Dam Inundation Mapping – Emergency Action Plan
North Carolina

John Dorman
- School Risk Management Plan
- Dam Emergency Action Plan
- New Hanover County Recovery Disaster Plan
- Multi-Hazard Mitigation Plan
- Old Stony Creek Dam
- Old Stony Creek Dam Emergency Action Plan (EAP)
- Mental Health Facility Disaster Plan
- License Care Facility Disaster Plan
- Fuel Risk Management Plan
- County Recovery Disaster Plan
- Flood Risk Management Plan
The goal for the State of North Carolina is a “State Prepared.” To accomplish this goal, North Carolina must prepare for, respond to, and efficiently recover from all hazards and/or threats whether natural, technological, or civil. Below are hazards that have the ability to impact North Carolina. Mapping and Analysis is provided for each hazard.
Risk Management – Planning Tools

This page provides password-protected access to helpful tools for generating risk management plans. Each Risk Management Plan tool focuses on a specific hazard and/or vulnerable asset. Each tool provides hazard and vulnerability identification, consequence analysis, and development of risk management strategies.
Welcome to the Emergency Action Plan for Dams Tool

Select an existing EAP from the list or click “New Plan” to select a dam and create a new EAP.

To complete the EAP, you will step through four sections. These sections are:

- **Dam Profile:** Several pages in this section are pre-filled with data from the North Carolina Dam Inventory database. Verify and, if necessary, update the information relating to the dam, including detailed dam specifics (e.g., dam type, dam purpose, types of spillways), and contact information.
- **Recommended Actions:** Complete the recommended actions sections for all events and all event levels at the dam.
- **Maps and Figures:** Update maps and figures.
- **Appendices:** Verify resources, emergency contacts and add additional files to the EAP.

When all four sections have been completed and the information verified, click the Export link in your plan list or in the upper right hand corner of the application to create a PDF or Word document of the EAP.

Contact Ken Ashe with any questions or problems you may encounter on this site.
Welcome to the Emergency Action Plan

Select an existing EAP from the list or click "New Plan" to select a dam and create a new EAP.

To complete the EAP, you will step through four sections. These sections are:

- Dam Profiles: Several pages in this section are pre-filled with data from the USACE.
  Verify and, if necessary, update the information relating to the dam, including the location, type, dam purpose, types of spillways, and contact information.
- Recommended Actions: Complete the recommended actions sections for all existing dams.
- Maps and Figures: Update maps and figures.
- Appendices: Verify resources, emergency contacts and add additional files to the EAP.

When all four sections have been completed and the information verified, click the Export button at the upper right-hand corner of the application to create a PDF or Word document of the EAP.

Contact Ken Ash with any questions or problems you may encounter on this site.
Welcome to the Emergency Action Plan for Dams Tool

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To complete the EAP, you will step through four sections. These sections are:

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DAM-EAP – Dam Profile

General Dam Information

Complete this section by selecting your dam purpose and type. Tip:

- Dam Name: Brandy Creek Dam
- Dam Status: Active

Select the dam purpose. A maximum of eight purposes can be selected.

- Flood Control
- Storm Water Management
- Water Supply
- Navigation
- Recreation
- Fishing
- Wildlife Habitat
- Other

Select the dam type. A maximum of three types can be selected.

- Earthfill
- Rockfill
- Gravity
- Buttress
- Arch
- Arch Dam
- Concrete
- Masonry
- Socketed
- Turbine Tower
- Others
DAM-EAP – Lowering Water Level
DAM Contacts

There are many individuals and agencies involved in maintaining dam safety and responding during a dam emergency. Tips:

The following table lists statewide numbers to call when reporting a dam emergency.

<table>
<thead>
<tr>
<th>Title/Agency</th>
<th>Name</th>
<th>Office Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCDENR State Dam Safety Engineer</td>
<td>Steve McKee</td>
<td>(919) 715-3220</td>
<td><a href="mailto:steve.mckee@ncdenr.gov">steve.mckee@ncdenr.gov</a></td>
</tr>
<tr>
<td>NCDENR LQI Section Chief</td>
<td>Tony Lewis</td>
<td>(919) 715-3220</td>
<td><a href="mailto:tony.lewis@ncdenr.gov">tony.lewis@ncdenr.gov</a></td>
</tr>
<tr>
<td>NCDENR Aux. State Dam Safety Engineer</td>
<td>Bill Douglas</td>
<td>(919) 715-3220</td>
<td><a href="mailto:bill.douglas@ncdenr.gov">bill.douglas@ncdenr.gov</a></td>
</tr>
<tr>
<td>NCDENR Regional Engineer</td>
<td>Lena Harkins</td>
<td>(252) 399-4000</td>
<td><a href="mailto:lena.harkins@ncdenr.gov">lena.harkins@ncdenr.gov</a></td>
</tr>
<tr>
<td>NC Emergency Operations Office</td>
<td>1-800-888-2111</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the following table to enter and update additional contact information pertinent to the dam, such as the dam's owner(s), operator(s) and engineer(s). Use the contact type "Additional" to add information for an individual or agency whose role is not listed.

<table>
<thead>
<tr>
<th>Contact Title</th>
<th>Name</th>
<th>Office Phone</th>
<th>Email</th>
<th>Directory</th>
</tr>
</thead>
<tbody>
<tr>
<td>OWNER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPERATOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OWNERS ENGINE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COUNTY EMERGENCY DIRECTOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INCIDENT COMMANDER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAP COORDINATOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGOs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCHOOL OFFICIAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESCUE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAW ENFORCEMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCDES BRANCH MANAGER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCDES AREA COORDINATOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Add Contact
DAM-EAP – Dam Contact

Update Contact

- Type of Contact: OPERATOR
- Name
- Title
- Office Phone
- Cell Phone
- Home Phone
- Other Phone
- Email
- Address
- City
- ZIP Code

Additional information for an individual or agency whose role is not listed.
DAM-EAP – Recommended Actions

### Recommended Actions for Brushy Creek Dam 6b

This section will step through each potential unusual or emergency event that could occur at Brushy Creek Dam 6b. Tips:

Below is a summary table that lists each event and level and the condition that determines the level. Some events only have one or two levels and the level descriptions are different for each event.

Use the input boxes on the following pages to verify and update the owner, engineer and emergency response staff responsibilities and recommended actions for each event and event level.

At the conclusion of this section, enter the necessary steps to terminate events at the dam.

#### Summary Table of Events and Conditions at Brushy Creek Dam 6b

<table>
<thead>
<tr>
<th>Event</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unexpected Failure</td>
<td>Dam unexpectedly and without warning begins to fail.</td>
<td>Reserve level below the top of the dam.</td>
<td>N/A</td>
</tr>
<tr>
<td>Embankment Overspreading</td>
<td>Water from the reservoir is flowing over the top of the dam.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Seepage</td>
<td>Damage with discharge greater than 10 gallons per minute.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Erosion</td>
<td>Rapidly eroding (Places)</td>
<td>Observation of new failure in eroded area or an embankment</td>
<td>N/A</td>
</tr>
<tr>
<td>Embankment Cracking</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Embankment Breach</td>
<td>Inundation or rapidly forming sides of the embankment slope.</td>
<td>Visual movement of the embankment slope.</td>
<td>N/A</td>
</tr>
<tr>
<td>Instruments</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Floods</td>
<td>Earthquake resulting in visible damage to the dam or appurtenant structures.</td>
<td>Visual breach; if breached, could result in damage to the dam or appurtenant.</td>
<td>N/A</td>
</tr>
<tr>
<td>Security Threat</td>
<td>Dammed bands that are evident or damage the dam or appurtenant.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Submerged Trapped</td>
<td>Damage to dam or appurtenant that has resulted in uncontrolled water release.</td>
<td>Damage to dam or appurtenant that has resulted in uncontrolled water release.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
DAM-EAP – Recommended Actions Incorporated by Event
DAM-EAP – Recommended Actions by Event by Level

Level 1

Unexpected Failure

Recommended Actions for Dam Owner/Operator

1. Make Level 1 RED notifications using pre-scripted messages.
2. Notify Incident Commander IMMEDIATE EVACUATION downstream of the dam.
3. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public.
4. Record all information, observations, and actions on an Event Log Form (Form 32).

Evaluation/Decision Based upon Table 1.3

Evaluate conditions CONTINUOUSLY. Using Table 1.3, determine the following:

1. The event warrants downgrade if there is no longer an impending threat of dam failure with no additional rainfall occurring and there is damage to the dam that prevents safe impoundment of water. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3.
2. Event may be terminated only when either:
   - There is no longer an impending threat of dam failure with no additional rainfall occurring and it has been determined by NC Dam Safety staff to impound water on;
   - The dam has failed AND there is no longer a threat to the downstream public.

All contacts on Notification Flow Chart shall be updated as changes occur.
Map, Figures and Supporting Data

In this section, edit the emergency access directions. Click Add File to add other maps, charts or figures deemed relevant in the case of an emergency event. These will be included in a ZIP file when the EAP is exported.

There are currently no files associated with this section.

File Upload Form:
- Click the Browse button to navigate to files.
- Only PDF files will be accepted.
- Total size for all files should not exceed 1 GB.
- Choose Yes for Redownload.
- Click the Upload All button to add the files to the exported plan.
- The files will be included in a zipped folder and will be saved to the same location as the exported plan.
DAM-EAP – Checklist on Plan Items / Status
DAM-EAP – Export

The page at https://rmp.nc.gov says:

0 plan files were exported to PlanID_381.zip. A window will open for you to download this file. If you do not see a window, check to make sure you have popups enabled.

OK
Risk Management – New Methodologies / Algorithms

• Develop and Implement Methodologies / Algorithms to calculate Population at the Structure (*includes spatial and temporal analysis*).

• Development and Implement Methodologies to calculate Impact of Man-Made Hazard Impact Analysis on Structures (*including damage assessments and debris generation*).

• Development and Implement Methodologies to calculate Impact of Man-Made Hazard Impact Analysis on Infrastructure and Vehicles (*roads, water systems, vehicles*).

• Will test on Train Derailment – Chemical Disbursement.
DAM-EAP – Automated Plan Generation

Emergency Level 2, YELLOW Notifications
Potential dam failure situation, rapidly developing

911 Dispatch

Local Responder / Incident Commander
No information for Incident Commander

County Emergency Management Director
No information for County EM Director

State Emergency Operations Center (Available 24 Hours)
1-800-858-6368
Assistance is requested from NCDENR - Dam Safety
Be ready to provide information from Figure 3.4 and directions to the dam.

NC Dam Safety, NCDENR
Division of Energy, Mineral and Land Resources
SERT Partners as needed

Suggested Phone Message
This is [identify yourself by name and position].
• I am making this call in accordance with the Alfred Dam Emergency Action Plan.
• We have an emergency condition at Alfred Dam.
• The EAP has been activated and is currently at Emergency Level 2.
• We are implementing predetermined actions to respond to a rapidly developing situation that could result in dam failure.

Note:
(1), (2) indicates suggested call sequence
QUESTIONS?

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