Former Mt. Tom Station Power Plant
200 Northampton Street
Holyoke, Massachusetts

# Initial Hazard Classification Bottom Ash Basin A

## Mt. Tom Generating Company LLC
## Houston, Texas

May 2026

# Certification

**CCR Unit:** Mt. Tom Generating Company LLC; former Mt. Tom Generating Station; Bottom Ash Basin A

I hereby certify, to the best of my knowledge, information, and belief:

1) That the information contained in this certification is prepared in accordance with the accepted practice of engineering; and
2) That the initial hazard potential classification assessment of the Tom Generating Station Bottom Ash Basin A meets the requirements specified in 40 CFR § 257.73(a)(2).


Printed Name Daniel R Buttrick

Date May 7, 2026

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## Figures



## Appendices



*\\tighebond.com\data\data\projects\G\G0682 GDF Mt. Tom\037 - Post Closure Compliance & CCR\06 - CCR\Hazard Classification\Final\Bottom Ash Basin A\Hazard Potential Classification - Bottom Ash Basin A.docx*

# SECTION 1 | Introduction

## 1.1 Background

On behalf of Mt. Tom Generating Company LLC ("MTGC"), a wholly owned indirect subsidiary of ENGIE North America, Inc., Tighe & Bond, Inc. ("Tighe & Bond") has prepared this initial hazard potential classification for the Bottom Ash Basin A associated with the Environmental Protection Agency ("EPA") Coal Combustion Residuals ("CCR") Final Rule for Legacy CCR Surface Impoundments ("LSI") and CCR Management Units ("CCRMU"), for the former MTGC facility (the "site"), located at 200 Northampton Street in Holyoke, Massachusetts in accordance with 40 CFR §257.73(a)(2).

The Basin known as "Bottom Ash Basin A" is shown on Figure 1 (Site Location map) and Figure 2 (Site Plan) and is a legacy CCR surface impoundment as defined by 40 CFR 257.53.

The width (east to west) of Bottom Ash Basin A varies from 300 feet to 360 feet, and it is approximately 360 feet long (north to south) with a maximum depth of approximately 15 feet, and a maximum structural height (compared to the elevation at the downstream toe) of approximately 12.5 feet. The maximum storage of the basin is approximately 29.3 acre-feet. The northern side of the impoundment is partially incised, sharing an embankment with the historical Coal Pile Sump Area and the Special Basin. There is currently no inflow to the basin other than direct precipitation over the basin surface area and immediately adjacent edges of the embankment crest, and the basin is generally dry other than immediately following rainfall events until rainwater infiltrates into the basin. There are no valves or diversions that could contribute flow to the basin other than direct precipitation, nor valves or diversions that would remove water from the basin.

## 1.2 Purpose

The purpose of this evaluation is to determine the hazard potential classification based on the potential consequences associated with a hypothetical failure. Hazard potential classifications relate to the consequences of failure and are independent of the structure's condition or anticipated performance.

## 1.3 Regulations

The definitions section of the EPA Final CCR Rule, 40 CFR § 257.53, states:

> *Hazard potential classification means the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances. The hazardous potential classifications include high hazard potential CCR surface impoundment, significant hazard potential CCR surface impoundment, and low hazard potential CCR surface impoundment, which terms mean:*
>
> 1) *High hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.*
> 2) *Significant hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.*

3) *Low hazard potential CCR surface impoundment means a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.*

§ 257.73 (a) states:

*(2) Periodic hazard potential classification assessments.*

*(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in paragraph (f) of this section. The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.*

*(ii) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in paragraph (a)(2)(i) of this section was conducted in accordance with the requirements of this section.*

This report contains supporting documentation for the initial hazard potential classification assessment. The hazard potential classification for this structure was determined by observation of site conditions, review of available mapping, and use of a publicly available dam breach tool.

# SECTION 2 | Basis of Rating

## 2.1 Background

MTGC is located in Hampden County, Massachusetts. The former plant is located adjacent to the Connecticut River approximately 15 miles north of Springfield, MA. Bottom Ash Basin A is located south of the Special Basin and former coal stockpile and runoff area, sharing an embankment with these two areas, and is adjacent to the Connecticut River. Since the decommissioning of the plant, the basin does not receive flow from outside sources, limiting accumulation of water to rainwater directly falling into the basin. There is no functioning low-level-outlet associated with the basin.

## 2.2 Potential Failure Scenarios

Bottom Ash Basin A has four potential failure directions:

- **To the north.** Bottom Ash Basin A is adjacent to the Special Basin to the northeast and the former coal stockpile and runoff area to the northwest. Typically, Bottom Ash Basin A and the Special Basin do not impound water. Minor amounts of water occasionally accumulate in the coal stockpile runoff area. With all three areas having a means of filling, which is limited to rainwater falling into the basins, water levels in the two basins are anticipated to rise and fall at a similar rate. Additionally, the maximum pool elevations for the basins are similar to each other. Thus, since there is no water level differential driving failure, Bottom Ash Basin A failure to the north is not plausible.
- **To the east.** A breach to the east would result in release of flow and possibly CCR into the Connecticut River.
- **To the south**. Ground surface elevation to the south is above the top of the embankment.
- **To the west.** Bottom Ash Basin A is located to the east of the former facility railroad sidings. This area is slightly below the crest elevation of the basin in areas. A breach to the west would discharge into this area and be contained in the area around the sidings.

Breaches to the north are not plausible and a breach to the south is not possible; thus breaches in these directions are not considered further. A breach to the west would be contained without potential for loss of life and would cause no environmental damage. Significant damage to the railroad sidings is not expected; however, even if they were, the sidings are no longer used. As such, economic loss is not expected.

The more likely failure scenario with potential impact is to the east into the Connecticut River. Tighe & Bond modeled a breach into the Connecticut River using DSS WISE, an automated web-based two-dimensional dam break flood modeling program. The breach was modeled with Bottom Ash Basin A at full pool at time of failure. The DSS WISE (Flood Simulation Report (Appendix A) indicates that the peak flood wave will reach the Connecticut River nearly instantaneously but will result in a low surge of water at the point of discharge. Loss of life and economic loss would not be expected. Environmental losses would be limited to the embankment material being discharged into the river, where it would be expected to settle and could be mechanically retrieved. The quantity of CCR expected to be discharged into the river is limited since the residual CCR remaining in the basin is vegetated.

In summary, of the four potential failure directions, none include probable loss of life or economic damage and only one would have the potential for low-level environmental damage.

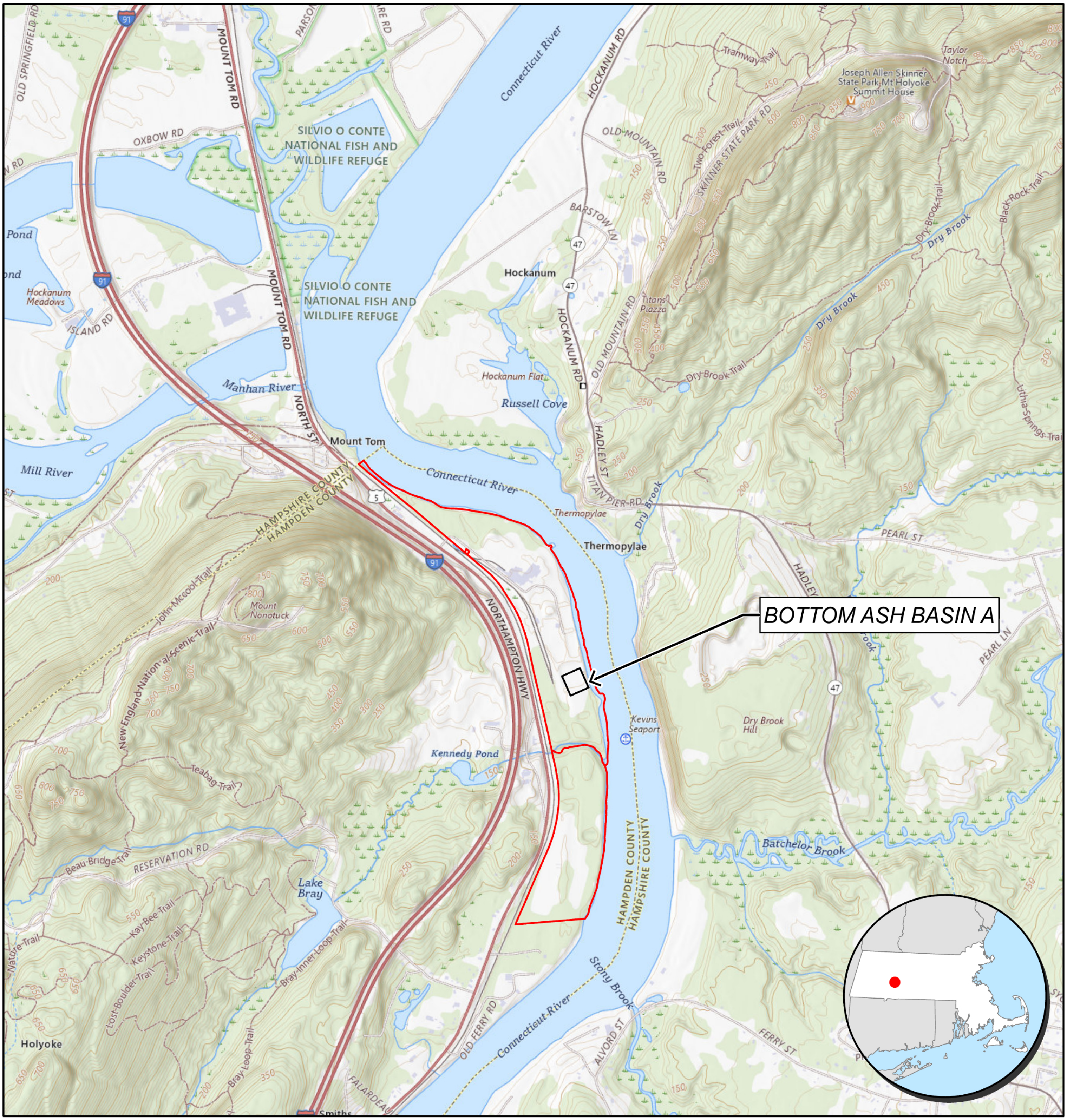
## 2.3 Hazard Classification

Findings of this review and assessment demonstrate that a breach of the impoundment results in no probable loss of human life or economic loss and low levels of environmental losses. It is Tighe & Bond's opinion that the impoundment meets the definition for a low hazard potential CCR surface impoundment (as defined in the CCR Rule §257.53).

# Figures

Former Mt. Tom Station Power Plant
200 Northampton Street
Holyoke, Massachusetts

**FIGURE 1**
SITE LOCATION
*January 2026*




Property Boundary

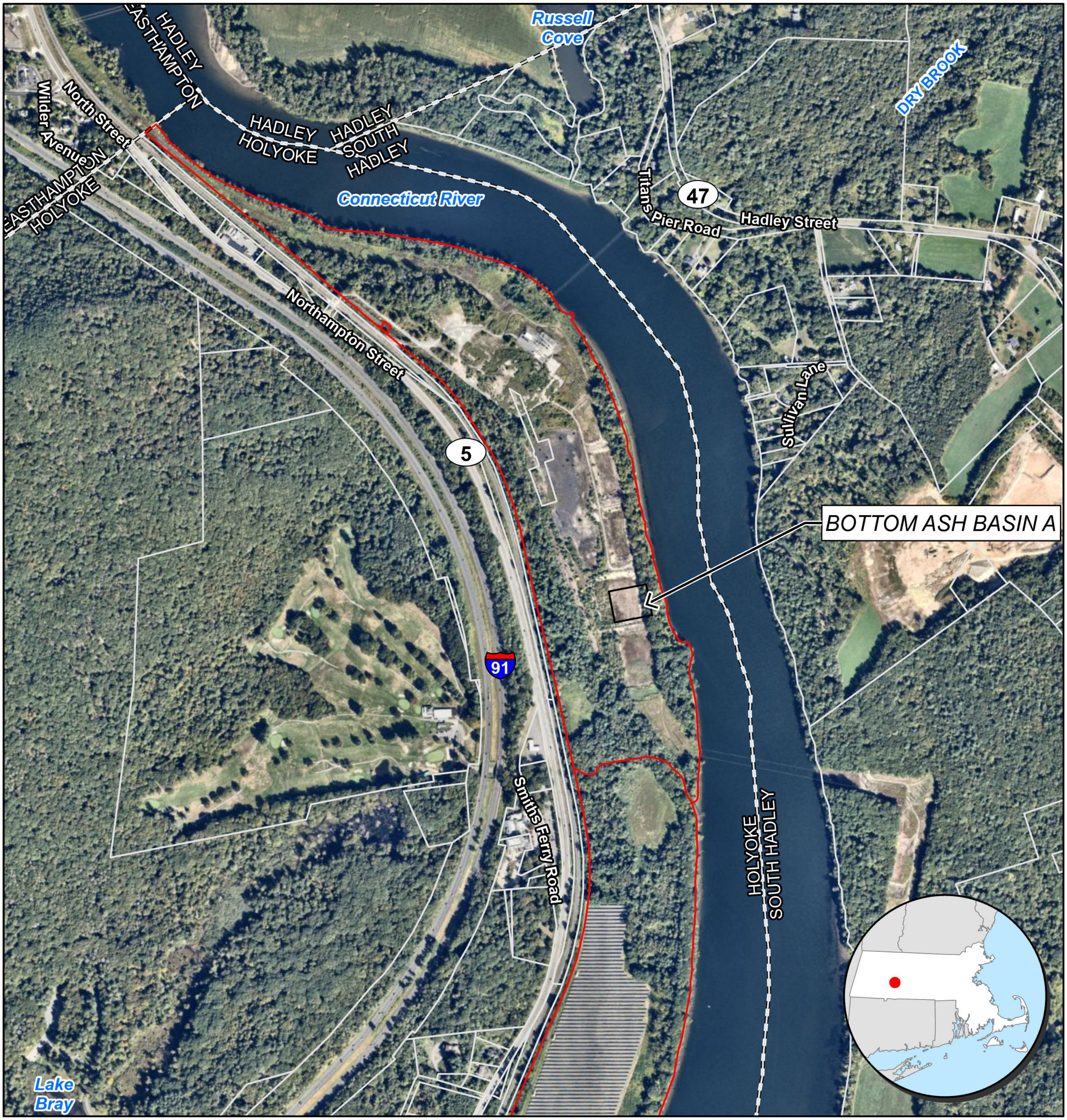
1:24,000
0 1,000 2,000
Feet

N

Based on USGS The National Map Topo Basemap.
Contour Interval Equals 10 Feet.
Circles indicate 500-foot and half-mile radii.

Tighe&Bond

**FIGURE 2**
SITE PLAN
*March 2026*




Property Boundary
Parcel Boundary
Municipal Boundary

N
1:10,800
0 450 900
Feet

Based on latest Nearmap Imagery.

Tighe & Bond

Tighe & Bond

# Appendix A:
# Model Output

FEMA

# DSS-WISE™ Web

## FLOOD SIMULATION REPORT

Breach of Bottom Ash Basin "A"

Reservoir-type, complete breach

April 9, 2026

DSS-WISE Web Simulation #111232

**DSS-WISE Web Contact:**
admin@dsswiseweb.ncche.olemiss.edu

National Center for Computational Hydroscience and Engineering (NCCHE)

The University of Mississippi

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# 1.0 Overview

The Decision Support System for Water Infrastructure Security (DSS-WISE™) is an integrated software package combining 2D numerical flood modeling capabilities with a series of GIS-based decision support tools. It was developed by the National Center for Computational Hydroscience and Engineering (NCCHE) at the University of Mississippi and was initiated by the US Department of Homeland Security (DHS) Science and Technology Directorate through the Southeast Region Research Initiative (SERRI) Program.

A simplified, and fully automated, version of the DSS-WISE™ software suite (DSS-WISE™ Lite Ver 1.0) was developed on behalf of the US Army Corps of Engineers (USACE) Critical Infrastructure Protection and Resilience (CIPR) Program and the DHS Office of Infrastructure Protection. This simplified dam break flood modeling capability was available to interested parties through the Dams Sector Analysis Tool (DSAT) secure web portal until November 2014. An updated version with more features was developed on behalf of the Federal Emergency Management Agency (FEMA) and is available at: https://dsswiseweb.ncche.olemiss.edu

The DSS-WISE™ Lite software suite, running on NCCHE servers, automatically processes input files for dam-break modeling scenarios submitted by a user. DSS-WISE™ Lite further simplifies simulations by making several general overarching assumptions in an effort to streamline data preparation and computations.

The results produced by this simplified dam-break flood simulation tool represent a rough approximation. They are not intended to replace more detailed flood inundation modeling and mapping products or capabilities developed by hydraulic and hydrologic engineers and GIS professionals.

The user is, therefore, warned that professional engineering judgment should be used in the interpretation of the results generated by this simplified and automated dam-break flood analysis.

To learn more about DSS-WISE™ and DSS-WISE™ Web visit us at: https://dsswiseweb.ncche.olemiss.edu

### 1.0.1 Disclaimer

The National Center for Computational Hydroscience and Engineering (NCCHE), The University of Mississippi, makes no representations pertaining to the suitability of the results provided herein for any purpose whatsoever. All content contained herein is provided "as is" and is not presented with any warranty of any form. NCCHE hereby disclaims all conditions and warranties in regard to the content, including but not limited to any and all conditions of merchantability and implied warranties, suitability for a particular purpose or purposes, non-infringement and title. In no event shall NCCHE be liable for any indirect, special, consequential or exemplary damages or any damages whatsoever, including but not limited to the loss of data, use or profits, without regard to the form of any action, including but not limited to negligence or other tortious actions that arise out of or in connection with the copying, display or use of the content provided herein.

### 1.0.2 Elevation Datum

All reported elevations use the North American Vertical Datum of 1988 (NAVD 88).

# 2.0 Modeling Parameters and Conditions

## 2.1 Project Information

| | |
|---|---|
| Project Name: | Breach of Bottom Ash Basin "A" |
| Scenario Name: | Reservoir-type, complete breach |
| Scenario Description: | 1 active reservoir 1 active impounding structure reservoir-type, complete breach of Dam 1 |
| User e-mail: | jmorin@tighebond.com |
| Group: | MASSACHUSETTS |

## 2.2 Simulation Parameters

| | |
|---|---|
| Domain buffer distance (miles): | 5.0 |
| Simulation cell size (ft): | 29.9 |
| Simulation duration requested (days): | 10 |

## 2.3 Bridge(s) to be Removed

Number of Bridges: 0

## 2.4 User-Drawn Levees

Number of User-Drawn Levees: 1

| | |
|---|---|
| Levee Name: | Levee 1 |
| Start Elevation (ft): | 125.0 |
| End Elevation (ft): | 125.0 |
| Width (ft): | 4.0 |
| Length (ft): | 980.0 |

# 2.5 Reservoir System Characteristics

### 2.5.1 System Summary

| | |
|---|---|
| Number of Reservoirs: | 1 |
| Number of Impounding Structures: | 1 |

### 2.5.2 Reservoir — Bottom Ash Basin "A"

**Reservoir Characteristics**

| | |
|---|---|
| Selected Reservoir Point (Latitude/Longitude): | 42.2771078159/-72.6025570823 |
| Pool Elevation @ Max Storage (ft): | 121.5 |
| Maximum Storage Volume (ac-ft): | 29.3 |
| Pool Elevation @ Normal Storage (ft): | 121.5 |
| Normal Storage Volume (ac-ft): | 29.3 |
| Pool Elevation @ Failure (ft): | 121.5 |
| Failure Storage Volume (ac-ft): | 29.3 |

**Associated Impounding Structures (1)**

**Structure — Dam 1**

| | |
|---|---|
| Structure Type: | Embankment |
| Hydraulic Height (ft): | 14.5 |
| Crest Elevation (ft): | 121.5 |
| Length (ft): | 308.65454023 |

# 2.6 Breach Conditions

**Failure Conditions**

| | |
|---|---|
| Structure Name: | Dam 1 |
| Structure Type: | dam |
| Failure Mode: | Total Breach |
| Breach Width (ft): | |
| Breach Location (Latitude/Longitude): | 42.2772033250/-72.6020381332 |

# 3.0 Automated Data Preparation and Job Flow Summary

## 3.1 Job Flow Summary

1. Prepare Digital Elevation Model (DEM) and Land Use/Land Cover (LULC) tiles for the Area of Interest (AOI) based on requested cellsize and maximum downstream distance.
2. Burn U.S. Army Corps of Engineers (USACE) levee lines and group-specific levee lines (if any) within the AOI, as well as any user-drawn levees into the DEM.
3. Assign Manning's coefficients based on LULC classifications.
4. Validate user provided simulation input parameters.
5. Remove user identified bridges from the DEM.
6. Estimate reservoir bathymetry.
7. Extend impounding structures if the specified reservoir level cannot be contained.
8. Fill reservoir to specified failure elevation.
9. Prepare boundary condition and all input data for simulation.

## 3.2 Reservoir Bathymetry and Filling

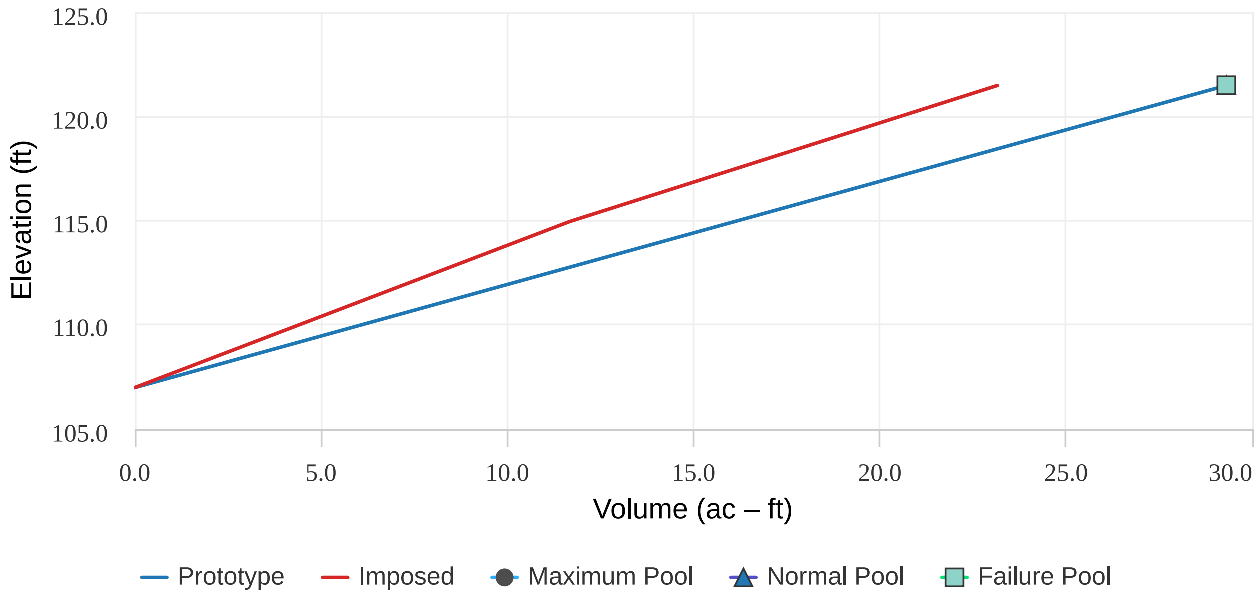



**Figure 1: Stage-Volume Curve for Reservoir: Bottom Ash Basin "A".**

**Prototype:** Theoretical cubic Hermite spline curve generated from user-provided reservoir elevation and volume information.

**Imposed:** Measured from reservoir bathymetry after filling to the failure elevation.

The reservoir water surface was detected to be in the DEM, so bathymetry estimation was performed using the prototype stage–volume curve shown above.

User-given Storage Volume at Failure (ac-ft): **29.3**
Imposed Storage Volume at Failure (ac-ft): **23.2**
After filling to the failure elevation, the imposed reservoir volume matched **79.0%** of the prototype volume.

## 3.3 Data Sources

### 3.3.1 1. Digital Elevation Models

| | |
|---|---|
| Sources: | USGS/2, USGS/1, USGS/13, USGS/19, USGS/1M |
| Resolutions: | 2, 1, 1/3, 1/9 arc-second; 1 m; other available group DEM |
| Vertical Datum: | NAVD88 |
| Horizontal Datum: | NAD83 |

### 3.3.2 2. National Land Use/Land Cover Data

| | |
|---|---|
| Sources: | NLCD/2024 |
| Resolution: | 30 m |

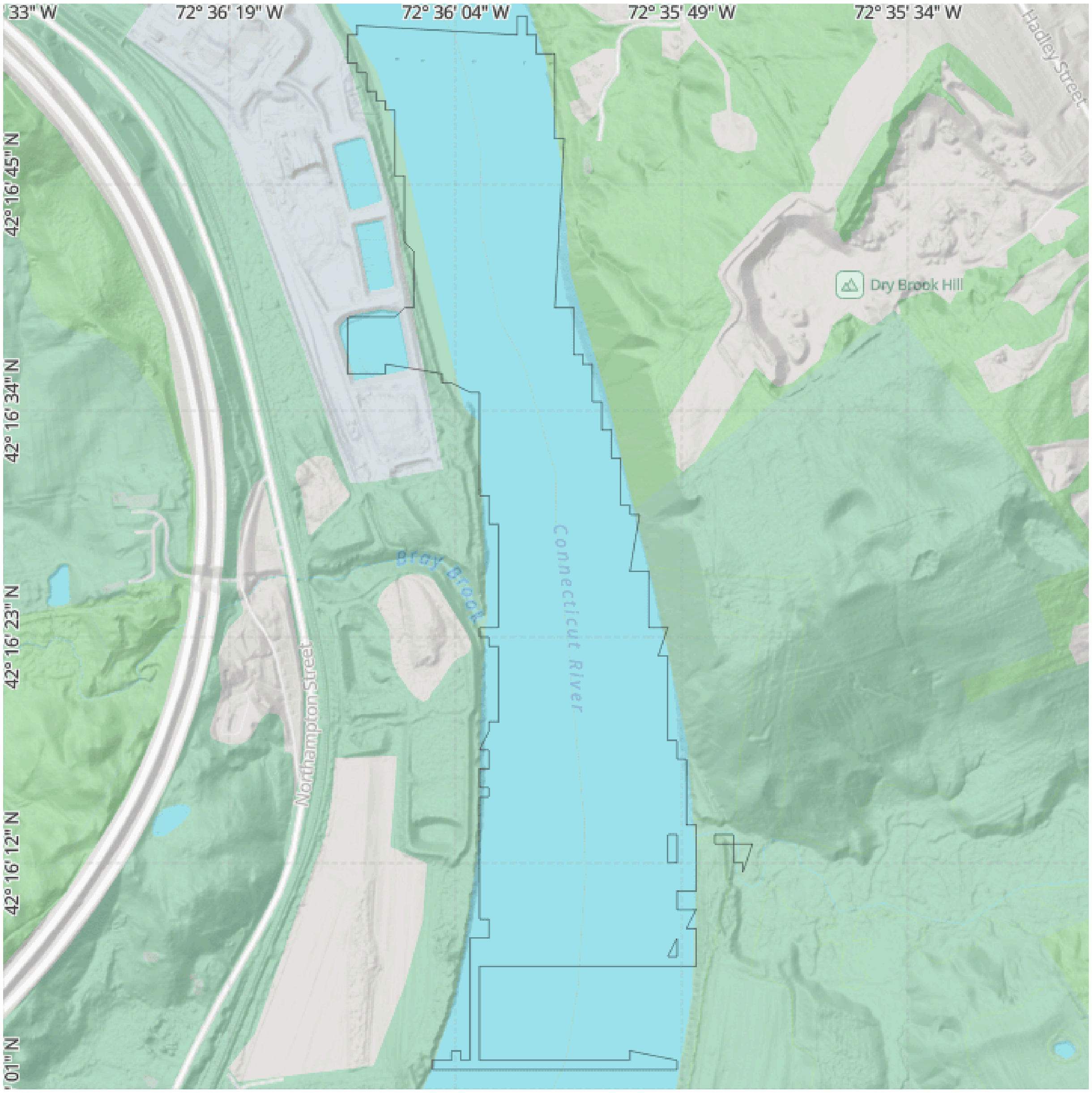
### 3.3.3 3. National Levee Database

| | |
|---|---|
| Source: | NLD/2013 |

### 3.3.4 4. Group-specific levee data

| | |
|---|---|
| Source: | Provided by individual groups (if any) |

## 3.4 Digital Elevation Model




☐ Inundation Area (outline)

N
World Mercator

DSS-WISE™ Web
© NCCHE

0 200 ft

**Figure 2: Map of Digital Elevation Model with Levees for AOI.**

## 3.5 Reservoir Initial Depth Profile

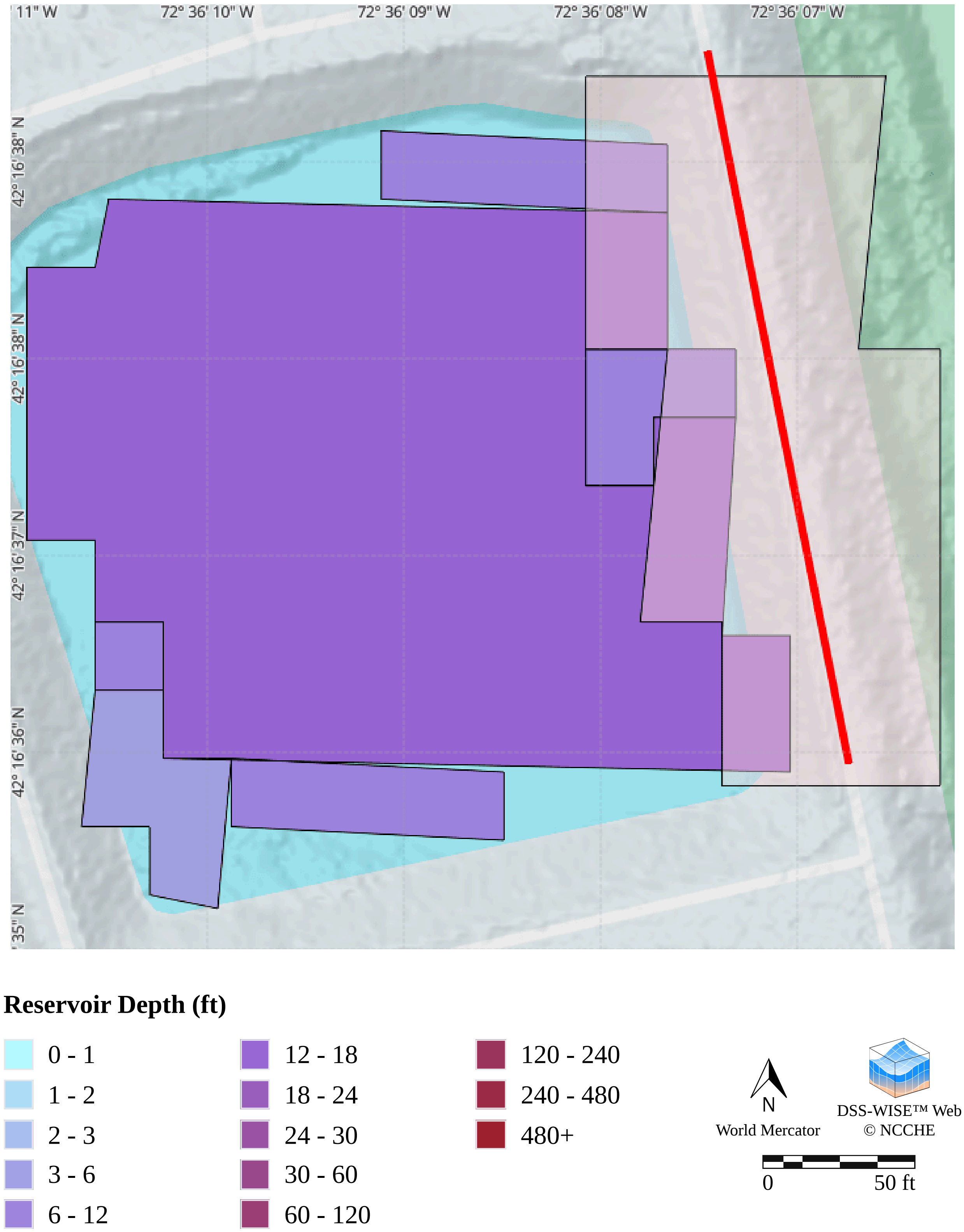



**Figure 3: Map of Reservoir Initial Depth Profile for AOI.**

## 3.6 Land Use/Land Cover

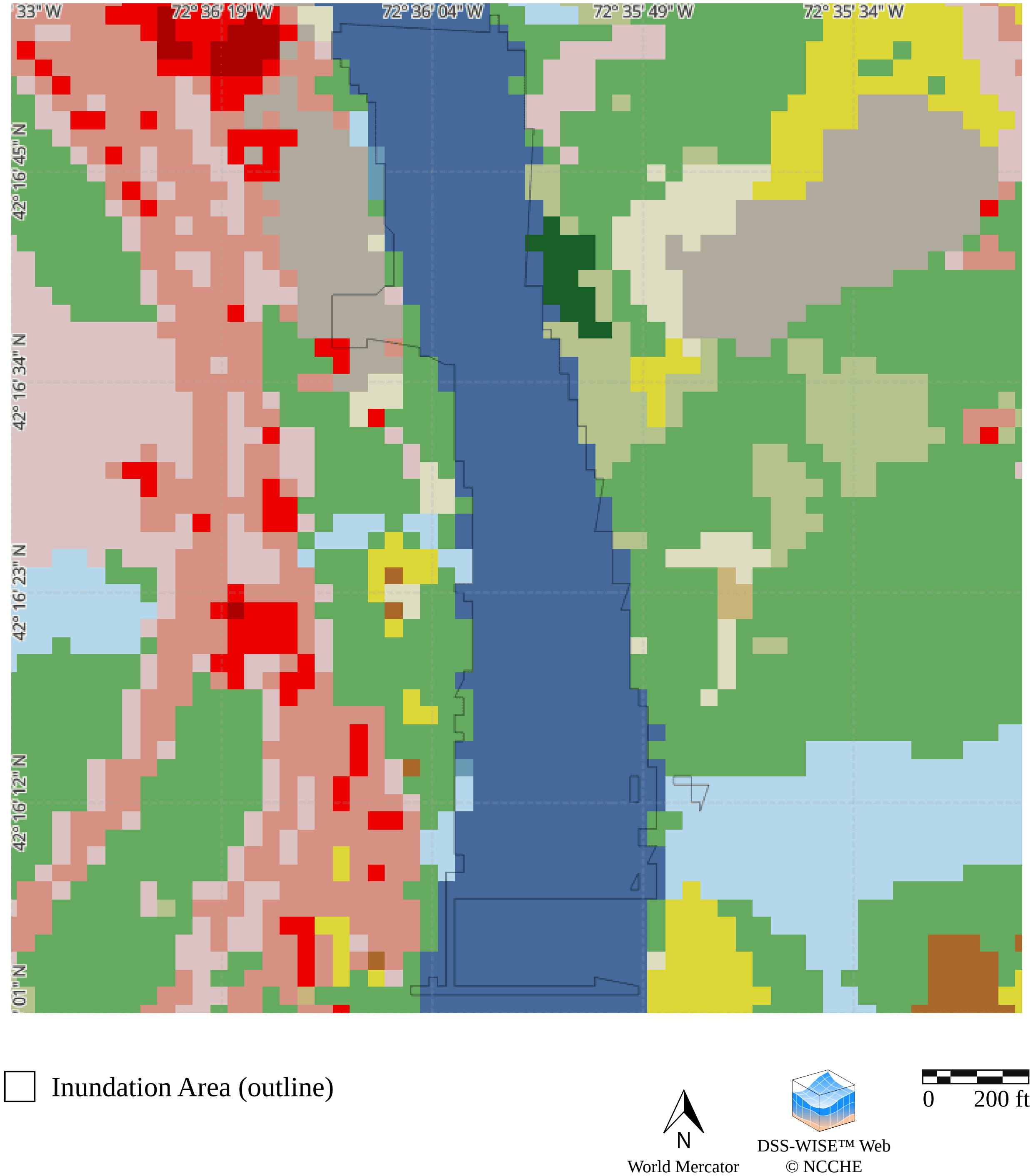



**Figure 4: Map of Land Use for AOI.**

# 4.0 Simulation Results

## 4.1 Simulation Summary

| | |
|---|---|
| Simulation Request Received: | 1:03 PM UTC (04/09/2026) |
| Simulation Start Time: | 1:03 PM UTC (04/09/2026) |
| Simulation End Time: | 1:03 PM UTC (04/09/2026) |
| DEM resolution used for simulation (ft): | 29.9 |
| DEM resolution requested (ft): | 29.9 |
| Final distance reached downstream (miles): | 0.7 |
| Domain buffer distance (miles): | 5 |
| Elapsed simulation time after breach initiation (hrs): | 12.2 |
| Remaining reservoir volume at termination (%): | 7.453 |
| Termination condition: | Water stopped spreading. |

## 4.2 Land Use and Manning's Roughness Coefficient for Inundated Area

| Land Use Description | % of Inundated Area | n-Value ($m^{-1/3}s$) | Code | Color |
|---|---|---|---|---|
| Unclassified | 0.00 | 0.0350 | 0 | |
| Open Water | 0.00 | 0.0330 | 11 | |
| Perennial Snow/Ice | 0.00 | 0.0100 | 12 | |
| Developed, Open Space | 0.00 | 0.0404 | 21 | |
| Developed, Low Density | 0.00 | 0.0678 | 22 | |
| Developed, Medium Density | 0.00 | 0.0678 | 23 | |
| Developed, High Density | 0.00 | 0.0404 | 24 | |
| Barren Land | 0.00 | 0.0113 | 31 | |
| Deciduous Forest * | 0.00 | 0.1000 | 41 | |
| Evergreen Forest * | 0.00 | 0.1000 | 42 | |
| Mixed Forest * | 0.00 | 0.1200 | 43 | |
| Dwarf Scrub * | 0.00 | 0.0350 | 51 | |
| Shrub/Scrub | 0.00 | 0.0400 | 52 | |
| Grassland/Herbaceous | 0.00 | 0.0400 | 71 | |
| Sedge/Herbaceous * | 0.00 | 0.0350 | 72 | |
| Lichens * | 0.00 | 0.0350 | 73 | |
| Moss * | 0.00 | 0.0350 | 74 | |
| Hay/Pasture | 0.00 | 0.0350 | 81 | |
| Cultivated Crops | 0.00 | 0.0700 | 82 | |
| Woody Wetlands | 0.00 | 0.1500 | 90 | |
| Emergent Herbaceous Wetlands | 0.00 | 0.1825 | 95 | |

*Note:* * indicates an n-value estimated by NCCHE. ** indicates an n-value given by the user. Other values are taken from literature.

## 4.3 Coverage and Sources of DEM Raster Datasets

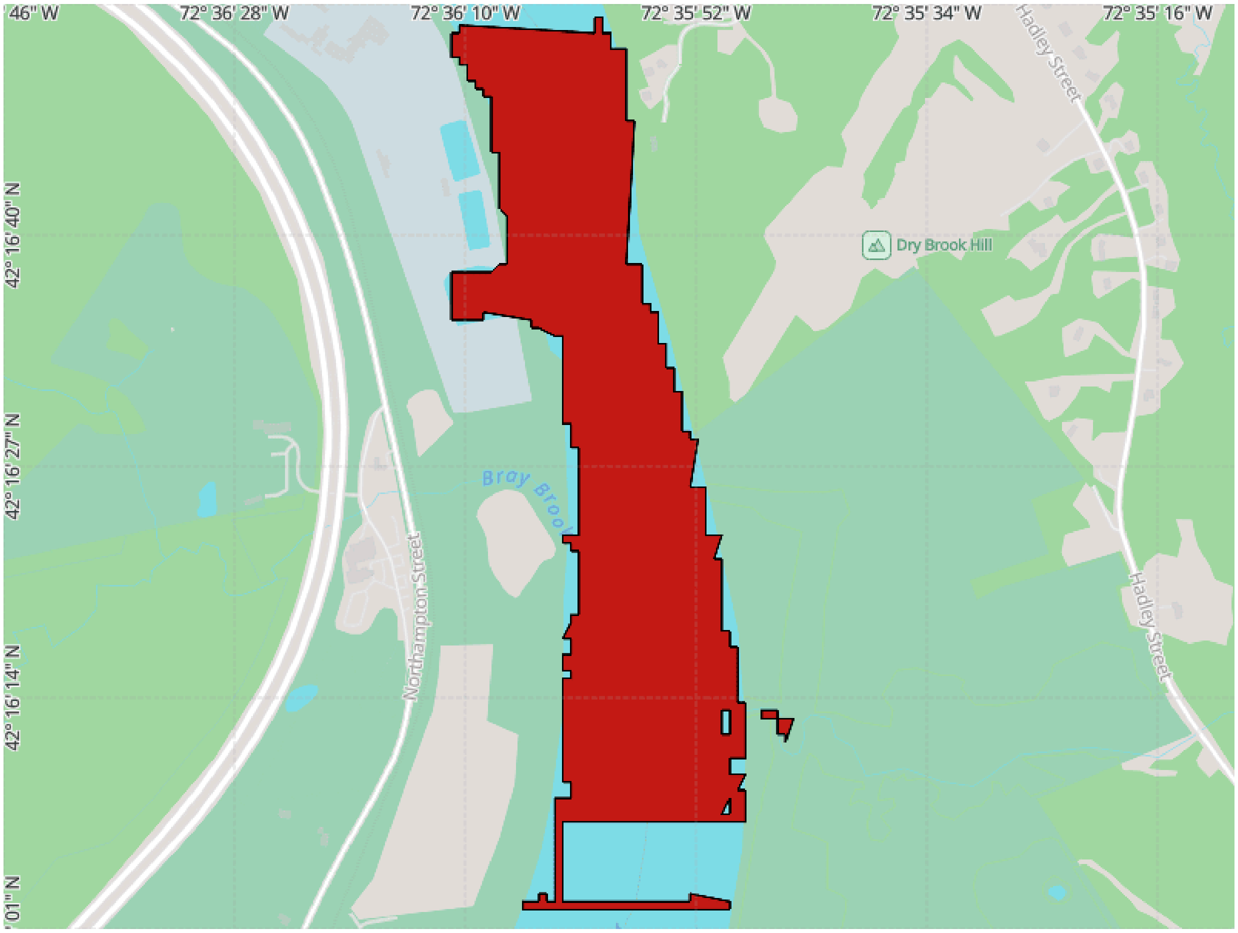



**Figure 5: Coverage of DEM Raster Datasets in the Inundation Area.**

| DEM Source | Source Resolution | Color |
|---|---|---|
| USGS 3DEP | 1 arc-second | |
| USGS 3DEP | 1/3 arc-seconds | |
| USGS 3DEP | 1/9 arc-seconds | |
| USGS 3DEP | 1 meter | |

*Note:* The DEM for this simulation was created from the source DEM raster datasets listed above. These datasets were resampled and reprojected to the user-defined cell size and UTM zone, then stacked in the group-specific order for this simulation.

## 4.4 Maximum Flood Depth

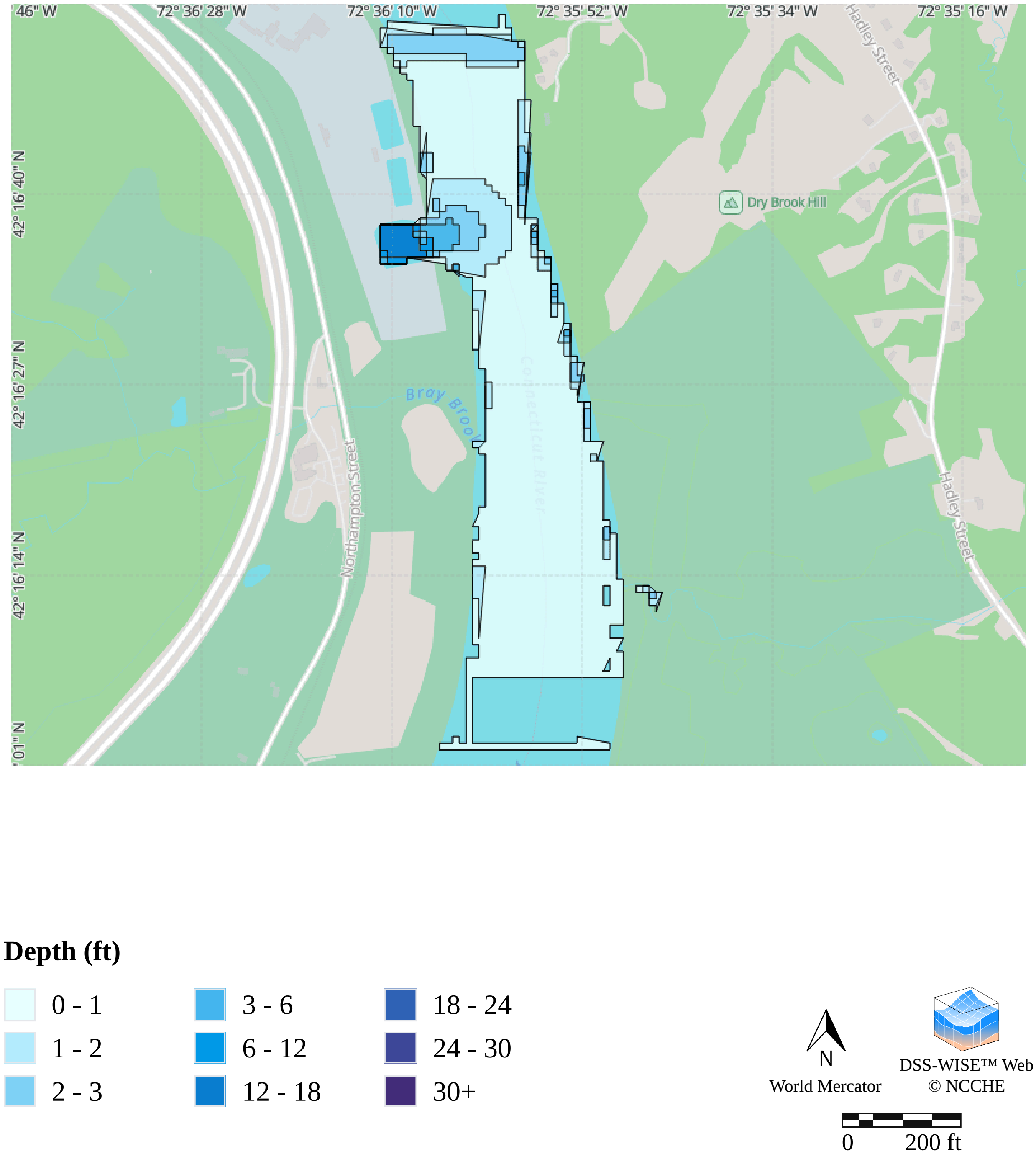



**Figure 6: Maximum Flood Depth Map.**

## 4.5 Flood Arrival Time

Flood arrival time is measured from the beginning of the simulation.

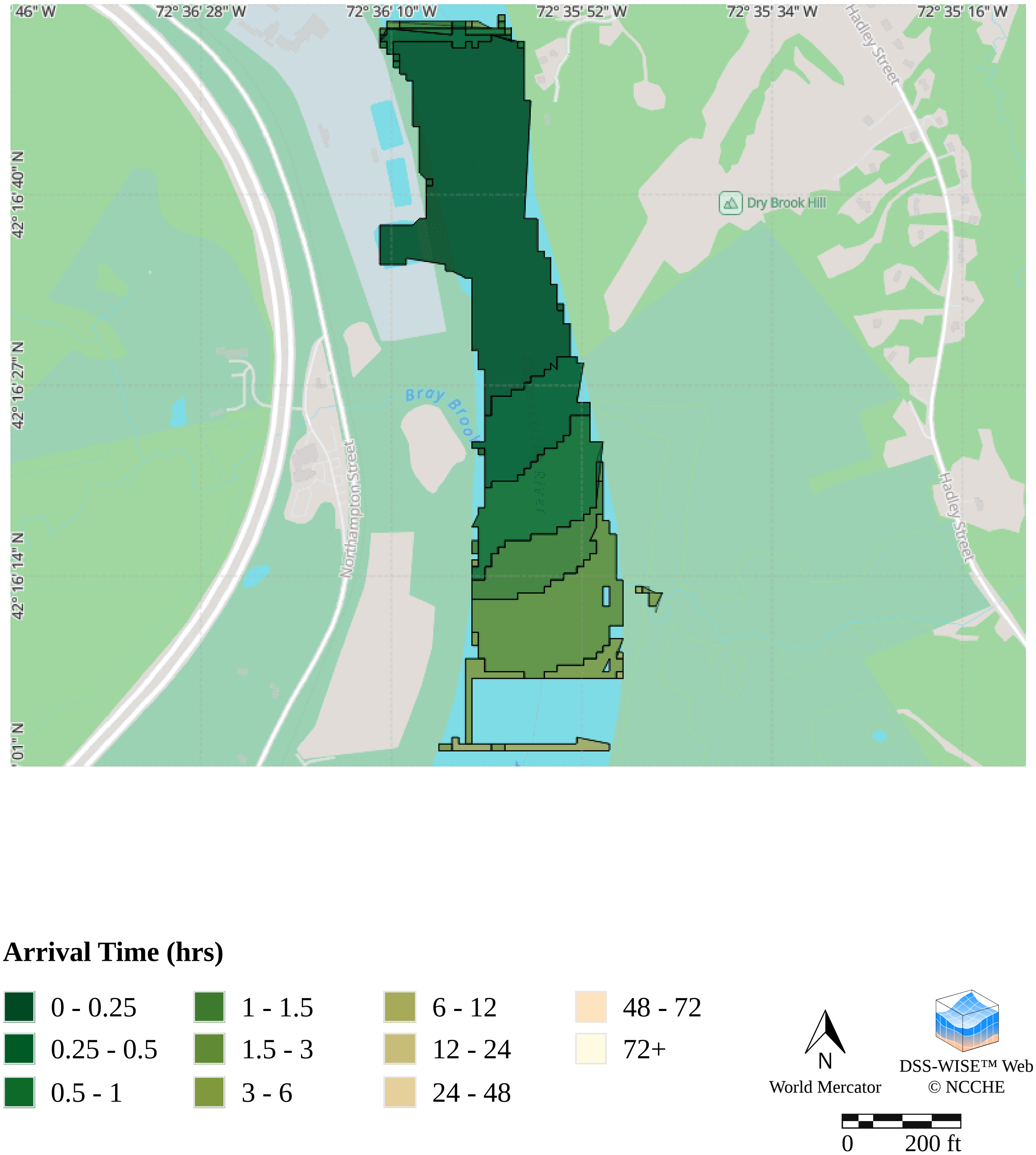



**Figure 7: Flood Arrival Time Map.**

# 4.6 Observation Line Hydrograph(s)

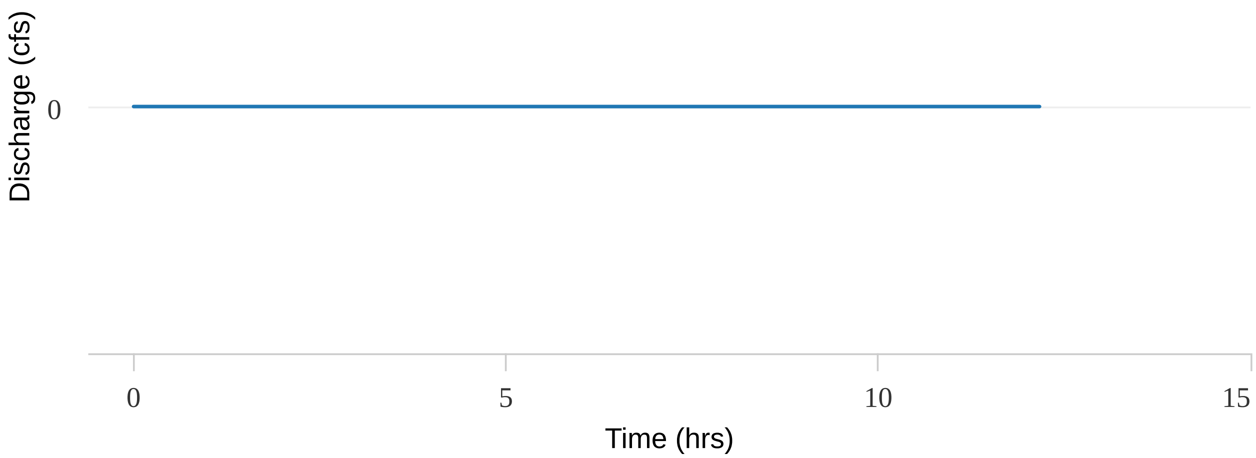



**Figure 8: Discharge Measured at: MA Route 202 Crossing**

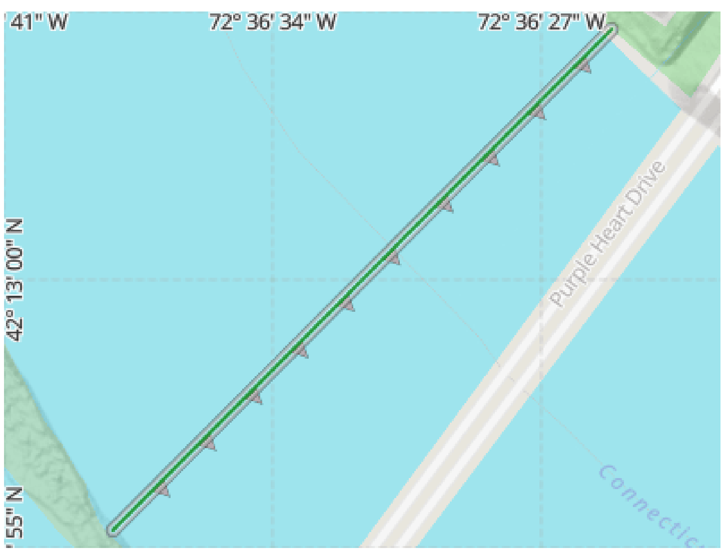



**Figure 9: Observation Line: MA Route 202 Crossing**

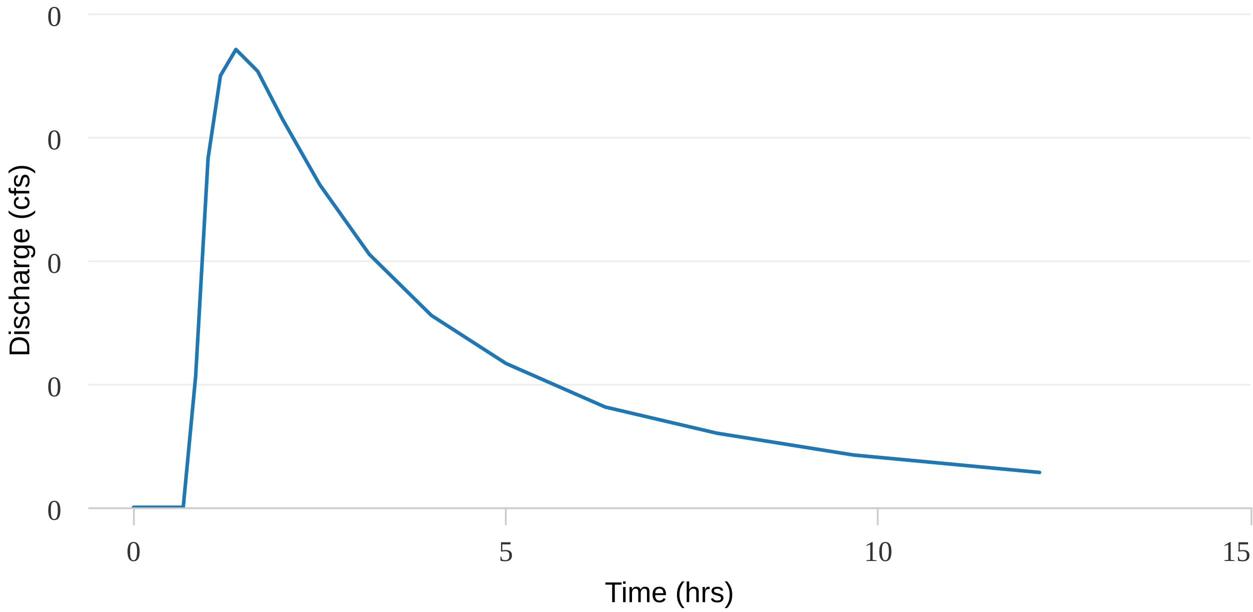



**Figure 10: Discharge Measured at: Observation Line 2**

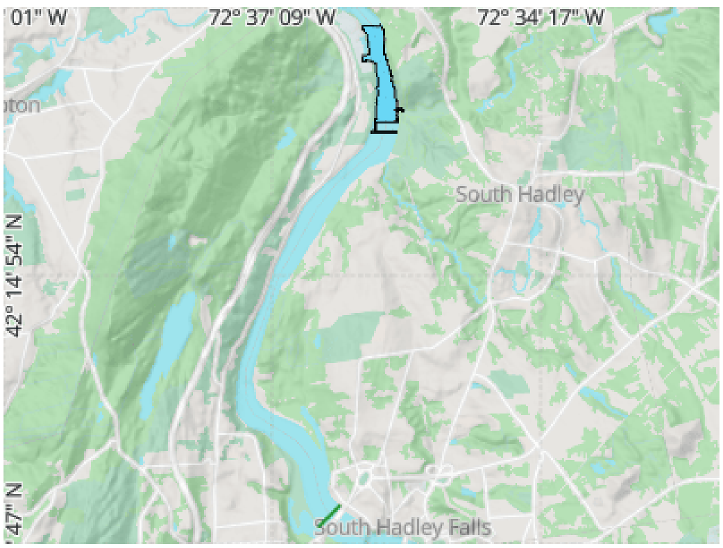



**Figure 11: Observation Line: Observation Line 2**

## 4.7 Breaching Reservoir Time History

The reservoir water surface elevation as a function of time was computed by summing the water depth and bed elevation at a regular interval at the user-specified reservoir point.

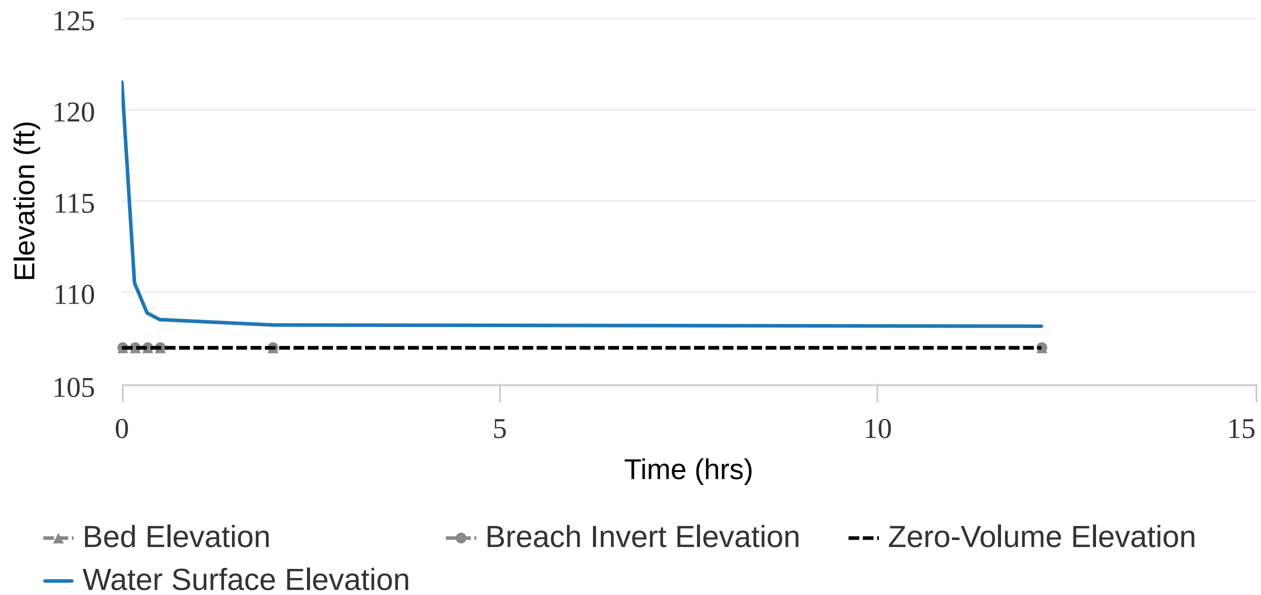



**Figure 12: Reservoir Water Surface Elevation.**

The reservoir volume as a function of time was computed by the following formula: $V_t = V_{init} - V_{net}$, where $V_t$ is the reservoir volume at a given time, $V_{init}$ is the reservoir's initial imposed volume, and $V_{net}$ is the net volume that has crossed downstream across any part of the breaching structure's centerline up to that point. Since this only considers water which has completely exited the breach, it should be taken as an approximation.

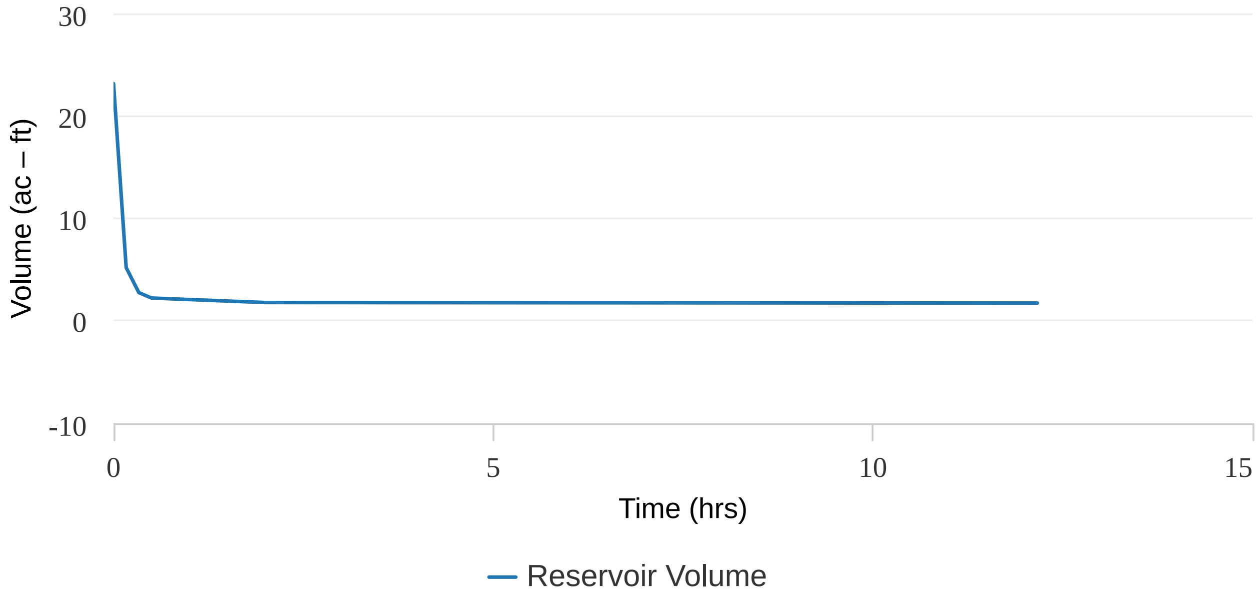



**Figure 13: Reservoir Volume.**

## 4.8 Downloading Simulation Results

The simulation results can be accessed at the following web address:

https://dsswiseweb-beta.ncche.olemiss.edu/simulations/111232/

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