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MEMORANDUM

December 14, 2021

To: Sheila Jones, Supervisor, District I  
Trey Baxter, Supervisor, District II  
Gerald Steen, Supervisor, District III  
Karl Banks, Supervisor, District IV  
Paul Griffin, Supervisor, District V

From: Tim Bryan, P.E., PTOE  
County Engineer

Re: Emergency Action Plan  
Sulphur Spring Park Lake

The Engineering Department requests that the Board acknowledge this updated Emergency Action Plan for Sulphur Springs Park Lake in Madison County, Mississippi.

SHEILA JONES  
District One

TREY BAXTER  
District Two

GERALD STEEN  
District Three

KARL BANKS  
District Four

PAUL GRIFFIN  
District Five

**EMERGENCY ACTION PLAN**

**FOR**

**SULPHUR SPRINGS PARK LAKE**

**STATE ID MS02880**

**MADISON COUNTY, MISSISSIPPI**

**Updated by:**  
**Madison County Engineering Department**  
**December 2021**

**Access to the Dam during Emergencies:**

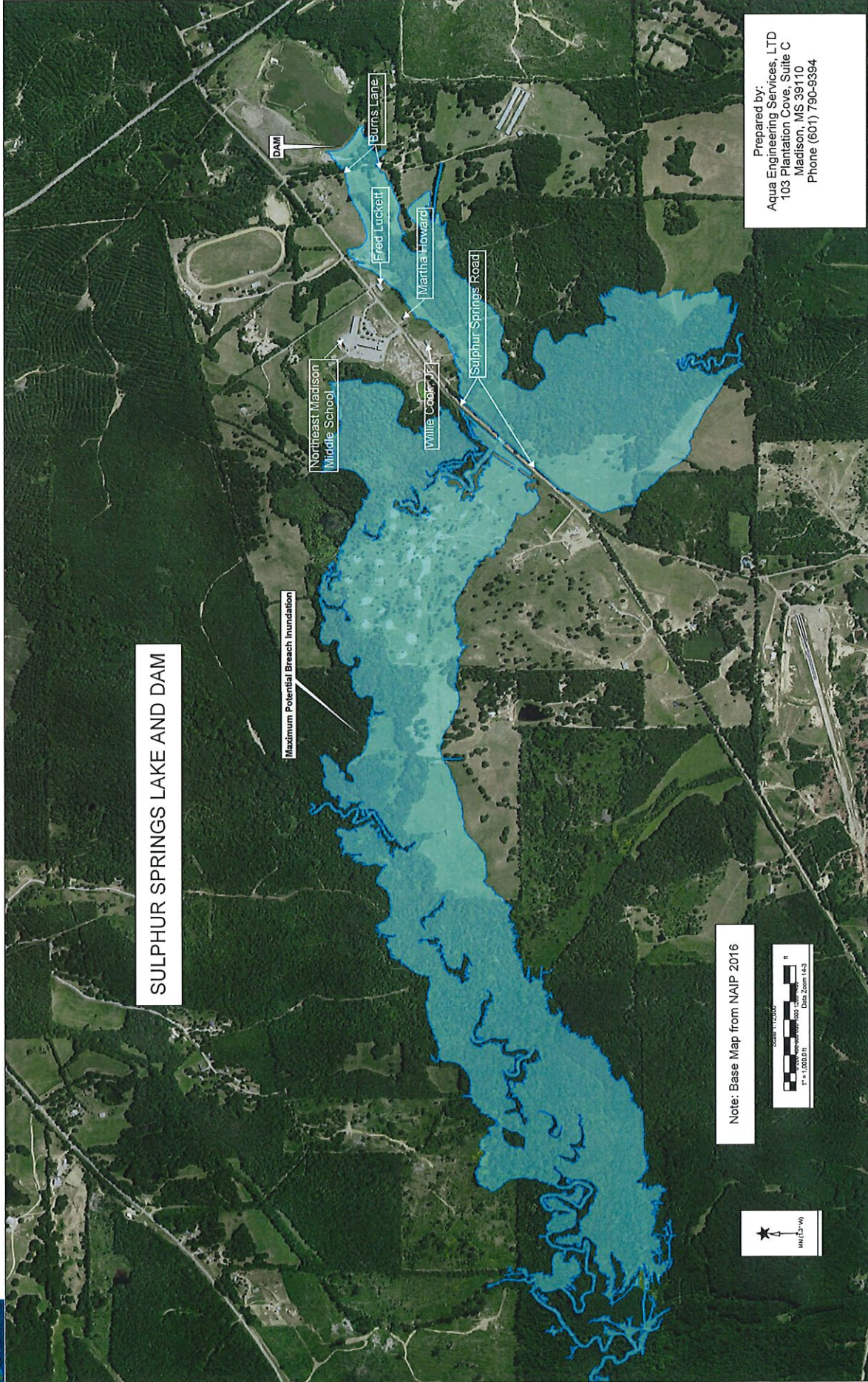
Primary access to the site is by Mississippi Highway 17. The dam may also be reached by Sulphur Springs Road. With the exception of Sulphur Springs Road, none of these routes is susceptible to inundation in the event of dam failure.

*Initially Prepared by:*  
*Thompson Engineering*  
*181 Lameuse Street, Biloxi, MS 39530*  
*228.374.1130*  
*March, 2017*

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# SULPHUR SPRINGS LAKE AND DAM



Prepared by:  
 Aqua Engineering Services, LTD  
 103 Plantation Cove, Suite C  
 Madison, MS 39110  
 Phone (601) 790-9394

Note: Base Map from NAIP 2016



**NEWS RELEASE:**

The owners of Sulphur Springs Park Lake Dam have announced that it is in imminent danger of failure. The dam is located southeast of the intersection of Sulphur Springs Road and MS Highway 17, in Madison County. Roads within the area which will be affected are: Sulphur Springs Road south of Northeast Madison Middle School and Burns Lane. Residents along these roads should evacuate to high ground immediately.

**ROADS TO BE CLOSED:**

Burns Lane and Sulphur Springs Road south of Northeast Madison Middle School.

**RESIDENCES TO BE EVACUATED:**

Northeast Madison Middle School  
820 Sulphur Springs Road, Canton, MS  
601.855.2406

Willie Cook, Jr.  
807 Sulphur Springs Road, Canton, MS  
601.859.5648  
601.859.7533

Martha Howard  
819 Sulphur Springs Road, Canton, MS  
601.855.7580

Fred Lockett  
839 Sulphur Springs Road, Canton, MS  
601.859.7372

## I. EMERGENCY DETECTION, EVALUATION AND CLASSIFICATION

Upon discovery of a problem at a dam, the dam owner and/or on-site personnel should decide which category the emergency situation falls under. **If there is any uncertainty about the classification of the emergency, the situation should be classified as a Warning, unless there is an uncontrolled release of water which would constitute an Emergency.** The four dam emergency classification types are outlined below:

- **Emergency:** Uncontrolled Release of Water
- **Warning:** Failure Could Happen at Any Time
- **Watch:** Potential for Failure Exists
- **Advisory:** Conditions that could lead to a failure situation have occurred

These conditions are further defined in the following sections.

### Emergency – Uncontrolled Release of Water

The dam is failing and there is an uncontrolled release of water.

### On-Site Personnel Plan of Action

Move a safe distance away from the dam and call the following people and explain to them that the dam is failing and downstream residents should be evacuated immediately:

- a. 911
- b. County Emergency Manager 601.859.4188. The county emergency manager should notify the National Weather Service 601.939.2786 to issue a Flash Flood Warning. In the case of dams with large populations at risk, the NWS may issue a Flash Flood Emergency.
- c. Downstream Residents to be evacuated as shown on page 4 of this plan.

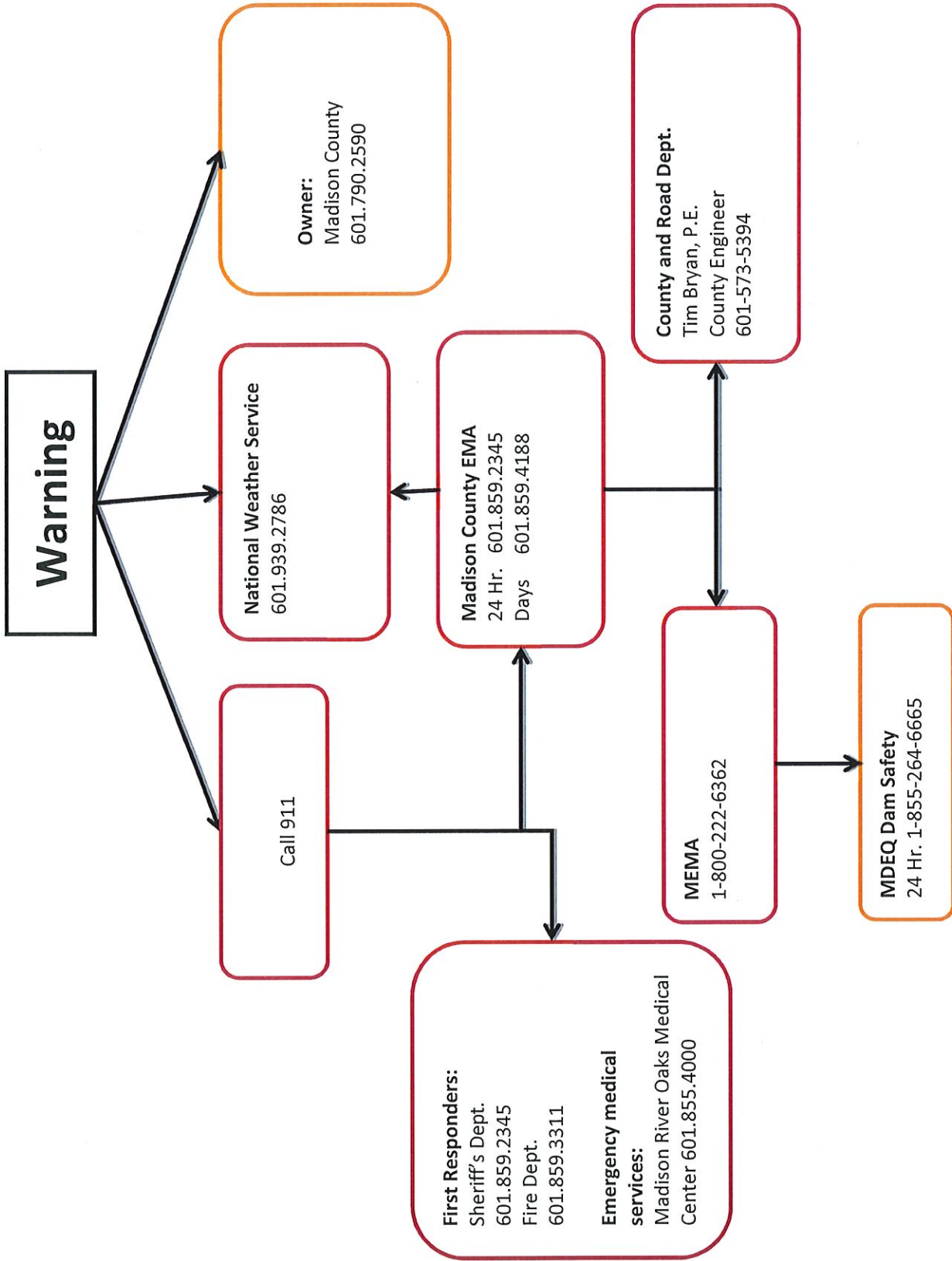
## **Warning – Failure Could Happen at Any Time**

### **Common warning signs are:**

- a. whirlpool developing in the lake near the dam
- b. a major slide of material in either face of the dam that reaches the top of the slope or extends into the crest of the dam
- c. overtopping
- d. (any other conditions that may constitute imminent failure or downstream flooding for this particular dam, like activation of emergency spillway)

### **On-Site Personnel Plan of Action**

- 1) Make the necessary phone calls as shown in the flowchart on Page 6. During the calls do the following:
  - a. Explain that the dam could fail at any time.
  - b. State you are classifying this as an imminent failure. In this case, a Flash Flood Warning should be issued by the National Weather Service. If needed, relay the News Release on Page 4 of this plan.
  - c. Refer them to the inundation map and downstream contact list for this EAP to determine which area should be evacuated.
  - d. Give them the name and number of someone who can be called back for any follow-up questions.
- 2) If possible, notify anyone in the nearby vicinity of the dam to evacuate and move back a safe distance from the dam and inundation area.





## Watch - Potential for Failure Exists

### Common warning signs are:

- a. seepage found that increases in flow or new seepage points develop while situation is being monitored
- b. sand boils (water exiting the ground surface with enough velocity to cause the soil/water mixture to appear to be boiling) that develop downstream of the dam, note that a boil that steadily increases in diameter or appears to boiling more vigorously because of rapidly increasing flow would move the situation from a Watch to an Emergency
- c. piping (a concentrated flow of water with sufficient velocity to transport soil particles – generally indicated by an identifiable hole, or “pipe”, surrounded by a cone of soil) note that an increase in the diameter of the “pipe” or rapidly increasing flow would move the situation from a Watch to an Emergency
- d. slides of material that only affect the face of the dam and have not affected or progressed into or under the crest of the dam, or gullies forming in the face of the dam sinkholes found in the dam
- e. Water levels nearing the top of the dam and steadily increasing. This includes activation of the emergency spillway if downstream residents could be flooded.
- f. (any other conditions that may constitute a potential failure situation)

**NOTE: Discovery of a sand boil or evidence of piping in the dam face or in the vicinity of the toe of the dam should cause the observer to immediately expand the area of surveillance to include all areas, particularly areas that are at a lower elevation than the observed problem, within 200 to 250 feet of the downstream toe of the dam. Also, if an earthquake occurs and registers more than 6.0 in the general area of the state where your dam is located then the dam should be inspected as soon as possible and the lake level drawn down 1/3 to 1/2 of the greatest depth of the lake until an engineer can inspect the dam for damage.**

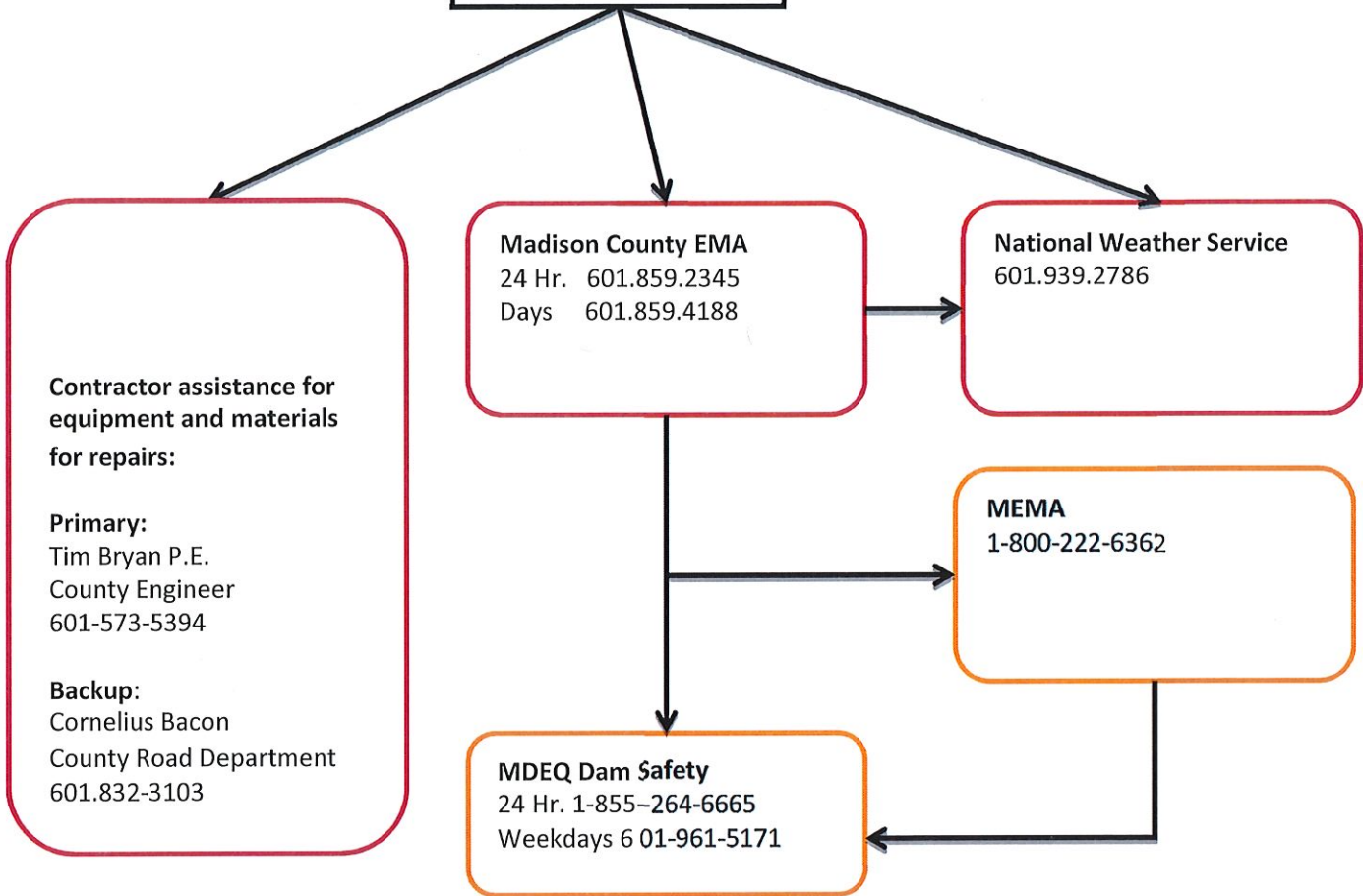
### On-Site Personnel Plan of Action

- 1) Make the necessary phone calls as shown in the flowchart on Page 9. During the calls do the following:
  - a. Explain the problems with the dam.
  - b. State you are classifying this as a potential failure. In this case, a Flash Flood Watch should be issued by the National Weather Service. If needed, relay the News Release on Page 4 of this plan.

- c. Refer them to the inundation map and downstream contact list for this EAP to determine which area should be notified of the potential need for evacuation. In some cases, the County EMA may wish to issue a voluntary evacuation notice.
  - d. Give them the name and number of someone who can be called back for any follow-up questions.
- 2) Work with the Engineer, Contractor, and MDEQ Dam Safety to try and prevent failure of the dam.

**Note: At any point if conditions worsen at the dam, this emergency should immediately be re-classified as a Warning. On-Site personnel should dial 911 and notify the National Weather Service to issue a Flash Flood Warning.**

# Watch



## **Advisory – Conditions that could Lead to a Failure Have Occurred**

### **Some conditions that could lead to a failure:**

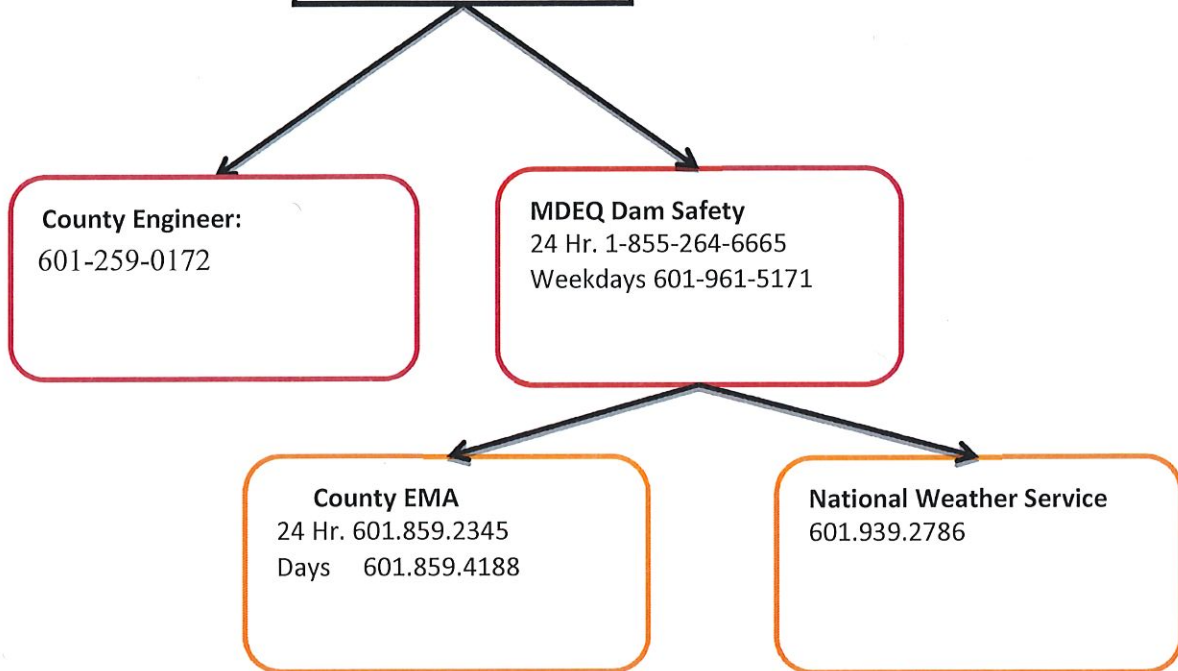
- a. Seepage that has recently developed.
- b. Excessive rainfall that may exceed the capacity of the spillways. Sulphur Springs Park Lake Dam should be monitored when rainfall amounts exceed 9.2 inches within 24-hrs.

### **On-Site Personnel Plan of Action**

- 1) Make the necessary phone calls as shown in the flowchart on Page 11. During the calls do the following:
  - a. Explain the problems with the dam. If this advisory is due to excessive rainfall, you should also contact the National Weather Service at 601-939-2786.
  - b. Give them the name and number of someone who can be called back for any follow-up questions.
- 2) Work with the consulting engineer and MDEQ Dam Safety to determine a path forward.

**Note: If water levels are rapidly rising due to a storm event that is expected to exceed the capacity of the spillways, this emergency should immediately be re-classified as a Warning and the steps shown under the Warning section of this EAP should be implemented. If seepage is increasing in flow or new seepage points are developing, this emergency should be re-classified as a Watch and the steps shown under the Watch section of this EAP should be implemented.**

# Advisory



## **II. LOCATION AND DESCRIPTION OF DAM AND OUTLET WORKS**

Sulphur Springs Park Lake Dam is located in the Madison County, Mississippi. The dam owner is Madison County, MS (hereafter referred to as “the owner”). The primary function of the lake is recreation for the citizens of Madison County, MS. The dam was constructed in 2015. The dam and lake characteristics were determined by topographic and field surveys. At its normal pool elevation of 290 ft., Sulphur Springs Park Lake Dam impounds approximately 39 acre-feet with a surface area of about 10.3 acres.

The principal spillway is located at the south end of the lake. The principal spillway consists of a rip rap channel and will carry a maximum flow of 395 cubic feet per second (cfs). The emergency spillway is the same as the principle spillway and has a maximum designed discharge of 873 cfs.

## **III. DAM BREACH ANALYSIS**

For the dam break analysis, the computer model HEC-RAS was used. This program simulates a breach, its resulting flood peak, and uses unsteady flow principles to route the flood through the downstream valley.

The top-of-dam elevation was used for the water-surface elevation at the beginning of the dam break (“wet-weather” case). The storm event used for the wet weather case was the PMP event.

Normal pool elevation was used for “sunny day” failure.

The results of the downstream flood routing were used to establish the limits and plot the inundated areas for emergency conditions associated with the dam break discharge. The map shown on Page 2 depicts the area which would be flooded should the hypothetical emergency occur. Shown below is a list of the inputs and boundary conditions used for the computer model:

Geometry: Cross sections obtained from lidar DEM data and plans.

Upstream boundary: A hydrograph with a peak flow of 5700 cfs occurring about 15 minutes after breach, with base flow of 100 cfs.

Downstream boundary: Normal depth based on slope of 0.00063

Formation time: 0.5 hour Peak Breach flow: 5700 cfs

Volume of breach: 248 ac-ft

## **IV. GENERAL RESPONSIBILITIES UNDER THE PLAN**

### **A. Dam Owner/ On-Site Personnel Responsibilities**

Upon notification or discovery of the potential for an emergency situation, the dam owner and/or On-Site Personnel should take the appropriate action as outlined in the Emergency Detection, Evaluation, and Classification section of this plan.

**B. Responsibility for Evacuation**

Warning and evacuation planning are the responsibilities of local authorities who have the statutory obligation. Dam owners should not assume, or usurp, the responsibility of government entities for evacuation of people. However, there may be situations in which routine notification and evacuation will not suffice, as in the case of a resident located just downstream of the dam. In this case, the dam owner should arrange to notify that person directly. This procedure should be coordinated with the appropriate public officials before an emergency situation develops.

**C. Responsibility for Duration, Security, Termination, and Follow-Up**

The county EMA should perform on-site monitoring of the situation at the dam and keeping local authorities informed of developing conditions at the dam from the time he arrives on site until the emergency has been terminated. The state dam safety program, in consultation with the county EMA, is responsible for declaring that the emergency at the dam is terminated. Following that declaration, the county EMA is responsible for termination of the disaster response activities.

**D. Exercising and Review of the EAP**

A review of the adequacy of the EAP shall be conducted annually. Any comments from the evaluation will be used to update the EAP. The EAP should be updated promptly after each change in involved personnel or their telephone numbers, or after completion of a scheduled exercise. The EAP should be exercised annually.

**APPENDIX:**  
**APPROVALS AND ACCEPTANCE OF THE EAP**



# LIST OF EAP HOLDERS

DATE: \_\_\_\_\_

By my signature below, I certify that I have a copy of the EAP and I understand my role, or the role of my agency, in implementing the EAP for Sulphur Springs Park Lake Dam (MS02880) if the need arises.

COPY#	EAPHOLDER	SIGNATURE
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1.	Madison County- Dam Owner	
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2.	Madison County EMA	
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3.	MDEQ, OLWR, Dam Safety Division	
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4.	Madison County Sheriff's Department	
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5.	Canton Fire Department	
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6.	Madison County Engineering Department	
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7.	National Weather Service-Jackson	
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8.	911 Call Center	
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