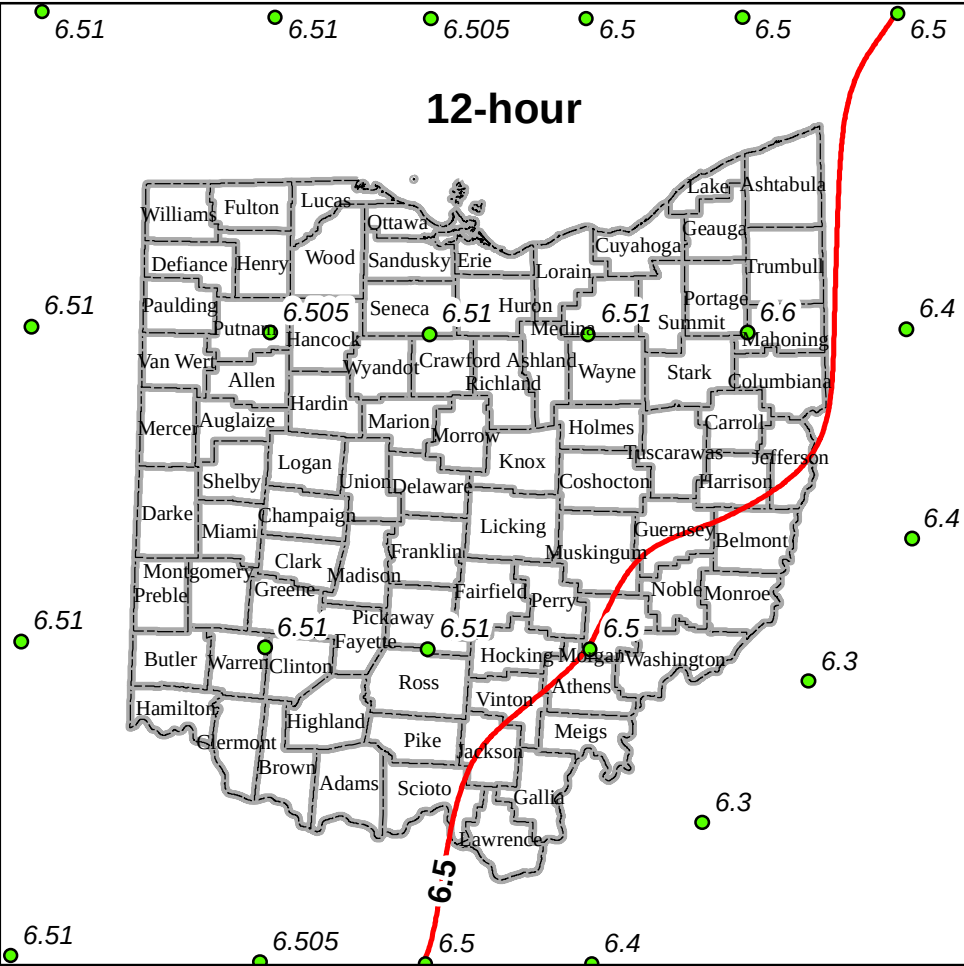


STATE OF OHIO
Department of Natural Resources

20000 square miles

All-Season PMP values (inches)

Data obtained from:
Probable Maximum Precipitation Study
for the State of Ohio
Prepared by:
Applied Weather Associates
2013





NOAA Atlas 14, Volume 2, Version 3
Location name: Cheshire, Ohio, USA*
Latitude: 38.9537°, Longitude: -82.1216°
Elevation: 580.02 ft**
* source: ESRI Maps
** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.340 (0.308-0.374)	0.404 (0.367-0.446)	0.486 (0.441-0.535)	0.548 (0.496-0.602)	0.625 (0.564-0.686)	0.685 (0.616-0.749)	0.740 (0.664-0.809)	0.795 (0.711-0.868)	0.867 (0.771-0.944)	0.919 (0.814-0.999)
10-min	0.528 (0.478-0.581)	0.631 (0.573-0.696)	0.755 (0.685-0.831)	0.846 (0.766-0.930)	0.956 (0.863-1.05)	1.04 (0.934-1.14)	1.11 (1.00-1.22)	1.19 (1.06-1.30)	1.27 (1.13-1.39)	1.34 (1.19-1.46)
15-min	0.647 (0.586-0.712)	0.772 (0.701-0.851)	0.927 (0.841-1.02)	1.04 (0.943-1.14)	1.18 (1.07-1.30)	1.28 (1.16-1.41)	1.38 (1.24-1.51)	1.48 (1.32-1.61)	1.59 (1.41-1.73)	1.67 (1.48-1.82)
30-min	0.857 (0.776-0.942)	1.03 (0.938-1.14)	1.27 (1.15-1.40)	1.45 (1.31-1.59)	1.67 (1.51-1.83)	1.84 (1.65-2.01)	2.00 (1.79-2.18)	2.15 (1.93-2.35)	2.36 (2.10-2.57)	2.51 (2.22-2.73)
60-min	1.05 (0.947-1.15)	1.27 (1.15-1.40)	1.59 (1.45-1.75)	1.84 (1.67-2.02)	2.16 (1.95-2.38)	2.42 (2.18-2.65)	2.67 (2.40-2.92)	2.92 (2.62-3.19)	3.26 (2.90-3.55)	3.52 (3.12-3.83)
2-hr	1.23 (1.11-1.35)	1.48 (1.34-1.63)	1.86 (1.69-2.04)	2.15 (1.95-2.36)	2.56 (2.30-2.80)	2.88 (2.58-3.14)	3.21 (2.86-3.49)	3.54 (3.14-3.85)	4.00 (3.52-4.34)	4.36 (3.82-4.72)
3-hr	1.30 (1.18-1.44)	1.57 (1.42-1.74)	1.96 (1.78-2.17)	2.28 (2.06-2.51)	2.71 (2.44-2.98)	3.06 (2.74-3.35)	3.42 (3.05-3.74)	3.79 (3.36-4.14)	4.30 (3.78-4.69)	4.70 (4.12-5.12)
6-hr	1.55 (1.41-1.71)	1.86 (1.70-2.05)	2.31 (2.11-2.54)	2.67 (2.43-2.93)	3.18 (2.88-3.48)	3.60 (3.24-3.93)	4.03 (3.61-4.40)	4.49 (3.99-4.88)	5.13 (4.52-5.56)	5.64 (4.93-6.10)
12-hr	1.82 (1.68-1.99)	2.17 (2.01-2.37)	2.67 (2.46-2.92)	3.08 (2.83-3.36)	3.67 (3.35-3.98)	4.15 (3.78-4.49)	4.66 (4.21-5.03)	5.20 (4.67-5.59)	5.96 (5.29-6.39)	6.58 (5.80-7.04)
24-hr	2.20 (2.06-2.35)	2.62 (2.46-2.81)	3.19 (2.99-3.40)	3.64 (3.41-3.89)	4.28 (3.99-4.56)	4.80 (4.46-5.10)	5.33 (4.94-5.67)	5.89 (5.44-6.26)	6.66 (6.11-7.07)	7.28 (6.64-7.72)
2-day	2.59	3.08	3.70	4.20	4.88	5.42	5.98	6.56	7.34	7.94

	(2.44-2.76)	(2.89-3.29)	(3.47-3.95)	(3.94-4.47)	(4.56-5.19)	(5.06-5.77)	(5.56-6.36)	(6.07-6.97)	(6.75-7.80)	(7.27-8.46)
3-day	2.78 (2.62-2.96)	3.30 (3.11-3.52)	3.95 (3.71-4.20)	4.46 (4.19-4.75)	5.16 (4.84-5.48)	5.71 (5.34-6.07)	6.27 (5.85-6.65)	6.84 (6.36-7.26)	7.61 (7.03-8.07)	8.20 (7.54-8.71)
4-day	2.98 (2.80-3.16)	3.53 (3.32-3.75)	4.20 (3.95-4.46)	4.73 (4.45-5.02)	5.45 (5.11-5.77)	6.01 (5.62-6.36)	6.56 (6.13-6.95)	7.13 (6.64-7.55)	7.88 (7.31-8.35)	8.45 (7.80-8.96)
7-day	3.58 (3.37-3.79)	4.23 (3.99-4.49)	4.99 (4.71-5.29)	5.57 (5.25-5.90)	6.34 (5.97-6.72)	6.94 (6.51-7.34)	7.52 (7.05-7.95)	8.10 (7.57-8.56)	8.85 (8.24-9.36)	9.42 (8.73-9.98)
10-day	4.09 (3.86-4.32)	4.82 (4.56-5.10)	5.62 (5.31-5.94)	6.24 (5.90-6.59)	7.04 (6.64-7.43)	7.64 (7.20-8.07)	8.23 (7.73-8.69)	8.80 (8.25-9.30)	9.53 (8.90-10.1)	10.1 (9.38-10.7)
20-day	5.68 (5.40-5.98)	6.67 (6.33-7.01)	7.67 (7.28-8.06)	8.42 (7.99-8.85)	9.38 (8.89-9.85)	10.1 (9.54-10.6)	10.7 (10.2-11.3)	11.4 (10.7-12.0)	12.2 (11.5-12.8)	12.7 (12.0-13.4)
30-day	7.10 (6.78-7.42)	8.30 (7.93-8.68)	9.44 (9.02-9.88)	10.3 (9.84-10.8)	11.4 (10.8-11.9)	12.2 (11.6-12.7)	12.9 (12.3-13.5)	13.6 (12.9-14.2)	14.4 (13.7-15.1)	15.0 (14.2-15.8)
45-day	9.07 (8.69-9.47)	10.6 (10.1-11.0)	11.9 (11.4-12.4)	12.9 (12.3-13.4)	14.1 (13.5-14.7)	14.9 (14.3-15.6)	15.7 (15.0-16.4)	16.5 (15.7-17.2)	17.4 (16.5-18.1)	18.0 (17.1-18.8)
60-day	10.9 (10.4-11.4)	12.7 (12.1-13.2)	14.1 (13.5-14.7)	15.2 (14.6-15.9)	16.5 (15.8-17.2)	17.4 (16.7-18.2)	18.3 (17.5-19.1)	19.0 (18.2-19.9)	19.9 (19.0-20.8)	20.5 (19.5-21.4)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

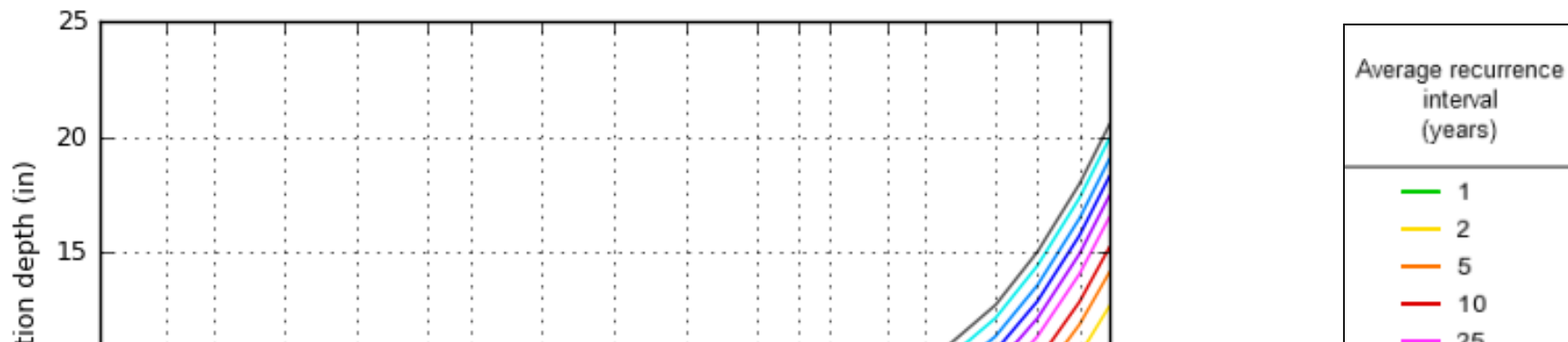
Please refer to NOAA Atlas 14 document for more information.

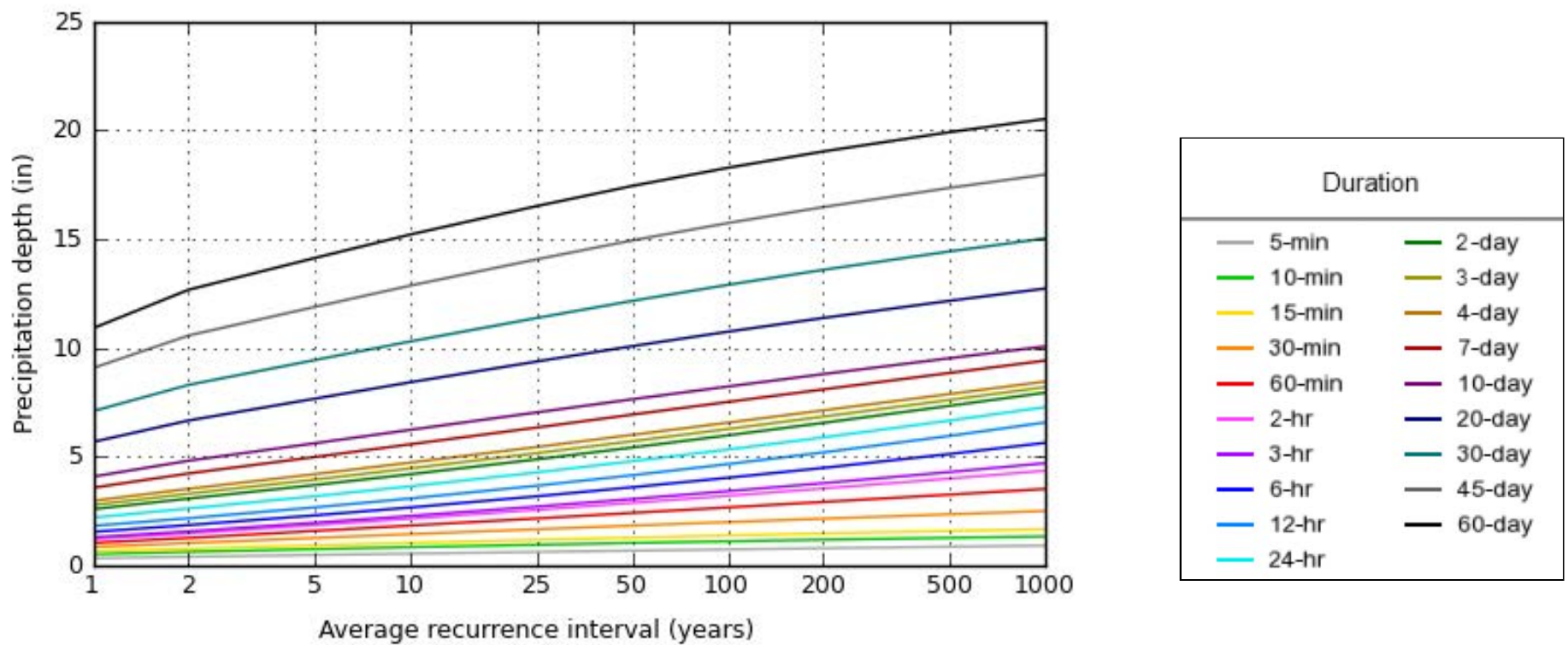
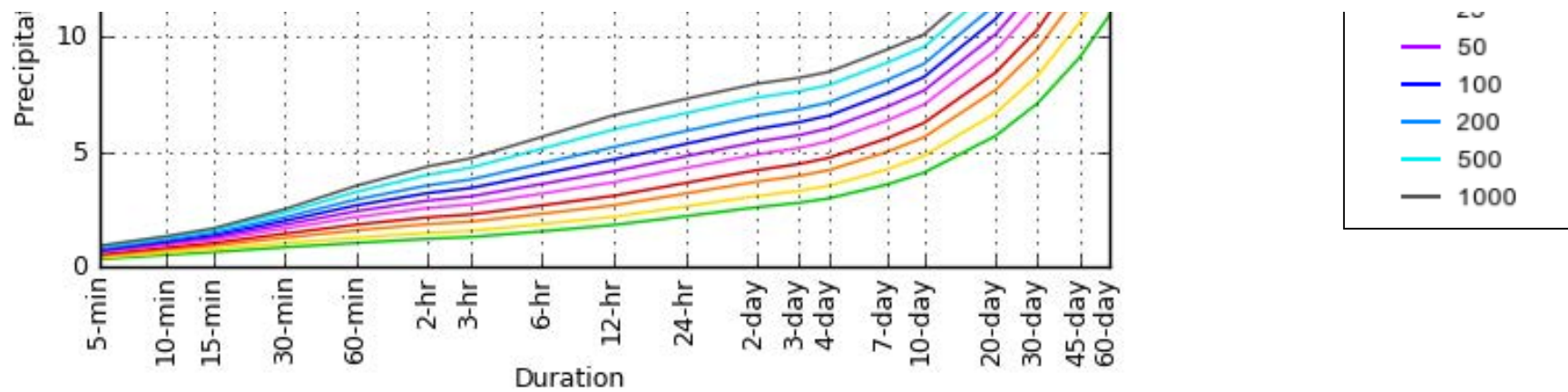
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 38.9537°, Longitude: -82.1216°

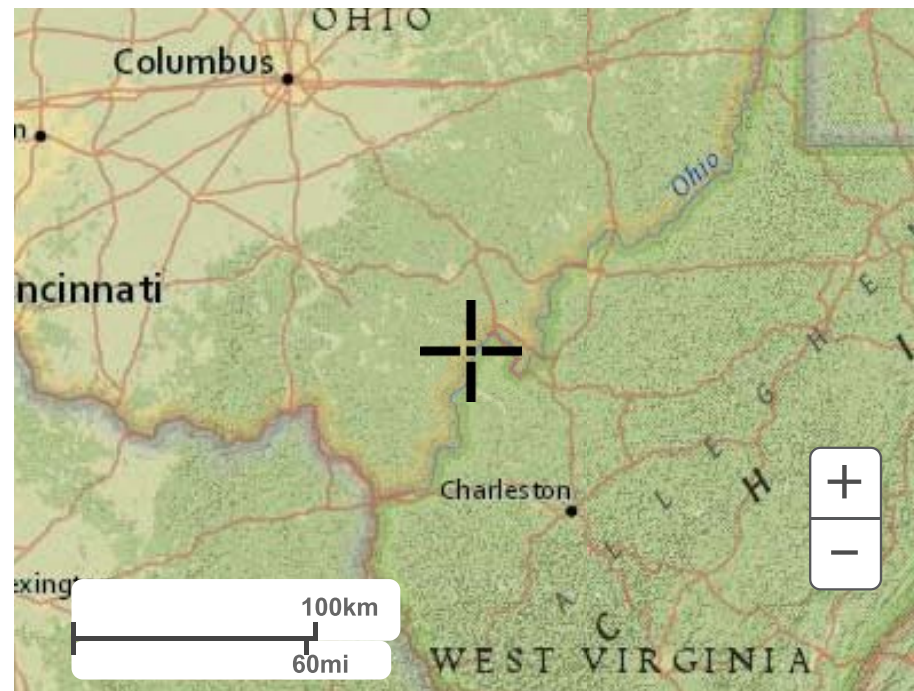




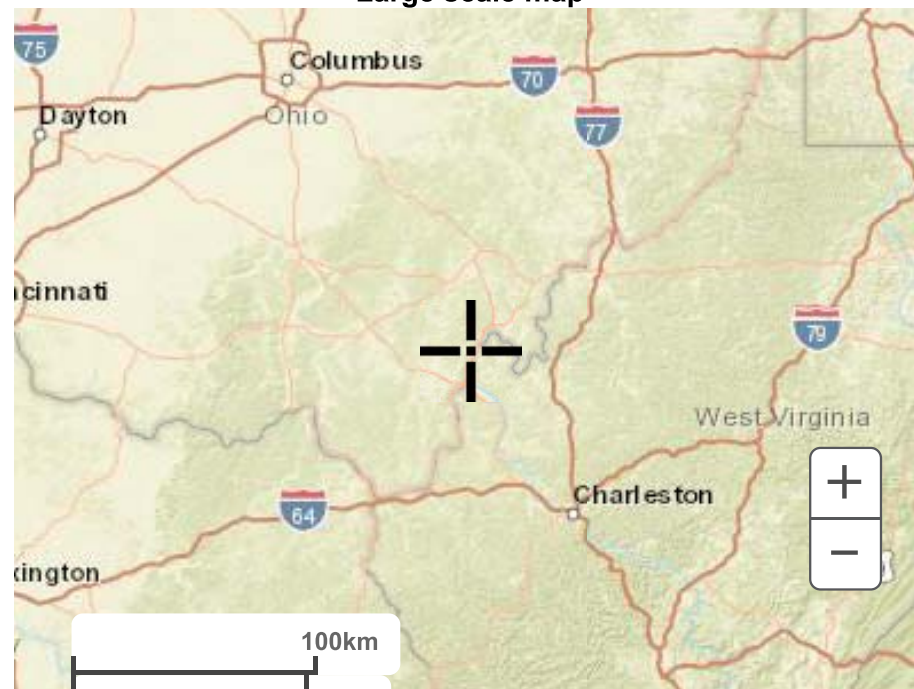
Small scale terrain



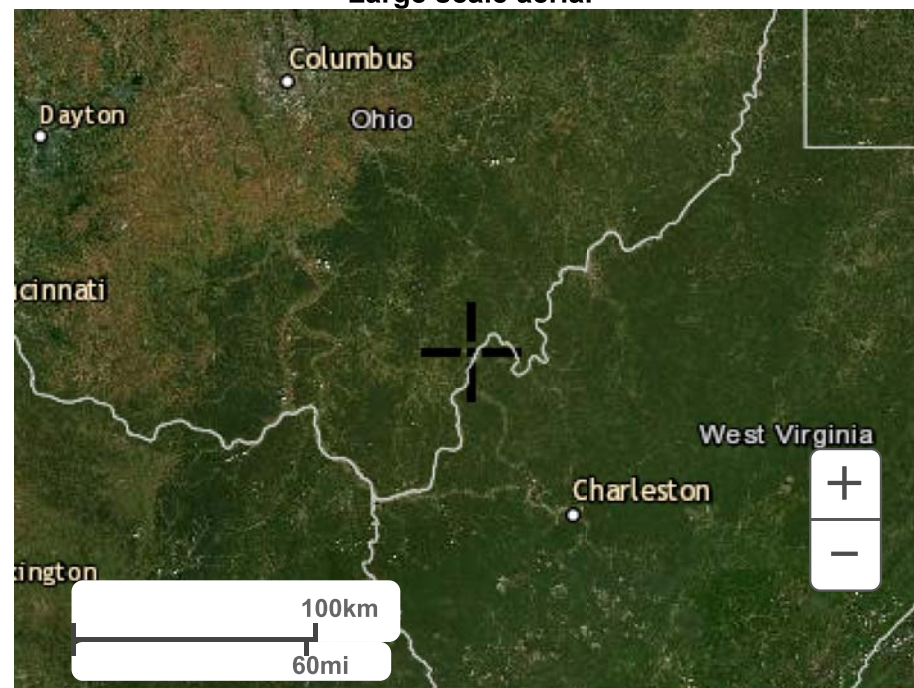
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

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[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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ATTACHMENT D

STREAM STATS REPORT

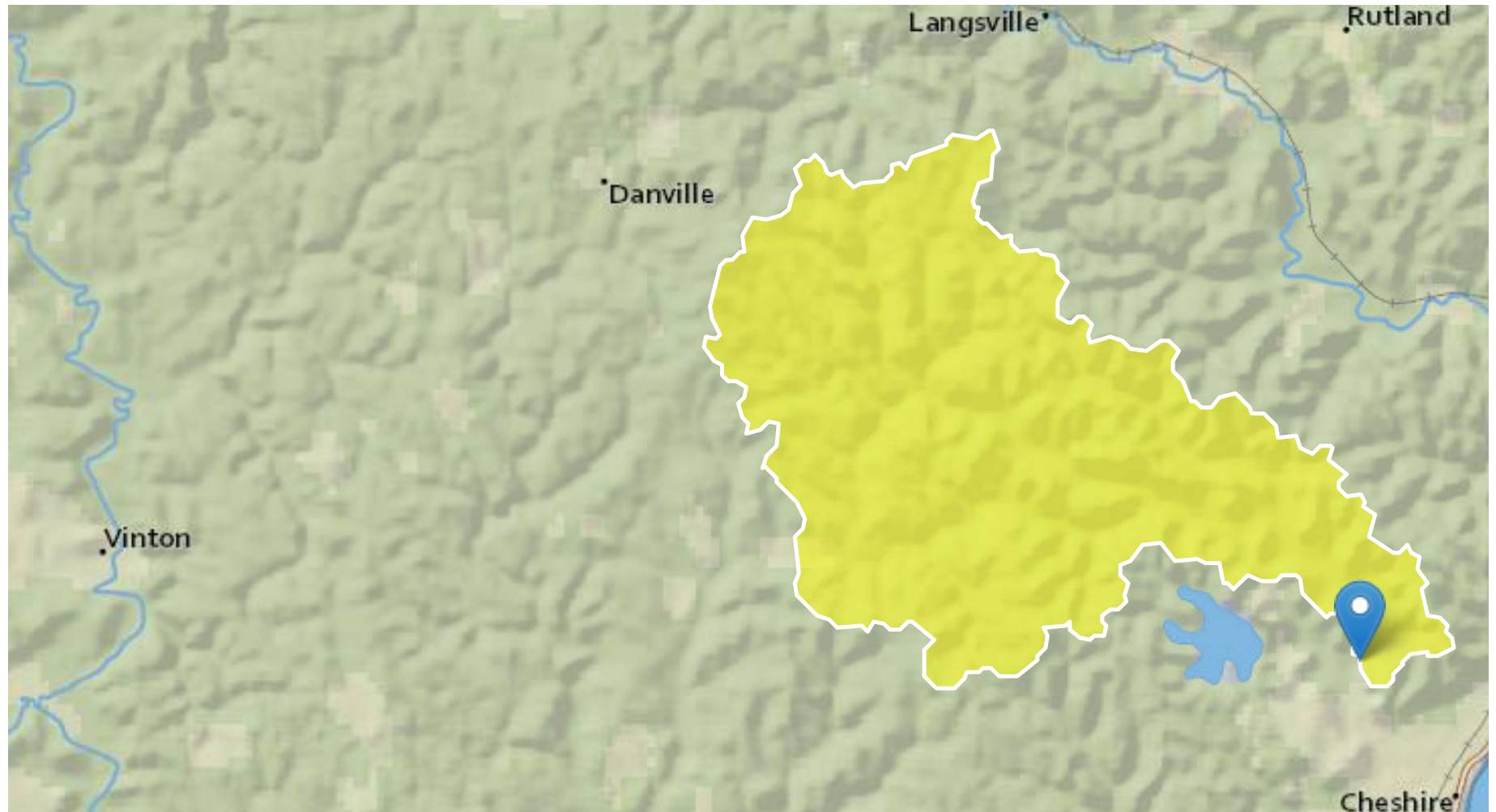
StreamStats Report

Region ID: OH

Workspace ID: OH20220323153315492000

Clicked Point (Latitude, Longitude): 38.96181, -82.12808

Time: 2022-03-23 10:33:36 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	17.1	square miles
OHREGC	Ohio Region C Indicator	0	dimensionless
OHREGA	Ohio Region A Indicator	1	dimensionless
CSL1085LFP	Change in elevation divided by length between points 10 and 85 percent of distance along the longest flow path to the basin divide, LFP from 2D grid	16.1	feet per mi
LC92STOR	Percentage of water bodies and wetlands determined from the NLCD	0.21	percent
STREAM_VARG	Streamflow variability index as defined in WRIR 02-4068, computed from regional grid	0.69	dimensionless

Peak-Flow Statistics Parameters [Peak Flow Full Model Reg A SIR2019 5018]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
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Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	17.1	square miles	0.04	5989
OHREGC	Ohio Region C Indicator 1 if in C else 0	0	dimensionless	0	1
OHREGA	Ohio Region A Indicator 1 if in A else 0	1	dimensionless	0	1
CSL1085LFP	Stream Slope 10 and 85 Longest Flow Path	16.1	feet per mi	1.53	516
LC92STOR	Percent Storage from NLCD1992	0.21	percent	0	25.35

Peak-Flow Statistics Flow Report [Peak Flow Full Model Reg A SIR2019 5018]

PIl: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	Plu	ASEp
50-percent AEP flood	877	ft ³ /s	465	1650	40.1
20-percent AEP flood	1460	ft ³ /s	809	2630	37.2
10-percent AEP flood	1920	ft ³ /s	1060	3480	37.6
4-percent AEP flood	2580	ft ³ /s	1410	4710	38.1
2-percent AEP flood	3120	ft ³ /s	1690	5760	37.8
1-percent AEP flood	3690	ft ³ /s	1980	6880	39.6
0.2-percent AEP flood	5180	ft ³ /s	2750	9750	40.3

Peak-Flow Statistics Citations

Koltun, G.F.,2019, Flood-frequency estimates for Ohio streamgages based on data through water year 2015 and techniques for estimating flood-frequency characteristics of rural, unregulated Ohio streams: U.S. Geological Survey Scientific Investigations Report 2019–5018, 25 p. (<https://dx.doi.org/10.3133/sir20195018>)

Low-Flow Statistics Parameters [Low Flow Region B 2012 5138]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	17.1	square miles	1	1250
STREAM_VARG	Streamflow Variability Index from Grid	0.69	dimensionless	0.24	1.12

Low-Flow Statistics Flow Report [Low Flow Region B 2012 5138]

PIl: Prediction Interval-Lower, Plu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE
1 Day 10 Year Low Flow	0.0463	ft^3/s	53.1
7 Day 10 Year Low Flow	0.069	ft^3/s	40
30 Day 10 Year Low Flow	0.126	ft^3/s	35.7

Statistic	Value	Unit	SE
90 Day 10 Year Low Flow	0.494	ft ³ /s	29.8

Low-Flow Statistics Citations

Koltun, G.F., and Kula, S.P.,2013, Methods for estimating selected low-flow statistics and development of annual flow-duration statistics for Ohio: U.S. Geological Survey Scientific Investigations Report 2012–5138, 195 p. (<http://pubs.usgs.gov/sir/2012/5138/>)

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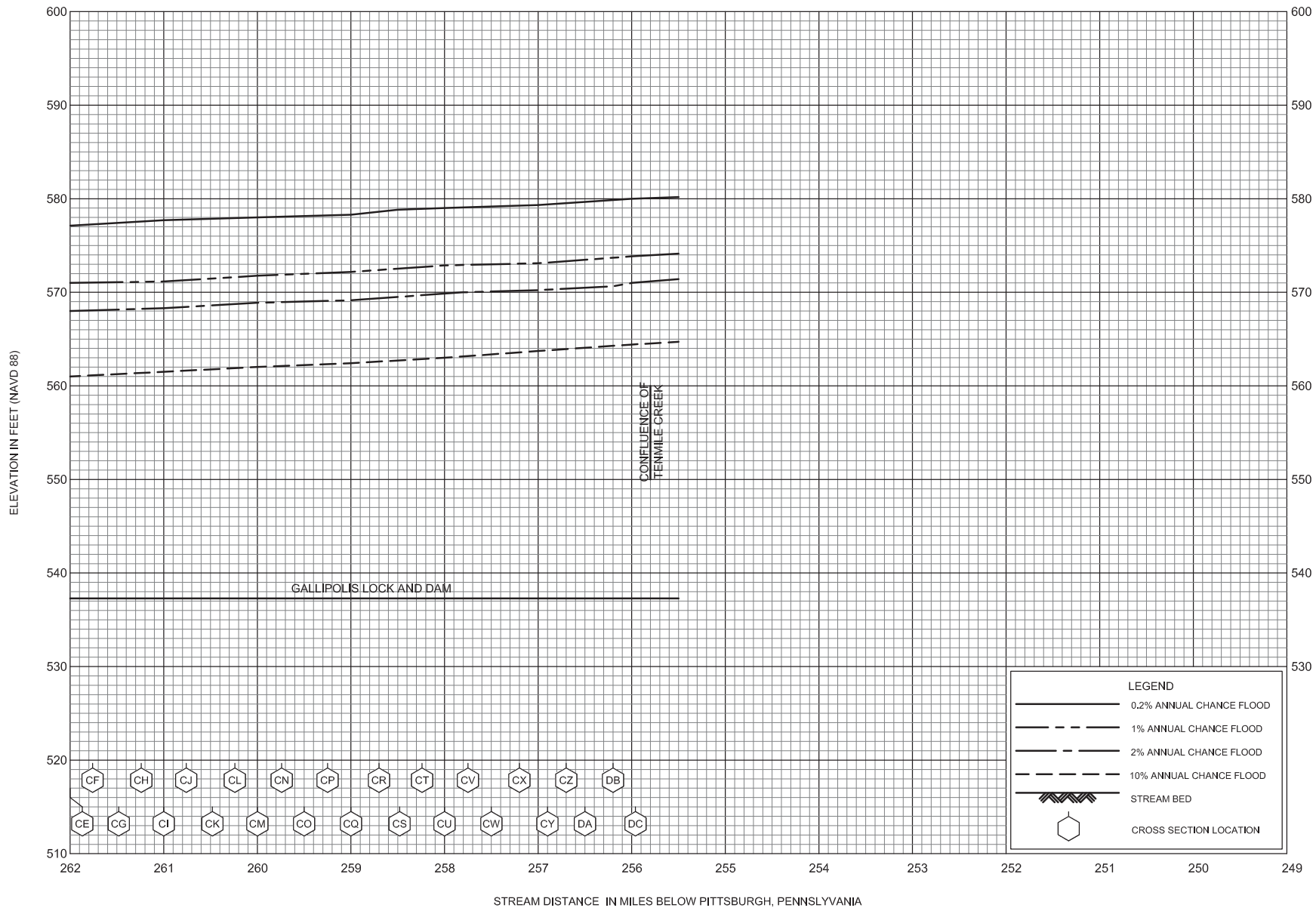
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StreamStats Services Version: 1.2.22

NSS Services Version: 2.1.2

ATTACHMENT E

FIS EXCERPT



FLOOD PROFILES

OHIO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

MASON COUNTY, WV

AND INCORPORATED AREAS

ATTACHMENT E

SETTINGS AND TOLERANCES

Sunny Day

Unsteady Flow Analysis

File Options Help

Plan: Gavin_SunnyDay Short ID: SunnyDay

Geometry File: GavinFlyAsh SunnyDay

Unsteady Flow File: FlowFile SunnyDay

Programs to Run

- ☒ Geometry Preprocessor
- ☒ Unsteady Flow Simulation
- ☐ Sediment
- ☒ Post Processor
- ☐ Floodplain Mapping

Plan Description

Sunny Day Breach

Simulation Time Window

Starting Date: 22SEP2008 Starting Time: 00:00

Ending Date: 22SEP2008 Ending Time: 03:00

Computation Settings

Computation Interval: 1 Second Hydrograph Output Interval: 1 Minute

Mapping Output Interval: 1 Minute Detailed Output Interval: 1 Minute

Project DSS Filename: g:\prj1\CWP\CHE8273E - Stingy Run FAD OM EAP Revision\

1 Storage Area Connection with breach data. 1 set to breach.
Time Step is controlled by courant condition.

Compute

HEC-RAS Unsteady Computation Options and Tolerances

General | 2D Flow Options | 1D/2D Options | Advanced Time Step Control | 1D Mixed Flow Options

1D Unsteady Flow Options

Theta [implicit weighting factor] (0.6-1.0): 1.

Theta for warm up [implicit weighting factor] (0.6-1.0): 1.

Water surface calculation tolerance [max=0.2](ft): 0.02

Storage Area elevation tolerance [max=0.2](ft): 0.02

Flow calculation tolerance [optional] (cfs):

Max error in water surface solution (Abort Tolerance)(ft): 100.

Maximum number of iterations (0-40): 20

Maximum iterations without improvement (0-40):

Wind Forces

Reference Frame: Eulerian

Drag Formulation: Hsu (1988)

Geometry Preprocessor Options

Family of Rating Curves for Internal Boundaries

- ☒ Use existing internal boundary tables when possible.
- ☐ Recompute at all internal boundaries

1D/2D Unsteady Flow Options

Number of warm up time steps (0 - 100,000): 0

Time step during warm up period (hrs): 0

Minimum time step for time slicing (hrs): 0

Maximum number of time slices: 20

Lateral Structure flow stability factor (1.0-3.0): 2.

Inline Structure flow stability factor (1.0-3.0): 1.

Weir flow submergence decay exponent (1.0-3.0): 1.

Gate flow submergence decay exponent (1.0-3.0): 1.

Gravity (ft/s^2): 32.174

1D Numerical Solution

- ☒ Finite Difference (classic HEC-RAS methodology)
 - Finite Difference Matrix Solver
 - ☒ Skyline/Gaussian (Default: faster for dendritic systems)
 - ☐ Pardiso (Optional: may be faster for large interconnected systems)
 - ☐ Finite Volume (new approach)

Number of cores to use with Pardiso solver: All Available

OK Cancel Defaults ...

100 Year

Unsteady Flow Analysis

File Options Help

Plan: Gavin_Rainy Day 100YR Short ID: RainyDay-100YR

Geometry File: GavinFlyAsh RainyDay

Unsteady Flow File: FlowFile 100YR

Programs to Run

- ☒ Geometry Preprocessor
- ☒ Unsteady Flow Simulation
- ☐ Sediment
- ☒ Post Processor
- ☐ Floodplain Mapping

Plan Description

Added inflow to Kyger Creek and Spillway
Known WSE - BC at Ohio River
Adjusted time-steps

Simulation Time Window

Starting Date: 22SEP2008 Starting Time: 00:00

Ending Date: 22SEP2008 Ending Time: 03:00

Computation Settings

Computation Interval: 1 Second Hydrograph Output Interval: 1 Minute

Mapping Output Interval: 1 Minute Detailed Output Interval: 1 Minute

Project DSS Filename: g:\prj1\CWP\CHE8273E - Stingy Run FAD OM EAP Revision\

1 Storage Area Connection with breach data. 1 set to breach.
Time Step is controlled by courant condition.

Compute

HEC-RAS Unsteady Computation Options and Tolerances

General | 2D Flow Options | 1D/2D Options | Advanced Time Step Control | 1D Mixed Flow Options

1D Unsteady Flow Options

Theta [implicit weighting factor] (0.6-1.0): 1.

Theta for warm up [implicit weighting factor] (0.6-1.0): 1.

Water surface calculation tolerance [max=0.2](ft): 0.02

Storage Area elevation tolerance [max=0.2](ft): 0.02

Flow calculation tolerance [optional] (cfs):

Max error in water surface solution (Abort Tolerance)(ft): 100.

Maximum number of iterations (0-40): 20

Maximum iterations without improvement (0-40):

Wind Forces

Reference Frame: Eulerian

Drag Formulation: Hsu (1988)

Geometry Preprocessor Options

Family of Rating Curves for Internal Boundaries

- ☒ Use existing internal boundary tables when possible.
- ☐ Recompute at all internal boundaries

1D/2D Unsteady Flow Options

Number of warm up time steps (0 - 100,000): 0

Time step during warm up period (hrs): 0

Minimum time step for time slicing (hrs): 0

Maximum number of time slices: 20

Lateral Structure flow stability factor (1.0-3.0): 2.

Inline Structure flow stability factor (1.0-3.0): 1.

Weir flow submergence decay exponent (1.0-3.0): 1.

Gate flow submergence decay exponent (1.0-3.0): 1.

Gravity (ft/s^2): 32.174

1D Numerical Solution

- ☒ Finite Difference (classic HEC-RAS methodology)
 - Finite Difference Matrix Solver
 - ☒ Skyline/Gaussian (Default: faster for dendritic systems)
 - ☐ Pardiso (Optional: may be faster for large interconnected systems)
- ☐ Finite Volume (new approach)

Number of cores to use with Pardiso solver: All Available

OK Cancel Defaults ...

PMP

Unsteady Flow Analysis

File Options Help

Plan: Gavin_Rainy Day PMP Short ID: RainyDay-PMP

Geometry File: GavinFlyAsh RainyDay

Unsteady Flow File: FlowFile PMP

Programs to Run

- ☒ Geometry Preprocessor
- ☒ Unsteady Flow Simulation
- ☐ Sediment
- ☒ Post Processor
- ☐ Floodplain Mapping

Plan Description

Added inflow to Kyger Creek and Spillway
Known WSE - BC at Ohio River
Adjusted time-steps

Simulation Time Window

Starting Date: 22SEP2008 Starting Time: 00:00
Ending Date: 22SEP2008 Ending Time: 03:00

Computation Settings

Computation Interval: 1 Second Hydrograph Output Interval: 1 Minute
Mapping Output Interval: 1 Minute Detailed Output Interval: 1 Minute
Project DSS Filename: g:\prj1\CWP\CHE8273E - Stingy Run FAD OM EAP Revision

1 Storage Area Connection with breach data. 1 set to breach.
Time Step is controlled by courant condition.

Compute

HEC-RAS Unsteady Computation Options and Tolerances

General | 2D Flow Options | 1D/2D Options | Advanced Time Step Control | 1D Mixed Flow Options

1D Unsteady Flow Options

Theta [implicit weighting factor] (0.6-1.0): 1.
Theta for warm up [implicit weighting factor] (0.6-1.0): 1.
Water surface calculation tolerance [max=0.2](ft): 0.02
Storage Area elevation tolerance [max=0.2](ft): 0.02
Flow calculation tolerance [optional] (cfs):
Max error in water surface solution (Abort Tolerance)(ft): 100.
Maximum number of iterations (0-40): 20
Maximum iterations without improvement (0-40):

1D/2D Unsteady Flow Options

Number of warm up time steps (0 - 100,000): 0
Time step during warm up period (hrs): 0
Minimum time step for time slicing (hrs): 0
Maximum number of time slices: 20
Lateral Structure flow stability factor (1.0-3.0): 2.
Inline Structure flow stability factor (1.0-3.0): 1.
Weir flow submergence decay exponent (1.0-3.0): 1.
Gate flow submergence decay exponent (1.0-3.0): 1.
Gravity (ft/s^2): 32.174

Wind Forces

Reference Frame: Eulerian
Drag Formulation: Hsu (1988)

Geometry Preprocessor Options

Family of Rating Curves for Internal Boundaries
☒ Use existing internal boundary tables when possible.
☐ Recompute at all internal boundaries

1D Numerical Solution

☒ Finite Difference (classic HEC-RAS methodology)
Finite Difference Matrix Solver
☒ Skyline/Gaussian (Default: faster for dendritic systems)
☐ Pardiso (Optional: may be faster for large interconnected systems)
☐ Finite Volume (new approach)
Number of cores to use with Pardiso solver: All Available

OK Cancel Defaults ...

Appendix B

Training, Exercising, Updating, and Posting the EAP

B - 1.0 TRAINING

The EAP Coordinator (Plant Landfill Process Owner) shall be thoroughly familiar with the Emergency Action Plan (EAP) and the actions that may be required under the EAP.

The EAP Coordinator shall be responsible for training alternate Gavin staff to complete the Emergency Response Leader duties in the event the Incident Commander is not available during a period of emergency as described in this EAP.

In addition, the EAP Coordinator shall be responsible for training dam maintenance staff and other Gavin staff in the actions and responses that they may be called upon to complete in the event of an emergency at the dam.

B - 2.0 EXERCISING

The EAP Coordinator shall plan and convene an emergency exercise one-time each year. The exercise shall include appropriate administrative and maintenance personnel. Response organizations shall be invited to participate, however, their unavailability shall not be cause for canceling the exercise. The exercise shall be performed to test the procedures and determine appropriate actions in the event of an emergency.

At the conclusion of the exercise, the personnel shall review the exercise and prepare a written summary of lessons learned and items that can be improved upon.

B - 3.0 UPDATING THE EAP

The EAP Coordinator shall be responsible for keeping the EAP up to date. The EAP Coordinator shall review the EAP at least annually for changes that may have taken place such as:

- Names of Gavin staff specifically called out in the EAP.
- Names of the County Sheriff and local authorities.
- Alterations to the dam embankments and/or outlet structures.
- Additions or deletions to the list of Emergency Supplies and Resources.

In addition, the EAP shall be updated if it is found to require modification as a result of an actual emergency situation.

Upon completion of each annual review, the EAP Coordinator shall complete the form on the following page to document the review and update.

Gavin shall retain a professional engineer in accordance with 40 CFR 257.73 on a periodic basis (not to exceed five years) to review the EAP to assure that it remains viable in the event that an emergency should occur at the dam. At a minimum, the Professional Engineer's activities should include:

- A site visit to inspect the dam and appurtenances and to review staffing and emergency responses by Gavin personnel.
- Review of the written plan.
- Confirm that Emergency Supplies and Resources are current.
- Complete any necessary updates to the EAP and submit it to the Gavin Power EAP Coordinator for review and distribution.

B - 4.0 POSTING THE EAP

The EAP Coordinator shall be responsible for maintaining one copy of the EAP in the plant office and in the Gavin Power operating record in accordance with 40 CFR257.105(f)(6) and for distribution of one copy of the final EAP, as approved by the ODNR, to each of the following organizations:

Ohio Department of Natural Resources

Gallia County Engineer's Office

Gallia County Emergency Management Agency

Gallia County Sheriff

In addition to the above distribution of the EAP, the Notification Flowchart (**Exhibit 1, Exhibit 2, and Exhibit 3**) shall be posted in a public location in the Gavin offices.

GAVIN POWER PLANT FLY ASH DAM
EMERGENCY ACTION PLAN
PLAN REVIEW AND UPDATE RECORD

The EAP must be reviewed and updated (if necessary) annually for accuracy of information provided, particularly to keep contact names and telephone numbers up to date. At the conclusion of each review and update the changes shall be indicated in the following table.

Date Review Completed	Name and Title of Reviewer	Changes Made

If changes to contact information are made, copies of the revised sheets shall be provided to all holders of copies of the EAP.

Appendix C

Glossary of Terms

Abutment That part of the valley side against which the dam is constructed. The left and right abutments of dams are defined with the observer looking downstream from the dam.

Acre-foot A unit of volumetric measure that would cover 1 acre to a depth of 1 foot. One acre-foot is equal to 43,560 cubic feet or 325,850 gallons.

Appurtenant Structures The structures or machinery auxiliary to dams which are built to operate and maintain dams; such as outlet works, spillway, powerhouse, tunnels, etc.

Berm A nearly horizontal step (bench) in the upstream or downstream sloping face of the dam.

Boil A disruption of the soil surface due to water discharging from below the surface. Eroded soil may be deposited in the form of a ring (miniature volcano) around the disruption.

Breach An opening through the dam that allows draining of the reservoir. A controlled breach is an intentionally constructed opening. An uncontrolled breach is an unintended failure of the dam.

Conduit A closed channel (round pipe or rectangular box) that conveys water through, around, or under the dam.

Control section A usually level segment in the profile of an open channel spillway above which water in the reservoir discharges through the spillway.

Crest of Dam The crown of an overflow section of the dam. In the United States, the term "crest of dam" is often used when "top of dam" is intended. To avoid confusion, the terms crest of spillway and top of dam should be used in referring to the overflow section and dam proper, respectively.

Cross section A slice through the dam showing elevation vertically and direction of natural water flow horizontally from left to right. Also, a slice through a spillway showing elevation vertically and left and right sides of the spillway looking downstream.

Cutoff Wall A wall of impervious material (e.g., concrete, asphaltic concrete, steel sheet piling) built into the foundation to reduce seepage under the dam.

Dam An artificial barrier generally constructed across a watercourse for the purpose of impounding or diverting water.

Dam failure The uncontrolled release of a dam's impounded water.

Dam Operator The person(s) or unit(s) of government with responsibility for the operation and maintenance of dam.

Drain, toe or foundation, or blanket A water collection system of sand and gravel and typically pipes along the downstream portion of the dam to collect seepage and convey it to a safe outlet.

Drainage area (watershed) The geographic area on which rainfall flows into the dam.

Drawdown The lowering or releasing of the water level in a reservoir over time or the volume lowered or released over a particular period of time.

Embankment Fill material, usually earth or rock, placed with sloping sides.

Emergency A condition that develops unexpectedly, endangers the structural integrity of the dam and/or downstream human life and property, and requires immediate action.

Emergency Action Plan (EAP)

A formal document identifying potential emergency conditions that may occur at the dam and specifying preplanned actions to minimize potential failure of the dam or minimize failure consequences including loss of life, property damage, and environmental impacts.

Evacuation map

A map showing the geographic area downstream of a dam that should be evacuated if it is threatened to be flooded by a breach of the dam or other large discharge.

Failure

An incident resulting in the uncontrolled release of water from a dam.

Filter

The layers of sand and gravel in a drain that allow seepage through an embankment to discharge into the drain without eroding the embankment soil.

Foundation of Dam

The natural material on which the dam structure is placed.

Freeboard

Vertical distance between a stated water level in the reservoir and the top of dam.

Gate, slide or sluice, or regulating

An operable, watertight valve to manage the discharge of water from the dam.

Groin

The area along the intersection of the face of a dam and the abutment.

Hazard classification

A system that categorizes dams (high, significant, or low) according to the degree of their potential to create adverse incremental consequences such as loss of life, property damage, or environmental impacts of a failure or mis-operation of a dam.

Height, dam

The vertical distance between the lowest point along the top of the dam and the lowest point at the downstream toe, which usually occurs in the bed of the outlet channel.

Hydrograph, inflow or outflow, or breach

A graphical representation of either the flow rate or flow depth at a specific point above or below the dam over time for a specific flood occurrence.

Incident Commander

The highest predetermined official available at the scene of an emergency situation.

Instrumentation

An arrangement of devices installed into or near dams that provide measurements to evaluate the structural behavior and other performance parameters of the dam and appurtenant structures.

Notification

To immediately inform appropriate individuals, organizations, or agencies about a potentially emergency situation so they can initiate appropriate actions.

Piping

The progressive destruction of an embankment or embankment foundation by internal erosion of the soil by seepage flows.

Primary Spillway (Principal Spillway)

The principal or first used spillway during flood flows.

Probable Maximum Precipitation (PMP) or Flood (PMF)

The theoretically greatest precipitation or resulting flood that is meteorologically feasible for a given duration over a specific drainage area at a particular geographical location.

Reservoir

The body of water is impounded or potentially impounded by the dam.

Riprap

A layer of large rock, precast blocks, or other suitable material, generally placed on an embankment or along a watercourse as protection against wave action, erosion, or scour.

Risk

A measure of the likelihood and severity of an adverse consequence.

Scarp

The nearly vertical, exposed earth surface created at the upper edge of a slide or a breached area along the upstream slope of an earthen embankment.

Seepage

The natural movement of water through the embankment, foundation, or abutments of the dam.

Slide

The movement of a mass of earth down a slope on the embankment or abutment of the dam.

Spillway (auxiliary or emergency)

The appurtenant structure that provides the controlled conveyance of excess water through, over, or around the dam.

Spillway capacity

The maximum discharge the spillway can safely convey with the reservoir at the maximum design elevation.

Spillway crest

The lowest level at which reservoir water can flow into the spillway.

Stilling Basin

A basin constructed to dissipate the energy of fast-flowing water, e.g. from a spillway or bottom outlet, and to protect the river bed from erosion.

Stoplogs

Logs or timbers, steel or concrete beams placed on top of each other with their ends held in guides on each side of a channel or conduit.

Storage

The retention of water or delay in runoff either by planned operation, as in a reservoir, or by temporarily filling the overflow areas, as in the progression of a flood crest through a natural stream channel.

Tailwater

The body of water immediately downstream of the embankment at a specific point in time.

Toe of dam

The junction of the upstream or downstream face of an embankment with the ground surface.

Top of dam (crest of dam)

The elevation of the uppermost surface of an embankment which can safely impound water behind the dam.

Trash Rack

A structure of metal or concrete bars located in the waterway at an intake to prevent the entry of floating or submerged debris.

Valve

In general, a device fitted to a pipeline or orifice in which the closure member is either rotated or moved transversely or longitudinally in the waterway so as to control or stop the flow.

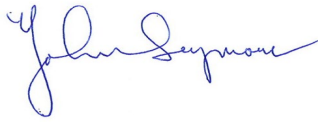
Weir

A low dam or wall built across a stream to raise the upstream water level. It is termed a fixed-crest weir when uncontrolled. A structure built across a stream or channel for the purpose of measuring flow. Sometimes described as a measuring weir or gauging weir. Types of weirs include broad crested weirs, sharp-crested weirs, Ogee weirs, and V-notched weirs.

Appendix D
Preparation and Approval of EAP

D - 1.0 PLAN PREPARATION

This Emergency Action Plan (EAP) was prepared by Geosyntec Consultants, Chicago, Illinois for Gavin Power, LLC, Gavin Power Plant's Fly Ash Dam and within Gallia County, Ohio. The EAP was prepared based on information provided by Gavin, information obtained from Ohio Department of Natural Resources (ODNR) inspection reports, and modeling of flooding conditions as prepared by Geosyntec Consultants. The EAP was prepared to meet the requirements of the ODNR for an EAP as provided in Ohio Administrative Code (OAC) 1501:21-15- 07 and 1501:21-21-04 and as further detailed in ODNR's EAP Guidelines.



August 26, 2026

(Signature)

(Date)

John Seymour, P.E. (OH)
Senior Principal
Geosyntec Consultants



August 26, 2026

(Signature)

(Date)

Rishab Mahajan, P.E. (GA)
Principal
Geosyntec Consultants

D - 2.0 OWNER (GAVIN PLANT) APPROVAL

This EAP for Gavin Power Plant FAD was prepared under my direction as Plant Manager for the Gavin facility. By signing this Approval, I certify that I have read and understand the EAP and the actions that may be required under it, and the information contained herein is accurate as of the date of my signature. In accordance with Section 1501:21-21-04 of the Ohio Administrative Code, I am certifying that I understand my responsibilities as a dam owner for the safe operation of the Fly Ash Dam (ODNR Dam File # 8721-009) for executing this EAP. I also understand that this plan must be reviewed and updated annually.

C. Garrett Watterson
(Signature)

08-27-26
(Date)

C. Garrett Watterson
Gavin Power Plant Manager

D - 3.0 OHIO DNR APPROVAL

This EAP shall be submitted to the ODNR for review and approval. Upon receipt of written approval from the ODNR, a copy of ODNR's approval letter shall be attached in this EAP following this page and a copy of the approval letter shall be forwarded to each holder of a copy of the EAP.

This EAP has been distributed to those individuals listed below:

- The distribution list should include- Gavin Power, LLC, ODNR Dam Safety Program, County EMA Office, Person or Consultant Who Prepared EAP, and Others
- The “Date” will be completed by ODNR Dam Safety upon approval of the EAP.
- Copies of the approved EAP will be sent by ODNR Dam Safety Program to the Dam Owner, County EMA Director, and the person or consultant who prepared this EAP.
- Future updated copies of the EAP are to be sent by the Dam Owner to all listed below.

	Name & Title	Organization	Address	Date
1.	On-Site Incident Commander	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
2.	Garrett Watterson , Plant Manager	Gavin Power LLC	7398 OH-7, Cheshire, OH 45620	
3.	Taylor Huffman, Plant Environmental Staff	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
4.	Sam Sterns, Safety Supervisor	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
5.	Andy Davis, Operation Manager	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
6.	Jacob Errett, Maintenance Manager	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
7.	Matt Mooney, Strategic Business Manager	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
8.	Rich Fuller , Landfill Process Owner	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
9.	Dave Caldwell, Material Handling Process Owner	Gavin Power LLC	7397 OH-7, Cheshire, OH 45620	
10.	Patrick Blanchard, Corporate Environmental (O&M - CAMS/eSPARC)	CAMs	7397 OH-7, Cheshire, OH 45620	
11.	Jody Thacker, Corporate Environmental (O&M - CAMS/eSPARC)	CAMs	7397 OH-7, Cheshire, OH 45620	
12.	Lisa Carty , Corporate Environmental (Kindle Energy)	Kindle Energy	7397 OH-7, Cheshire, OH 45620	
13.	Grace Kurdian, Corporate Environmental (Kindle Energy)	Kindle Energy	7397 OH-7, Cheshire, OH 45620	

	Name & Title	Organization	Address	Date
14.	Tim Miller, Gallia County EMA & LEPC	Gallia County EMA & LEPC	1191 State Route 160, Gallipolis, OH 45631	
15.	Tye Schwall , OVEC Environmental Manager	Ohio Valley Electric, Inc.	5758 OH-7, Cheshire, OH 45620	
16.	Gallia County Sheriff	Gallia County Sheriff	18 Locust St, Gallipolis, OH 45631	
17.	Middleport Fire Department	Middleport Fire Department	286 Race St, Middleport, OH 45760	
18.	ODNR Division of Water	ODNR Division of Water	2045 Morse Rd Building B, Columbus, OH 43229	
19.	ODNR Division of Water Resources – Dam Safety Program	ODNR Division of Water Resources – Dam Safety Program	2046 Morse Rd Building B, Columbus, OH 43229	
20.	Gallia County Health Department	Gallia County Health Department	499 Jackson Pike D, Gallipolis, OH 45631	
21.	Ohio Environmental Protection Agency (EPA)	Ohio Environmental Protection Agency (EPA)	50 W Town St UNIT 700, Columbus, OH 43215	
22.	Ohio State Emergency Response Commission	Ohio State Emergency Response Commission	4675 Homer Ohio Lane, Groveport, OH 43125	
23.	National Response Center	National Response Center	National Response Center	
24.	John Seymour	Geosyntec Consultants, Inc.	3011 West Grand Blvd., Suite 2300, Detroit, Michigan 48202	
25.	Rishab Mahajan	Geosyntec Consultants, Inc.	1420 Kensington Road, Suite 103, Oak Brook, Illinois 60523	