



Guidelines for Owner Completion of the Emergency Action Plan (EAP) Template

- **You must download the PDF document prior to filling out in order for the content to be saved adequately.**
- Fill in all text boxes outlined in **MAGENTA** with appropriate names, descriptions, or phone numbers. Please submit the document once complete.
- Assistance is available from your local Emergency Management Director. A list of county Emergency Managers is available at <https://www.ncdps.gov/emergency-management/em-community/directories/counties> . Contact them to ensure that all addresses and contacts are current, and that they have not delegated implementation of Emergency Action Plans in your area to a local program.
- If you need assistance in completing portions of this template, file information may be obtained from the Division of Energy, Mineral and Land Resources at (919) 707-9220.
- Appendix A, Simplified Inundation Mapping System (SIMS) method for emergency action plans may be considered for following cases:
 1. A small or medium size dam with an easily-identified number of downstream structures for which evacuation procedures can be established by local emergency management.
 2. A small or medium size dam for which funding is not immediately available for engineering studies and photo-based mapping is to be used in the interim until such funding can be arranged and the mapping updated.
 3. SIMS should not be used for dams with significant downstream hydraulic complexities such as major diversion structures, split flows, or potential for cascading dam failures.

Guidance for developing SIM method maps for emergency action plans may be obtained here.

Please note SIM method is not a substitute for engineering judgment nor do they alleviate the need to comply with the Dam Safety Act of 1967. SIM method is not to be used for classifying hazard potential or establishing design floods.

- More detailed surveying or modeling may be warranted for large dams or those dams with a large population in the inundation area or unusually complex topography.
- The North Carolina Dam Safety Program is in the process of updating EAP shell documents and guidance. Please check our web site often for updates: <https://deq.nc.gov/about/divisions/energy-mineral-and-land-resources/dam-safety/planning-dam-emergency>

When completed, submit one **electronic copy** or two **hard copies** to →

North Carolina Dam Safety Program
(damsafety@ncdenr.gov)
Division of Energy, Mineral and Land Resources
1612 Mail Service Center
Raleigh, North Carolina 27699-1612
Phone: (919) 707-9220

Dam Name

Emergency Action Plan (EAP)

State ID: (first 5 letters of County) COUNT-***

County Name County, North Carolina

Revision Number #

Month and Year

Owner/Operator Information:

Email Address:

Day Phone:

Other Phone:



Insert Vicinity map here or dam site map showing neighboring towns, major roads, and location of your dam.

Color in your county on the North Carolina map to the left.

TOC (Table of Contents side tab inserted)

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Emergency Action Plan

XXX Dam

State Inventory No: XXXXX-***

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FORMS

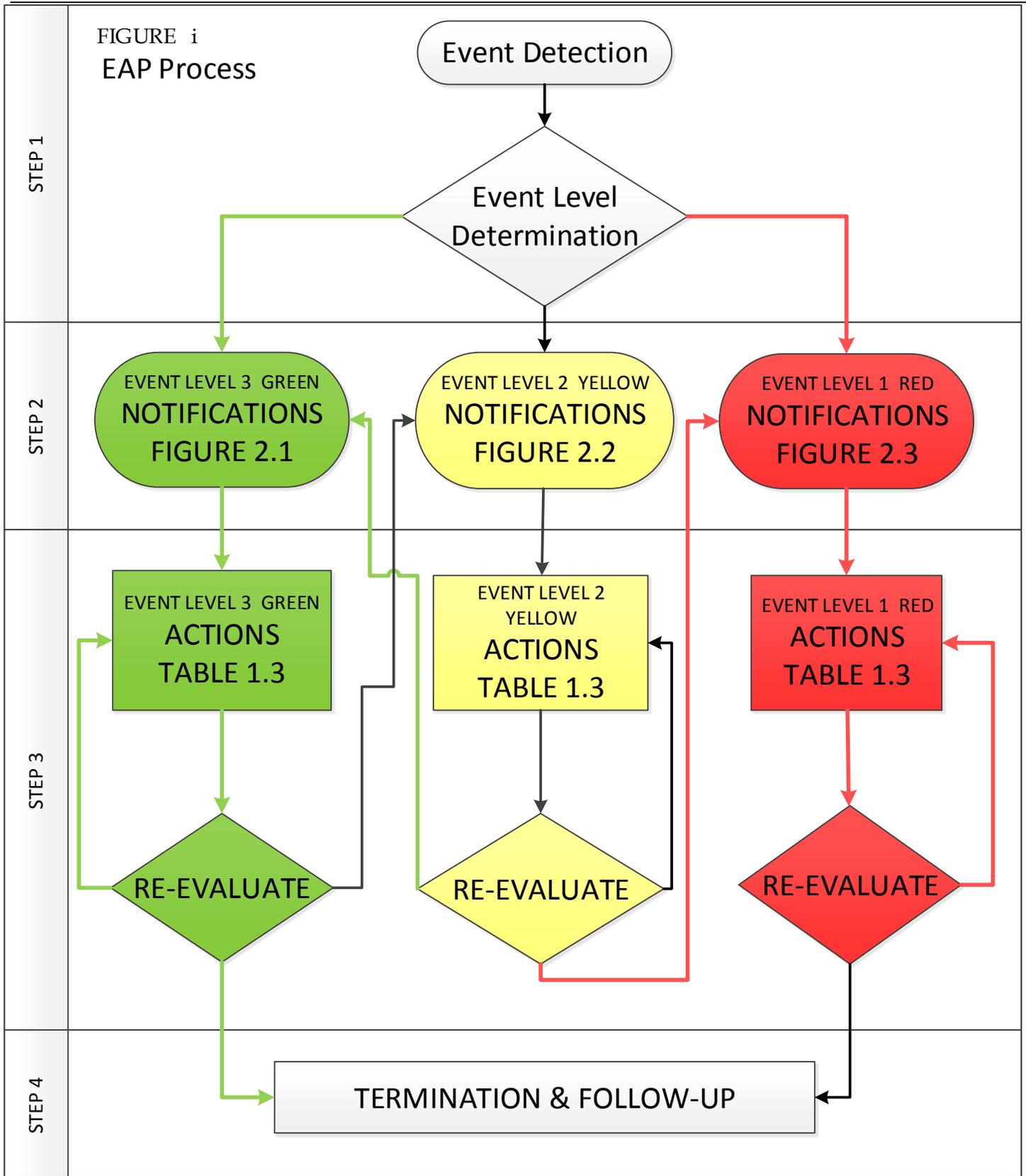
Form 3.2	Unusual or Emergency Event Log.....
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Appendix A	Roles, Responsibilities, and Authority
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SUMMARY OF EAP PROCESS

There are four steps that must be followed anytime an unusual or emergency event is detected at *Dam Name*. The steps are:

Step 1 - Event Detection and Level Determination

During the initial step, an unusual event or emergency event is detected at the dam and classified by the *(EAP Coordinator or designee)* into one of the following event levels (reference Table 1.3):

Event Level 3, GREEN: Unusual Event, slowly developing

Event Level 2, YELLOW: Emergency Event, potential dam failure situation, rapidly developing

Event Level 1, RED: Urgent!! Emergency Event, Dam failure imminent or is in progress

Step 2 - Notification and Communication

After the event level has been determined, notifications are made in accordance with the appropriate notification flow chart provided in STEP 2 of this EAP.

Step 3 - Expected Actions

After the initial notifications are made, *EAP Coordinator or designee* should refer to Table 1.3 and confer with *Engineering Director or designee* to develop and execute appropriate preventative actions. During this step of the EAP, there is a continuous process of taking actions, assessing the status of the situations, and keeping others informed through communication channels established during the initial notifications. The EAP may go through multiple event levels during Steps 2 and 3 as the situation either improves or worsens.

Step 4 - Termination and Follow-up

Once the event has ended or been resolved, termination and follow-up procedures should be followed as outlined in Section 4 of this EAP. EAP operations can only be terminated after completing operations under Event Level 3 or 1. If Event Level 2 is declared, the operations must be designated Event Level 3 or 1 before terminating the EAP operations.

STATEMENT OF PURPOSE

The purpose of this plan is to prescribe procedures to be followed in the event of an emergency associated with the *Dam Name* which is caused by an unusually large flood or earthquake, a malfunction (hydraulic or structural) of the spillway, malicious human activity such as sabotage, vandalism or terrorism, or failure of the dam.

This Emergency Action Plan (EAP) defines responsibilities and procedures to:

- Identify unusual and unlikely conditions that may endanger the dam.
- Initiate remedial actions to prevent a dam failure or minimize the downstream impacts of a dam failure.
- Initiate emergency actions to warn downstream residents of impending or actual failure of the dam.

**STEP 1 (DETECTION and EVENT LEVEL DETERMINATION side
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STEP 1: EVENT DETECTION AND LEVEL DETERMINATION

1.1 Event Detection

Daily surveillance, observation and/or instrumentation readings at the site will be the normal methods of detecting potential emergency situations. Unusual or emergency events may be detected by:

- Observations at or near the dam
- Evaluation of instrumentation data
- Earthquakes felt or reported in the vicinity of the dam
- Forewarning of conditions that may cause an unusual event or emergency event at the dam (for example, a severe weather or flash flood forecast)

1.2 Emergency Level Definitions

Level 1, RED Emergency – Urgent!! Dam failure imminent or is in progress

This is an extremely urgent situation when a dam failure is occurring or obviously is about to occur and cannot be prevented. When it is determined that there is no longer time available to implement corrective measures to prevent failure, an order for evacuation of residents in potential inundation areas shall be issued by Emergency Responder (Incident Commander)

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

This classification indicates that a situation is developing that could lead to dam failure, but there is not an immediate threat of dam failure. The dam Owner/Operator should closely monitor the condition of the dam and periodically report the status of the situation. A reasonable amount of time is available for analysis before deciding on evacuation of residents. If the dam condition worsens and failure becomes imminent, the Incident Commander must be notified immediately of the change in the emergency level to evacuate the people at risk downstream.

If time permits, the Owner's Engineer and state dam safety officials should be contacted to evaluate the situation and recommend remedial actions to prevent failure of the dam. The dam operator should initiate remedial repairs (note local resources that may be available—see Appendix C). Time available to employ remedial actions may be hours or days.

Level 3, GREEN Unusual Event - Slowly developing

This classification indicates a situation is developing, but has not yet threatened the operation or structural integrity of the dam. The Owner's technical representative or engineer AND NC Dam Safety Office should be contacted to investigate the situation and recommend actions to take. The condition of the dam should be closely monitored, especially during storm events, to detect any development of a potential or imminent dam failure situation.

See the following pages for guidance in determining the proper emergency level for various situations.

EMERGENCY LEVELS top tab inserted

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Table 1.3
Emergency Level Determination & Action Data Sheet Index

Event	Condition	Emergency level*	Action Data Sheet
Unexpected Failure	Dam unexpectedly and without warning begins to fail	1	#1
Earth spillway flow	Reservoir water surface elevation at auxiliary spillway crest or spillway is flowing with no active erosion	3	A3
	Spillway flowing with active gully erosion or flow that could result in flooding of people downstream if the reservoir level continues to rise	2	A2
	Spillway flowing with an advancing head cut that is threatening the control section or that is already flooding people downstream	1	A1
Embankment overtopping	Reservoir level is 1 foot below the top of the dam	2	B2
	Water from the reservoir is flowing over the top of the dam	1	B1
Seepage	New seepage areas in or near the dam, water flowing clear	3	C3
	New seepage areas with cloudy discharge or increasing flow rate	2	C2
	Seepage with discharge greater than 10 gallons per minute	1	C1
Sinkholes	Observation of new sinkhole in reservoir area or on embankment	2	D2
	Rapidly enlarging sinkhole	1	D1
Embankment cracking	New cracks in the embankment greater than ¼-inch wide without seepage	3	E3
Embankment movement	Visual movement/slippage of the embankment slope	2	F2
	Sudden or rapidly proceeding slides of the embankment slopes	1	F1
Instruments	Instrumentation readings beyond predetermined values	3	G3
Earthquake	Measurable earthquake felt or reported near the dam and dam appears to be stable	3	H3
	Earthquake resulting in visible damage to the dam or appurtenances	1	H1
Security threat	Reported bomb threat, Unverified	3	I3
	Verified bomb threat that, if carried out, could result in damage to the dam	2	I2
	Damage to dam or appurtenances with no impacts to the functioning of the dam	1	I1
	Detonated bomb that has resulted in damage to the dam or appurtenances	1	I1
Sabotage/ vandalism	Suspected Cyber attack of pertinent control systems. <i>Include if publically owned</i>	1	I1
	Damage to or modification to the dam or appurtenances no impacts the functioning of the dam	3	J3
	Damage to dam or appurtenances that has resulted in seepage flow	2	J2
Blocked Culverts	Damage to dam or appurtenances that has resulted in uncontrolled water release	1	J1
	Debris is blocking a spillway pipe, causing lake level to rise	3	K3

If an event is not covered, adapt an Action Data Sheet of a similar event and event level. If resources described in the Action Data Sheets are not available, adapt with the available resources.

Remove "event" completely if not relevant to the dam.

After the *EAP Coordinator* has determined the event level

See *STEP 2*: GREEN, YELLOW & RED Notification flowcharts the *STEP 3* Referenced Action Data Sheet

See *STEP 3*: Expected Action Data Sheets for specific actions once Emergency Level determined

STEP 2 (Notifications and Communication side tab inserted)

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NOTIFICATION CHARTS top tab inserted

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UNUSUAL EVENT, SLOWLY DEVELOPING
 (Can usually wait until regular business hours unless Level is elevated)

Figure 2.1

UNUSUAL EVENT LEVEL 3 GREEN

Dam Owner/Operator
 Name
 XXX-XXX-XXXX (Office)
 XXX-XXX-XXXX (Home)
 XXX-XXX-XXXX (Cell or 24-hr)

(1) ↓

Dam Owner's Engineer
 (if applicable)

 XXX-XXX-XXXX (Office)
 XXX-XXX-XXXX (Home)
 XXX-XXX-XXXX (Cell)

(2) ↓

**NCDEQ, Division of Energy,
 Mineral, and Land Resources**

BUSINESS HOURS

 ### Regional Office
 Phone: ###-###-####

 Or
 Raleigh Central Office
 Phone: 919-707-9220

↓

**State Emergency Operations
 Center
 24 hours**

1-800-858-0368

SUGGESTED PHONE MESSAGE

- This is **(Identify yourself, name, position)**
- An unusual event has been detected at Dam Name
- The EAP has been activated, currently at Level 3.
- If a problem occurs, flooding along Name of Stream is possible.
- The situation is being monitored to determine if any evacuation warnings will be necessary.
- We will keep you apprised of the situation.
- I can be contacted at the following number: **(Provide Phone #)**
 If you cannot reach me, please call the following alternative number: **(Provide Alt Phone #)**

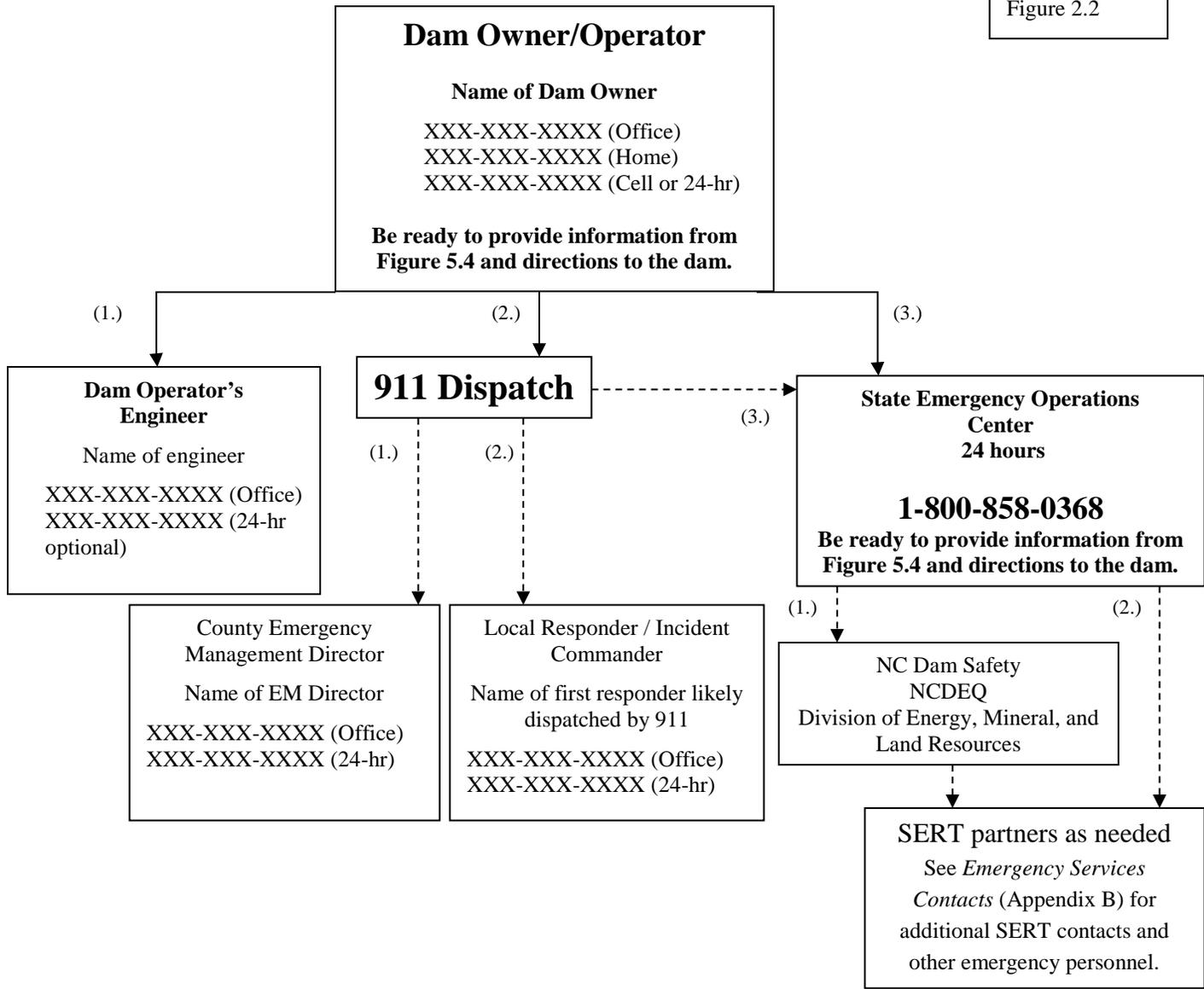
Note:
 (1), (2) denotes suggested call sequence

Emergency Level 2 YELLOW Notifications

Potential dam failure situation, rapidly developing

Figure 2.2

EMERGENCY LEVEL 2 YELLOW



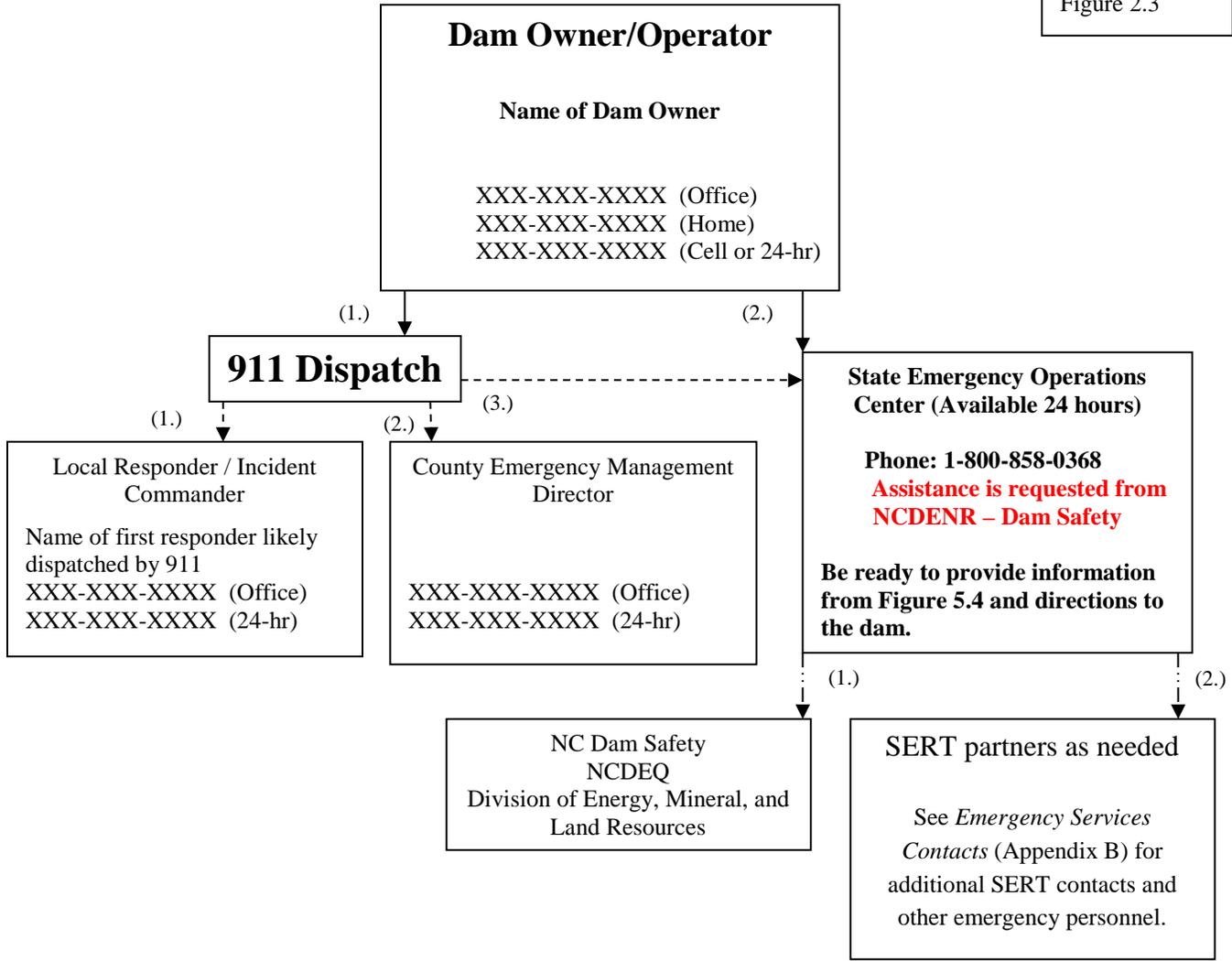
SUGGESTED PHONE MESSAGE

- This is **(Identify yourself, name, position)**
- I am making this call in accordance with the Emergency Action Plan.
- We have an emergency condition at
- The EAP has been activated, currently under Emergency Level 2.
- We are implementing predetermined actions to respond to a rapidly developing situation that could result in dam failure.
- The situation is being monitored to determine if any evacuation warnings will be necessary.
- Reference your copy of the EAP to prepare for possible evacuations.
- I can be contacted at the following number: **(Provide Phone #)**
If you cannot reach me, please call the following alternative number: **(Provide Alt Phone #)**

Emergency Level 1, RED Notifications
FAILURE IN PROGRESS

Figure 2.3

EMERGENCY LEVEL 1 RED



Note:
 1., 2., etc., denotes call sequence

SUGGESTED PHONE MESSAGE

- This is an **EMERGENCY**. This is **(Identify yourself, name, position)**.
- *The _____ is failing. The downstream area must be evacuated immediately.*
 Repeat, *the _____ is failing.*
- *We have activated the Emergency Action Plan for this dam and are currently under Emergency Level 1.*
- *Evacuate immediately according to the evacuation map in your copy of the Emergency Action Plan.*
- I can be contacted at the following number: **(Provide Phone #)**
 If you cannot reach me, please call the following alternative number: **(Provide Alt Phone #)**

STEP 3 (Expected Actions side tab inserted)

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Step 3: Expected Actions

This Section includes Action Sheets and Emergency Event Logs to be used during and after an emergency situation.

3.1 Action Data Sheets

The Action Data Sheets are to be used as guidance during an emergency event. If an event is not included in Table 1.3, it is recommended to adopt an Action Data Sheet from a similar event and event level. Table 1.3 shows the Action Data Sheet Index to be used according to the Event and the Emergency Level. The Action Data Sheet should reviewed by the Owner's Engineer when possible and time permits.

LEVEL: 1, RED UNEXPECTED FAILURE**Sheet
#1****RECOMMENDED ACTIONS****Owner/EAP Coordinator**

- A. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
- B. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam.
- C. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public.
- D. Record all information, observations, and actions on an Event Log Form (Form 3.2).

Owner's Engineer

Provide decision support and technical support to **Owner/EAP Coordinator** as appropriate.
Advise **Owner/EAP Coordinator** of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

EVALUATION / DECISION based upon TABLE 1.3

Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:

- A. The event warrants downgrade if there is no longer an impending threat of dam failure with no additional rainfall occurring YET 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.
- B. 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 safe to impound water or;
 - The dam has failed AND there is no longer a threat to the downstream public

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) TERMINATION	
Monitor conditions until damage is repaired	Go to Termination and Follow-up (STEP4)	

LEVEL: 3, GREEN	EARTH SPILLWAY FLOW “spillway is flowing with no active erosion” (Link to Table 1.3 Level GREEN “Conditions”).	Sheet A3
RECOMMENDED ACTIONS		
Owner/EAP Coordinator (May be split responsibilities, i.e. One person at the dam handling on site actions and a different person who can make notifications. APPLICABLE TO ALL ACTION DATA SHEETS):		
<ol style="list-style-type: none"> 1. Make sure Level 3 GREEN notifications in Figure 2.1 have been made. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and spillway area for erosion every two hours. 3. Monitor Off-site areas “and instrumentation” 4. Record all information, observations, and actions on an Event Log Form (Form 3.2). 5. Contact the Owner’s Engineer at least daily to report the latest observations and conditions. If conditions change significantly, go to re-evaluation/decision section and follow relevant steps immediately. 		
<p>Owner’s Engineer</p> <p>Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.</p>		
<p>NC Dam Safety Staff</p> <p>Provide decision support and technical support to the Incident Commander as appropriate.</p>		
RE-EVALUATION / DECISION Based upon TALE 1.3		
Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 , determine whether:		
<ol style="list-style-type: none"> A. The event can be terminated when spillway flows cease. B. The event remains at the current Event Level 3 (No change in situation). C. The event warrants escalation when spillway flows produce active erosion of channel or spillway flow that may result in flooding of people downstream if water continues to rise (Link to Table 1.3 Level Yellow “Conditions”). 		
<i>All contacts on Notification Flow Chart shall be updated of changes</i>		
Based on this determination, follow the appropriate actions		
A) TERMINATION	B) EVENT LEVEL 3 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Termination and Follow-up (Step 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Steps 2&3

LEVEL: 2, YELLOW

EARTH SPILLWAY FLOW “Spillway flowing with active gully erosion or possible flooding of people downstream”
(Link to Table 1.3 Level Yellow “Conditions”).

Sheet
A2**RECOMMENDED ACTIONS**

1. Make sure Level 2 YELLOW notifications in Figure 2.2 have been made using pre-scripted message.
2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Stay clear of water flows as they are very dangerous.
3. Record all information, observations, and actions on an Event Log Form (Form 3.2).
4. Monitor water levels and erosion of spillway every 2 hours for changes. Monitor Off-site areas and instrumentation
5. Using “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream.
6. Contact the **Owner’s Engineer** at least daily to report the latest observations and conditions. If conditions change significantly, go to **re-evaluation/decision section** and follow relevant steps immediately.

Owner’s Engineer

Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least twice daily, or whenever conditions change significantly. **Using Table 1.3**, determine if:

- A. The event warrants downgrade to Event Level 3 if “Spillway flows are decreasing with no additional rainfall occurring” (Link to Table 1.3 Level GREEN “Conditions”). All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3.
- B. The event remains at the current Event Level 2 (*No change in situation*).
- C. The event warrants escalation to Event Level 1 If **Erosion of channel advancing toward the reservoir or flow is flooding people downstream** (Link to Table 1.3 Level Red “Conditions”).

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) EVENT LEVEL 2 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1, RED EARTH SPILLWAY FLOW “Spillway flowing with an advancing headcut that is threatening the control section, or that is flooding people downstream” (Link to Table 1.3 Level RED “Conditions”)		Sheet A1
RECOMMENDED ACTIONS		
<ol style="list-style-type: none"> 1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message. 2. Recommend to the 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 3.2). <p>Owner’s Engineer</p> <p>Provide decision support and technical support to Owner/EAP Coordinator as appropriate.</p> <p>Advise Owner/EAP Coordinator of dangerous conditions at the dam.</p> <p>NC Dam Safety Staff</p> <p>Provide decision support and technical support to the Incident Commander as appropriate.</p>		
EVALUATION / DECISION based upon TABLE 1.3		
<p>Evaluate conditions CONTINUOUSLY Using Table 1.3, determine if:</p> <ol style="list-style-type: none"> A. The event warrants downgrade if spillway flows have stopped with no additional rainfall occurring YET 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. B. The event remains at the current Event Level 1 (<i>No change in situation</i>). C. Event may be Terminated only when either: <ul style="list-style-type: none"> • Spillway flows have stopped with no additional rainfall occurring and it has been determined by NC Dam Safety staff safe to impound water or; • The dam has failed AND there is no longer a threat to the downstream public <p><i>All contacts on Notification Flow Chart shall be updated of changes</i></p>		
Based on this determination, follow the appropriate actions		
A) EVENT LEVEL DOWNGRADE	B) EVENT/LEVEL REMAINS THE SAME	C) TERMINATION
Monitor conditions until damage is repaired	Continue recommended actions on this sheet	Go to Termination and Follow-up (STEP4)

LEVEL: 2, YELLOW	EMBANKMENT OVERTOPPING “Reservoir is 1 foot below the top of dam” (Link to Table 1.3 Level Yellow “Conditions”).	Sheet B2
RECOMMENDED ACTIONS		
<ol style="list-style-type: none"> 1. Make sure Level 2 YELLOW notifications in Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Stay clear of water flows as they are very dangerous. 3. Record all information, observations, and actions on an Event Log Form (Form 3.2). 4. Monitor water levels and erosion of spillway every 2 hours for changes. Monitor Off-site areas and instrumentation 5. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. 6. Contact the Owner’s Engineer at least twice daily to report the latest observations and conditions. If conditions change significantly, go to re-evaluation/decision section and follow relevant steps immediately. <p>Owner’s Engineer</p> <p>Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.</p> <p><u>NC Dam Safety Staff</u></p> <ol style="list-style-type: none"> A. Provide decision support and technical support to the Incident Commander as appropriate. 		
RE-EVALUATION / DECISION Based upon TALE 1.3		
<p>Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:</p> <ol style="list-style-type: none"> A. The event warrants downgrade to Event Level 3 if precipitation has stopped, slowing additional inflow to lake. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade from Event Level 2 to Event Level 3. B. The event remains at the current Event Level 2 (No change in situation) C. The event warrants escalation to Event Level 1 if water begins to overtop the embankment. <p><i>All contacts on Notification Flow Chart shall be updated of changes</i></p>		
Based on this determination, follow the appropriate actions		
A) EVENT LEVEL DOWNGRADE	B) EVENT LEVEL 2 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1, RED	EMBANKMENT OVERTOPPING “Water from the reservoir is flowing over the top of the dam” (Link to Table 1.3 Level Yellow “Conditions”).	Sheet B1
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RECOMMENDED ACTIONS

1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam.
3. Well vegetated embankment dams can withstand overtopping for a short amount of time. Monitor for changes in water flow as signs of the embankment eroding.
4. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public.
5. Record all information, observations, and actions on an Event Log Form (Form 3.2).

Owner's Engineer

Provide decision support and technical support to **Owner/EAP Coordinator** as appropriate.
 Advise **Owner/EAP Coordinator** of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

EVALUATION / DECISION Based upon TALE 1.3

Evaluate the situation as events progress, or whenever conditions change. Determine whether:

- A. *The event warrants downgrade if spillway flows have stopped with no additional rainfall occurring YET 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. All contacts on Event Level 1 Notification Flow Chart shall be notified of downgrade to Event Level 3.*
- B. *The event remains at the current Event Level 1 (No change in situation).*
- C. *Event may be Terminated only when either:*
 - *Spillway flows have stopped with no additional rainfall occurring and it has been determined by NC Dam Safety staff safe to impound water or;*
 - *The dam has failed AND there is no longer a threat to the downstream public*

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) EVENT/LEVEL REMAINS THE SAME	C) TERMINATION
Monitor conditions until damage is repaired	Continue recommended actions on this sheet	Go to Termination and Follow- up (STEP4)

LEVEL: 3, GREEN SEEPAGE “New seepage areas in or near the dam, water flowing clear” (reference Table 1.3 Level GREEN “Condition”)

Sheet
C3

RECOMMENDED ACTIONS

1. Make sure Level 3 GREEN notifications in Figure 2.1 have been made.
2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and seepage points for cloudy discharge or increased flow rates every two hours.
3. If conditions permit:
 - If the inflow source of the seepage is within the reservoir, plug the flow with available material – hay bayles, bentonite, or plastic sheeting
 - Place an inverted filter (layered sand and gravel) over the exit area to hold soil material in place.
 - Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream.
4. Monitor Off-site areas “and instrumentation (Applicable to all Action Data Sheets with reference to Instrumentation).
5. Record all information, observations, and actions on an Event Log Form (Form 3.2).
6. Contact the **Owner’s Engineer** at least daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner’s Engineer

Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3, determine whether:

- A. The event can be terminated if seepage flow has been remedied and it has been determined by NC Dam Safety staff safe to impound water.
- B. The event remains at the current Event Level 3 (No change in situation).
- C. The event warrants escalation to Event Level determined using Table 1.3 if discharge becomes cloudy or increased flow rate.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT LEVEL 3 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Termination and Follow-up (Step 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Steps 2&3

LEVEL: 2, YELLOW SEEPAGE “New seepage areas with cloudy discharge or increasing flow rate” (reference Table 1.3 Level YELLOW “Condition”)		Sheet C2
RECOMMENDED ACTIONS		
<ol style="list-style-type: none"> 1. Make sure notifications on Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and seepage points for cloudy discharge or increased flow rates every two hours. 3. If conditions permit: <ul style="list-style-type: none"> • If the inflow source of the seepage is within the reservoir, plug the flow with available material – hay bales, bentonite, or plastic sheeting • Place an inverted filter (layered sand and gravel) over the exit area to hold soil material in place. 4. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. 5. Monitor Off-site areas “and instrumentation” (Applicable to all Action Data Sheets with reference to Instrumentation). 6. Record all information, observations, and actions on an Event Log Form (Form 3.2). 7. Contact the Owner’s Engineer at least twice daily to report the latest observations and conditions. If conditions change significantly, go to the re-evaluation/decision section and follow relevant steps immediately. <p><u>Owner’s Engineer</u></p> <p>Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.</p> <p><u>NC Dam Safety Staff</u></p> <p>Provide decision support and technical support to the Incident Commander as appropriate.</p>		
RE-EVALUATION / DECISION Based upon TALE 1.3		
Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:		
<ol style="list-style-type: none"> A. The event warrants downgrade to Event Level 3 if water level in lake is lowered below level of seepage. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. B. The event remains at the current Event Level 2 if no change in condition. C. The event warrants escalation to Event Level 1 if the integrity of the dam appears to be threatened. <p><i>All contacts on Notification Flow Chart shall be updated of changes</i></p>		
Based on this determination, follow the appropriate actions		
A) EVENT LEVEL DOWNGRADE	B) EVENT LEVEL 2 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1, RED SEEPAGE "Seepage with discharge greater than 10 gallons per minute" (reference Table 1.3 Level RED "Condition")	Sheet C1
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RECOMMENDED ACTIONS

1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
2. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam.
3. Well vegetated embankment dams can withstand overtopping for a short amount of time. Monitor for changes in water flow as signs of the embankment eroding.
4. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public.
5. Record all information, observations, and actions on an Event Log Form (Form 3.2).

Owner's Engineer

Provide decision support and technical support to **Owner/EAP Coordinator** as appropriate.
 Advise **Owner/EAP Coordinator** of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

EVALUATION / DECISION Based upon TALE 1.3

Evaluate the situation as events progress, or whenever conditions change. Determine whether:

- A. *The event warrants downgrade if seepage stopped AND water level in lake is lowered below level of seepage YET 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.*
- B. *The event remains at the current Event Level 1 (No change in situation).*
- C. *Event may be Terminated only when either:*
 - *The dam has failed AND there is no longer a threat to the downstream public and determined by NC Dam Safety staff safe to impound water*

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) EVENT/LEVEL REMAINS THE SAME	C) TERMINATION
Monitor conditions until damage is repaired	Continue recommended actions on this sheet	Go to Termination and Follow-up (STEP4)

LEVEL: 2, YELLOW SINKHOLES “Observation of new sinkhole in reservoir area or on embankment” (reference Table 1.3 Level YELLOW “Condition”)		Sheet D2
RECOMMENDED ACTIONS		
<ol style="list-style-type: none"> 1. Make sure notifications on Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and change in diameter or depth of sinkhole every two hours. 3. If conditions permit: 4. If the inflow source of the seepage is within the reservoir, plug the flow with available material – hay bayles, bentonite, or plastic sheeting 5. Place an inverted filter (layered sand and gravel) over the exit area of soil loss to hold soil material in place. 6. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level until below bottom of sinkhole. Caution must be taken to not add additional flooding to properties downstream. 7. Monitor Off-site areas “and instrumentation” (Applicable to all Action Data Sheets with reference to Instrumentation). 8. Record all information, observations, and actions on an Event Log Form (Form 3.2). 9. Contact the Owner’s Engineer at least twice daily to report the latest observations and conditions. If conditions change significantly, go to the re-evaluation/decision section and follow relevant steps immediately. <p><u>Owner’s Engineer</u></p> <p>Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.</p> <p><u>NC Dam Safety Staff</u></p> <p>Provide decision support and technical support to the Incident Commander as appropriate.</p>		
RE-EVALUATION / DECISION Based upon TALE 1.3		
<p>Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:</p> <ol style="list-style-type: none"> A. The event warrants downgrade to Event Level 3 If water level in lake is lowered below bottom level of sinkhole. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. B. The event remains at the current Event Level 2 if no change in condition. C. The event warrants escalation to Event Level 1 if the sinkhole enlarges or new sinkholes begin to form <p><i>All contacts on Notification Flow Chart shall be updated of changes</i></p>		
Based on this determination, follow the appropriate actions		
A) EVENT LEVEL DOWNGRADE	B) EVENT LEVEL 2 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1, RED SINKHOLES “Rapidly enlarging sinkhole or new sinkholes forming”
 (reference Table 1.3 “Level RED “Condition”)

Sheet
 D1

RECOMMENDED ACTIONS

1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
2. Recommend to the 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 3.2).

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the Incident Commander as appropriate.

EVALUATION / DECISION based upon TABLE 1.3

Evaluate conditions CONTINUOUSLY Using Table 1.3, determine if:

- A. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of sinkhole YET 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.
- B. 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 safe to impound water or;
 - The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) TERMINATION	
Monitor conditions until damage is repaired	Go to Termination and Follow-up (STEP4)	

LEVEL: 3, GREEN **EMBANKMENT CRACKING**. “New cracks in the embankment greater than ¼-inch wide without seepage” (reference Table 1.3 Level GREEN “Condition”)

Sheet
E3

RECOMMENDED ACTIONS

1. Make sure Level 3 GREEN notifications on Figure 2.1 have been made.
2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and crack widths for movement or seepage daily.
3. Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level to relieve pressure on the embankment. Caution must be taken to not add additional flooding to properties downstream.
4. Monitor Off-site areas “and instrumentation” (Applicable to all Action Data Sheets with reference to Instrumentation).
5. Record all information, observations, and actions on an Event Log Form (Form 3.2).
6. Contact the **Owner’s Engineer** at least daily to report the latest observations and conditions. If conditions change significantly, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner’s Engineer

Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3, determine whether:

1. The event can be terminated if the dam is determined to no longer pose an immediate threat to downstream by NC Dam Safety staff.
2. The event remains at the current Event Level 3 (No change in situation).
3. The event warrants escalation, determined using Table 1.3 if cracks enlarging or water begins to flow from cracks.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT LEVEL 3 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Termination and Follow-up (Step 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Steps 2&3

LEVEL: 2, YELLOW EMBANKMENT MOVEMENT “Visual movement/slippage of the embankment slope” (reference Table 1.3 Level YELLOW “Condition”)		Sheet F2
RECOMMENDED ACTIONS		
<ol style="list-style-type: none"> 1. Make sure notifications on Figure 2.2 have been made using pre-scripted message. 2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and development of new cracks or movement every two hours. 3. If conditions permit: <ul style="list-style-type: none"> • Use “a bottom drain, installed siphon or pumps located on-site” to provide additional drawdown of the lake level. Caution must be taken to not add additional flooding to properties downstream. • Stabilize slides on the downstream slope by weighting the toe area below the slide with additional soil, rock or gravel. 4. Monitor Off-site areas “and instrumentation” (Applicable to all Action Data Sheets with reference to Instrumentation). 5. Record all information, observations, and actions on an Event Log Form (Form 3.2). 6. Contact the Owner’s Engineer at least twice daily to report the latest observations and conditions. If conditions change significantly, go to the re-evaluation/decision section and follow relevant steps immediately. <p><u>Owner’s Engineer</u></p> <p>Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.</p> <p><u>NC Dam Safety Staff</u></p> <p>Provide decision support and technical support to the Incident Commander as appropriate.</p>		
RE-EVALUATION / DECISION Based upon TALE 1.3		
Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3, determine whether:		
<ol style="list-style-type: none"> A. The event warrants downgrade to Event Level 3 if water level in lake is lowered below level of dam embankment. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. Event may not be terminated until repairs are made according to NC regulations. B. The event remains at the current Event Level 2 if no change in condition. C. The event warrants escalation to Event Level 1 if the integrity of the dam appears to be threatened by sudden or rapidly proceeding slides. <p><i>All contacts on Notification Flow Chart shall be updated of changes</i></p>		
Based on this determination, follow the appropriate actions		
A) EVENT LEVEL DOWNGRADE	B) EVENT LEVEL 2 (NO CHANGE)	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1, RED EMBANKMENT MOVEMENT “sudden or rapidly proceeding slides of the embankment slopes” (reference Table 1.3 Level RED “Condition”)

Sheet
F1

RECOMMENDED ACTIONS

5. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
6. Recommend to the Incident Commander **IMMEDIATE EVACUATION** downstream of the dam.
7. Stay a safe distance away from the dam. The immediate concern is the safety of the downstream public.
8. Record all information, observations, and actions on an Event Log Form (Form 3.2).

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the Incident Commander as appropriate.

EVALUATION / DECISION based upon TABLE 1.3

Evaluate conditions CONTINUOUSLY Using Table 1.3, determine if:

- A. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET 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.
- B. Event may be Terminated only when either:
 - The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) TERMINATION	
Monitor conditions until damage is repaired	Go to Termination and Follow-up (STEP4)	

LEVEL: 3, GREEN INSTRUMENTS "Instrumentation readings beyond predetermined values" (reference Table 1.3 Level GREEN "Condition")

Sheet
G3

RECOMMENDED ACTIONS

1. Make sure Level 3 GREEN notifications on Figure 2.1 have been made.
2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks. Monitor water levels and instrument readings for changes or anomalies.
3. Record all information, observations, and actions on an Event Log Form (Form 3.2).
4. Contact the **Owner's Engineer** at least daily to report the latest observations and conditions.
5. If instrumentation readings at the dam are determined to indicate a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner's Engineer

Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3, determine whether:

- A. The event can be terminated if instrumentation readings back to normal or if instrument reading determined to be invalid.
- B. The event remains at the current Event Level 3 (No change in situation).
- C. The event warrants escalation, determined using Table 1.3 if instrumentation readings at the dam are determined to indicate a potentially dangerous situation.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT/LEVEL REMAINS THE SAME	C) EVENT LEVEL ESCALATION
Go to Termination and Follow-up (Section 4)	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Steps 2&3

LEVEL: 3, GREEN EARTHQUAKE “Measurable earthquake felt or reported and dam appears to be stable” (reference Table 1.3 Level 3 GREEN “Condition”)

Sheet
H3

RECOMMENDED ACTIONS

1. Make sure Level 3 GREEN notifications on Figure 2.1 have been made.
2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks.
3. Record all information, observations, and actions on an Event Log Form (Form 3.2).
4. Be prepared for additional aftershocks.
5. Contact the **Owner's Engineer** to report the latest observations and conditions.
6. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner's Engineer

Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:

- A. The event can be terminated if the dam is determined to be stable and a sufficient amount of time has passed when additional aftershocks are not expected.
- B. The event remains at the current Event Level 3 until complete inspection has determined the dam to be stable.
- C. The event warrants escalation if inspection has determined a potentially dangerous situation.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions below.

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT/LEVEL REMAINS THE SAME	C) EVENT LEVEL ESCALATION
Recommend Termination of Event to IC. Go to STEP 4	Continue recommended actions on this sheet	Go to Event Level 2 or Event Level 1 Steps 2&3

LEVEL: 1 RED EARTHQUAKE “Earthquake resulting in visible damage to the dam or appurtenances” (reference Table 1.3 Level RED “Condition”)

Sheet
H1

RECOMMENDED ACTIONS

1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
2. Recommend to the 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 3.2).

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the Incident Commander as appropriate.

EVALUATION / DECISION based upon TABLE 1.3

Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:

- C. The event warrants downgrade if There is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET 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.
- D. Event may be Terminated only when either:
 - The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL 1	B) TERMINATION	
Continue recommended actions on this sheet	Go to Termination and Follow-up (Section 4)	

LEVEL: 3, GREEN SECURITY THREAT “Unverified bomb threat” (reference Table 1.3 Level GREEN “Condition”)

Sheet
13

RECOMMENDED ACTIONS

1. Notify Local Law Enforcement to help evaluate the situation.
2. Access the dam only if area has been cleared by Law Enforcement.
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 3.2).
5. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:

- A. The event can be terminated if the dam is determined to be stable and a sufficient amount of time has passed when additional aftershocks are not expected.
- B. The event warrants escalation if inspection has determined a potentially dangerous situation.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions below.

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT LEVEL ESCALATION	
Recommend Termination of Event to IC. Go to STEP 4	Go to Event Level 2 or Event Level 1 Steps 2&3	

LEVEL: 2, YELLOW SECURITY THREAT “Verified bomb threat that, if carried out, could result in damage to the dam or appurtenances with no impacts to the functioning of the dam” (reference Table 1.3 Level YELLOW “Condition”)

Sheet 12

RECOMMENDED ACTIONS

1. Notify Local Law Enforcement to help evaluate the situation.
2. Access the dam only if area has been cleared by Law Enforcement.
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 3.2).
5. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:

- A. The event warrants downgrade to Event Level 3 if threat removed YET damage to the dam or appurtenances in need of repair. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3.
- B. The event remains at the current Event Level 2 if threat not yet removed.
- C. The event warrants escalation to Event Level 1 if bomb is detonated or has been determined that detonation could cause sudden failure.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions below.

Based on this determination, follow the appropriate actions

A) EVENT LEVEL DOWNGRADE	B) EVENT/LEVEL REMAINS THE SAME	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1 RED Security Threat “detonated bomb resulting in visible damage to the dam or appurtenances” (reference Table 1.3 Level RED “Condition”)

Sheet 11

RECOMMENDED ACTIONS

1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
2. Recommend to the 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 3.2).

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the Incident Commander as appropriate.

EVALUATION / DECISION based upon TABLE 1.3

Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:

- E. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET 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.
- F. Event may be Terminated only when either:
 - The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL 1	B) TERMINATION	
Continue recommended actions on this sheet	Go to Termination and Follow-up (Section 4)	

LEVEL: 3, GREEN **SABOTAGE/VANDALISM** “Damage to or modification to the dam or appurtenances with no impacts the functioning of the dam.” (reference Table 1.3 Level GREEN “Condition”)

Sheet J3

RECOMMENDED ACTIONS

Owner/EAP Coordinator

1. Notify Local Law Enforcement to help evaluate the situation.
2. Make sure Level 3 GREEN notifications on Figure 2.1 have been made.
3. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks.
4. Record all information, observations, and actions on an Event Log Form (Form 3.2).
5. Contact the **Owner’s Engineer** to report the latest observations and conditions.
6. If inspection has determined a potentially dangerous situation, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the **Incident Commander** as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:

- C. The event can be terminated if the dam is determined to be stable and a sufficient amount of time has passed when additional aftershocks are not expected.
- D. The event warrants escalation if inspection has determined a potentially dangerous situation.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions below.

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT LEVEL ESCALATION	
Recommend Termination of Event to IC. Go to STEP 4	Go to Event Level 2 or Event Level 1 Steps 2&3	

LEVEL: 2, YELLOW SABOTAGE/VANDALISM “Damage to or modification to the dam or appurtenances that impacts the functioning of the dam” (reference Table 1.3 Level YELLOW “Condition”)		Sheet J2
RECOMMENDED ACTIONS		
<p>Owner/EAP Coordinator</p> <ol style="list-style-type: none"> 1. Notify Local Law Enforcement to help evaluate the situation. 2. Access the dam only if area has been cleared by Law Enforcement. 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 3.2). 5. If inspection has determined a potentially dangerous situation, go to the re-evaluation/decision section and follow relevant steps immediately. 		
<p>Owner’s Engineer</p> <p>Provide decision support and technical support to <u>Owner/EAP Coordinator</u> as appropriate. Advise <u>Owner/EAP Coordinator</u> of dangerous conditions at the dam.</p>		
<p>NC Dam Safety Staff</p> <p>Provide decision support and technical support to the Incident Commander as appropriate.</p>		
RE-EVALUATION / DECISION Based upon TALE 1.3		
<p>Evaluate conditions at least twice daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:</p> <ol style="list-style-type: none"> A. The event warrants downgrade to Event Level 3 if threat removed YET damage to the dam or appurtenances in need of repair. All contacts on Event Level 2 Notification Flow Chart shall be notified of downgrade to Event Level 3. B. The event remains at the current Event Level 2 if threat not yet removed. C. The event warrants escalation to Event Level 1 if has been determined that sudden failure may occur. <p><i>All contacts on Notification Flow Chart shall be updated of changes</i></p>		
Based on this determination, follow the appropriate actions		
A) EVENT LEVEL DOWNGRADE	B) EVENT/LEVEL REMAINS THE SAME	C) EVENT LEVEL ESCALATION
Go to Event Level 3 Steps 2&3	Continue recommended actions on this sheet	Event Level 1 RED Steps 2&3

LEVEL: 1 RED SABOTAGE/VANDALISM “Uncontrolled water release” (reference Table 1.3 Level RED “Condition”)

Sheet
J1

RECOMMENDED ACTIONS

Owner/EAP Coordinator

1. Make sure Level 1 RED notifications on Figure 2.3 using pre-scripted message.
2. Recommend to the 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 3.2).

Owner’s Engineer

Provide decision support and technical support to Owner/EAP Coordinator as appropriate. Advise Owner/EAP Coordinator of dangerous conditions at the dam.

NC Dam Safety Staff

Provide decision support and technical support to the Incident Commander as appropriate.

EVALUATION / DECISION based upon TABLE 1.3

Evaluate conditions CONTINUOUSLY **Using Table 1.3**, determine if:

- G. The event warrants downgrade if there is no longer an immediate impending threat of dam failure and water level in lake is lowered below bottom level of embankment fill YET 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.
- H. Event may be Terminated only when either:
 - The dam has failed AND there is no longer a threat to the downstream public as determined by NC Dam Safety staff.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) EVENT LEVEL 1	B) TERMINATION	
Continue recommended actions on this sheet	Go to Termination and Follow-up (Section 4)	

LEVEL: 3, GREEN **BLOCKED CULVERTS / SPILLWAY** “Debris is blocking a spillway pipe, causing lake level to rise” (reference Table 1.3 Level GREEN “Condition”) **Sheet K3**

RECOMMENDED ACTIONS

Owner/EAP Coordinator

1. Make sure Level 3 GREEN notifications on Figure 2.1 have been made.
2. The Dam Owner should make careful observation and inspection of every part of the dam; this should be done without compromising the safety of anyone performing these tasks.
3. Record all information, observations, and actions on an Event Log Form (Form 3.2).
4. Be prepared for additional aftershocks.
5. Contact the *Owner's Engineer* to report the latest observations and conditions.
6. If blockage cannot be removed, go to the **re-evaluation/decision section** and follow relevant steps immediately.

Owner's Engineer

Review all pertinent information in order to recommend appropriate actions to the EAP Coordinator in conjunction with NC Dam Safety Staff. Provide oversight to corrective actions or work as required. Observe conditions in site periodically and provide decision support as appropriate.

NC Dam Safety Staff

Provide decision support and technical support to the *Incident Commander* as appropriate.

RE-EVALUATION / DECISION Based upon TALE 1.3

Evaluate conditions at least daily, or whenever conditions change significantly. Using Table 1.3 and/or Table 3.1, determine whether:

- A. The event can be terminated once debris is removed and water level has returned to normal pool.
- B. The event remains at the current Event Level 3. No change in severity - water level is not rising.
- C. The event warrants escalation according to Table 1.3 if blockage cannot be removed and water level is rising.

All contacts on Notification Flow Chart shall be updated of changes

Based on this determination, follow the appropriate actions

A) TERMINATION	B) EVENT/LEVEL REMAINS THE SAME	C) EVENT LEVEL CHANGE
Go to Termination and Follow-up (Section 4)	Continue recommended actions on this sheet	Go to Table 1.3 to Re-Evaluate

FORM 3.2

Unusual or Emergency Event Log

(To be completed during the emergency)

Dam name:

County:

When and how was the event detected?

Weather conditions:

General description of the emergency situation:

Emergency level determination:

Made by:

Actions and Event Progression

Date	Time	Action/event progression	Recorded by

STEP 4 (Termination and Follow-up side tab inserted)

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SECTION 4

TERMINATION AND FOLLOW-UP

Once EAP operations have begun under Event Level 3, 2, or 1, the EAP operations must eventually be terminated and follow-up procedures completed. As shown on Figure i, EAP operations can only be terminated after completing operations under Event Level 3 or 1. If Event Level 2 is declared, the operations must be designated Event Level 3 or 1 before terminating the EAP operations.

4.1 Termination Responsibilities

4.2 Follow-up

Event Level 3, GREEN:

Event Level 2, YELLOW or Level 1, RED:

Event That Has Caused Loss of Life, Injury or Property Damage:

MAPS, FIGURES, SUPPORTING DATA side tab inserted

SECTION 5

MAPS, FIGURES AND SUPPORTING DATA

- Directions and Emergency Access Routes Map (Figure 5.1)
- Residents/Businesses/Roads/Infrastructure at Risk (Table 5.1)
- Downstream Inundation Map (Figure 5.3)
- Summary Information about Dam (Figure 5.4)

Include any other maps, charts or figures deemed relevant in the case of an emergency event.

FIGURE 5.1

Directions and Emergency Access Routes Map

Insert Map visually showing safe route for responders to access the site of the dam without crossing danger zones.

Directions to dam from major intersection or nearest Fire Station:

Brief description of the visual access routes map. _____

People at Risk top tab inserted

Replace Page with divider

TABLE 5.1
Residents/Businesses/Roads/Infrastructure at Risk

Brief summary of number of entities within hazard zone. Whenever possible, major streets, railroads, and other well-known features should be depicted on the downstream inundation map or downstream hazards map.

Entity No.	Resident/business/roads or other impacted entity	Property Address	Phone No. with area code	Distance downstream from dam (mi)
X	Name of entity	Address/location of entity	XXX-XXX-XXXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam
X	Name of entity	Address/location of entity	XXX	Distance from dam

(Use additional sheets if necessary)

MAPS top tab inserted

FIGURE 5.3 Inundation Study

Inundation Map vs. Evacuation Area

Inundation maps have been developed from best available information using reasonable assumptions and standardized methods. They are approximations of the maximum water surface extents resulting from a complete dam breach and draining of the full reservoir. Inundation maps are empirical hydrologic and hydraulic simulations that can only be field verified in the event of an actual breach.

Evacuation areas and call lists should take into consideration the anticipated local impacts of flooding; knowledge of local infrastructure, both occupancy and ownership; and potentially interrupted services or cut-off access, which would be caused by dam failure. Depending upon actual circumstances, appropriate alert and evacuation areas could be more or less extensive than the simulated inundation zones.

***NOTE:** Please provide all pertinent supporting documentation, describing the process used to develop the inundation map. This may include: methodology used, assumptions made, modeling software (if any), associated inputs, legend table, topographic contours, and scale size. Specifically, Simplified Inundation Mapping System (SIMS) method map should include a selected interval (2-ft recommended) topographic contours and cross-section lines that reflect maximum breach wave heights to ensure validity of the inundation zone.

(If the image quality of the Inundation Map(s) are poor when uploaded to this document, please submit the Inundation Map(s) and all supporting documentation as a separate attachment to DamSafety@ncdenr.gov)

FIGURE 5.4**NC Dam Inventory Data***(Please provide your source for the data.)*

Dam Name:	Crest Length (ft.):
State ID:	Crest Width (ft.):
NID ID:	Upstream Slope (XH:1V):
Hazard Classification:	Downstream Slope (XH:1V):
Longitude & Latitude:	Storage Capacity at Normal Pool (ac-ft):
County:	Maximum Storage Capacity at Top of Dam (ac-ft):
River/Stream:	Minimum Flow Requirement (cfs.):
Quadrangle:	Year Constructed:
Drainage Area (ac. or mi²):	Estimated Design Life of the Dam:
Surface Area at Normal Pool (ac.):	Source:
Surface Area at Maximum Pool (ac.):	
Upstream Face Protection:	
Downstream Face Protection:	
Structural Height (ft.):	
Crest Elevation (NAVD88) (ft.):	
Hydraulic Height (ft.):	
Normal Pool Elevation (NAVD88) (ft.):	
Freeboard at Normal Pool (ft.):	
Freeboard after Design Storm Event (ft.):	

Spillway Information

Type(s):

Size(s):

Material(s):

Length(s) & Width(s):

Crest Elevation(s):

Inlet Invert Elevation(s):

Outlet Invert Elevation (s):

Discharge Capacity:

Insert side tab for

APPENDICES

APPENDIX A

Roles and Responsibilities

Dam Owner/Operator:

- As soon as an unusual or emergency event is observed or reported, immediately determine the emergency level (see Emergency Levels tab).
 - **Level 1, RED Emergency:** Urgent!! Dam failure appears imminent or is in progress
 - **Level 2, YELLOW Emergency:** potential dam failure situation, rapidly developing
 - **Level 3, GREEN Unusual Event:** slowly developing
- Immediately notify the personnel in the order shown on the notification chart for the appropriate level (see Notification Charts tab).
- Provide updates of the situation to the Incident Commander dispatcher to assist them in making timely and accurate decisions regarding warnings and evacuations.
- Provide leadership to assure the EAP is reviewed and updated annually and copies of the revised EAP are distributed to all who received copies of the original EAP.

EAP Coordinator:

- Owner may designate responsibilities above to an EAP coordinator

Local Emergency Management:

- EAP preparation - Coordinate with local responders and dispatchers to ensure each has an opportunity for input into the EAP and each has a copy and is aware of their responsibilities.
- Assist in determination of who would be the Incident Commander for this dam.
- During an event, maintain communication with NC Dam Safety staff via the State EOC (1-800-858-0368)
- Assist owners in preparation of *Emergency access Routes Map*
- Maintain communication with media when necessary.
- When a Level 2 situation occurs:
 - Prepare response personnel for possible evacuations that may be needed if a Level 1 situation occurs.
 - Alert the public as appropriate.
- When a Level 1 situation occurs:
 - Alert the public.
 - Immediately close roads and evacuate people within and possibly adjacent to the inundation area.
- Participate in an annual review and update of the EAP.

Incident Commander:

- Serve as the primary contact person responsible for coordination of all emergency actions.
- When a Level 2 situation occurs: Prepare responders for possible evacuations that may be needed if a Level 1 situation occurs.
- When a Level 1 situation occurs:
 - Initiate warnings and order evacuation of people at risk downstream of the dam.
 - Notify local emergency management services to carry out the evacuation of people and close roads within the inundation area
- Decide when to terminate the emergency.
- Participate in an annual review and update of the EAP.

Dam Operator's Technical Representatives:

- Advise the dam owner/operator of the emergency level determination, if time permits.
- Advise the dam owner/operator of remedial actions to take if Level 2 event occurs, if time permits.
- Assist the dam Owner in preparation of *Action Data Sheets* – Table 3.1

NC State Dam Safety

- Advise the Incident Commander of the emergency level determination, if time permits.
- Provide technical and other assistance to the Incident Commander as needed.
- Advise the dam owner/operator of remedial actions to take if Level 2 event occurs, if time permits.

OTHER RESPONSIBLE PARTIES AS DEFINED

APPENDIX B

Emergency Services Contacts

Agency / Organization	Principal Contact	Address	Office Phone No. with Area Code	Alternate Telephone Numbers
NC Emergency Operations Center (After hours contact for NC Dam Safety)			1-800-858-0368	N/A
Local 911 Call Center			911	XXX-XXX-XXXX
County Emergency Management Director	Name of Director		XXX-XXX-XXXX	XXX-XXX-XXXX (24-hr)
Owner/Representative of Name of Dam	Name of owner	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX (H) XXX-XXX-XXXX (C or 24-hr)
XXXX County Sheriff	Sheriff's Name	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX (C)
Local Fire Department	Contact Name	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX
Local Police	Contact Name	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX
Local Highway Patrol	Contact Name	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX
North Carolina State Dam Safety Program (NCDENR, Division of Energy, Mineral, and Land Resources)	Any Land Quality – Dam Safety staff		Central office 919-707-9220 XXX Regional Office XXX-XXX-XXXX	NC Emergency Operations Center 1-800-858-0368
National Weather Service			XXX-XXX-XXXX	
NC Department of Transportation			XXX-XXX-XXXX	XXX-XXX-XXXX
Natural Resources Conservation Service (For NRCS Dams only)	State Engineer or District Engineer	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX (H) XXX-XXX-XXXX (C)
Local TV Station	Contact Name	Contact Address	XXX-XXX-XXXX	XXX-XXX-XXXX
Local Radio Station XXXX AM or FM	Contact Name	Contact Address	XXX-XXX-XXXX	

APPENDIX C

LOCALLY AVAILABLE RESOURCES (EQUIPMENT, LABOR, AND MATERIALS)

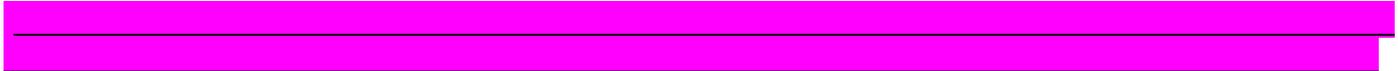
Locally available resources include: (if not available nearby, provide the nearest contacts)

Heavy Equipment Service and Rental	Sand and Gravel Supply	Ready-mix Concrete Supply
<p>Name:</p> <p>Address:</p> <p>Phone number with area code:</p>	<p>Name:</p> <p>Address:</p> <p>Phone number with area code:</p>	<p>Name:</p> <p>Address:</p> <p>Phone number with area code:</p>
Pumps	Diving Service	Sand Bags
<p>Name:</p> <p>Address:</p> <p>Phone number with area code:</p>	<p>Name:</p> <p>Address:</p> <p>Phone number with area code:</p>	<p>Name:</p> <p>Address:</p> <p>Phone number with area code:</p>

APPENDIX D
EAP REVIEW, REVISION AND PERIODIC TEST

It is extremely imperative this EAP document be reviewed annually and updated to stay current. A periodic test of the EAP procedures is recommended every 5 years.

EAP Annual Review



EAP Periodic Test

Revision

APPENDIX F

EAP DISTRIBUTION AND ACCEPTANCE

By my signature, I acknowledge that I, or my representative, have reviewed this plan and concur with the tasks and responsibilities assigned herein for my organization and me.

Copy Number	Organization	ACCEPTANCE SIGNATURE
1	Owner's name Address Phone Number Owner's E-mail	
2	County Emergency Management Contact name Address Phone Number Contact E-mail	
3 And 4	North Carolina Dam Safety Program 1612 Mail Service Center Raleigh, North Carolina 27699-1612 (919)707-9220	
■	Any Other Stake-Holder in the safety of this dam Likely responding agency, such as local fire department or law enforcement agency	

APPENDIX G

ENGINEERING DOCUMENTS

Engineering Records (if available)

- Reservoir Area – Capacity Curve
- Principal Spillway Rating Curve
- Emergency Spillway (Top of Dam) Rating Curve
- Annotated Site Pictures
- Plan View of the Dam

If there are any issues with adding additional pages for Appendix G, you may include all Engineering Documents as an attachment when submitting the EAP to DamSafety@ncdenr.gov.

APPENDIX G
ENGINEERING DOCUMENTS

Appendix H

Glossary

Abutment	The 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.
Appurtenances	Structures incident to or annexed to dams essential to the proper operation, maintenance or functioning of the dam. This includes such structures as spillways, low level outlet works and water conduits, such as tunnels, pipelines or penstocks, either through a dam or its abutments.
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.
Control section	An usually level segment in the profile of an open channel spillway above which water in the reservoir discharges through the spillway.
Dam	An artificial barrier generally constructed across a watercourse for the purpose of impounding or diverting water.
Emergency spillway	The appurtenant structure that provides the controlled conveyance of excess water through, over, or around the dam.
Incident Commander	(IC) is responsible for directing and/or controlling resources by virtue of explicit legal, agency, or delegated authority. The individual responsible for the overall management of the response is called the Incident Commander. For responses under the National Response System (NRS), the pre-designated On-Scene Coordinator (OSC) generally assumes the role of Incident Commander.
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 spillway structures. Examples include seepage measuring weirs, piezometers, inclinometers and survey monuments.
Low level outlet works	An appurtenant structure, usually consisting of a pipe through the embankment or principal spillway structure equipped with a valve, whose purpose is to allow lowering the lake level.
Principal spillway	The appurtenant structure that conveys normal inflow through or around the embankment.
Reservoir	The body of water impounded or potentially impounded by the dam.
Seepage	The natural movement of water through the embankment, foundation, or abutment of the dam.
SERT	State Emergency Response Team , Collection of State Agencies, Non-profit and voluntary organizations which provide support to local government agencies in their response, recovery, preparedness & mitigation of natural & technological hazard.
Unusual Event	An event which takes place, or a condition which develops, that is not normally encountered in the routine operation of the dam and reservoir, or necessitates a variation from the operating procedures.