

**EMERGENCY ACTION PLAN**

**For  
Cedar Lake Dam**

**NJ File Number: 25-174**

**Owner/Operator:** Cedar Lake Property Owners, Inc.

**Address:** 91 Cedar Lake West  
Denville, New Jersey 07834

**Prepared By:** CHA

**Address:** 2001 Route 46, Suite 107  
Parsippany, NJ 07054

**Date:** October 8, 2009

**Revision Dates:\***

**1st Revision:** \_\_\_\_\_

**2nd Revision:** \_\_\_\_\_

**3rd Revision:** \_\_\_\_\_

**\* THE DAM OWNER/OPERATOR IS RESPONSIBLE FOR THE ANNUAL REVIEW  
AND UPDATING OF THE EAP.**

## Table of Contents

<b><u>Title</u></b>	<b><u>Page</u></b>
Cover Page -----	1
Table of Contents -----	11
<b>I. Emergency Notification</b>	
Emergency Notification Flow Chart -----	4
Notification Information -----	5
Communication Priority List -----	6
<b>II. Statement of Purpose</b>	
Purpose -----	7
Scope -----	7
Authority -----	7
<b>III. Project Description</b>	
Project Site Description -----	8
Project Location Map -----	10
Plan of Dam -----	10
<b>IV. Emergency Detection, Evaluation, and Classification</b>	
Advisory Condition -----	12
Warning Condition -----	12
Emergency Condition -----	13
Breach Condition -----	13
<b>V. General Responsibilities Under the EAP</b>	
Dam Owner/Operator Responsibilities -----	14
EAP Coordinator Responsibilities -----	14
Municipal OEM Responsibilities -----	14
County OEM Responsibilities -----	15
NJ-OEM Responsibilities -----	15
NJ-DSS Responsibilities -----	15
Responsibility for Termination -----	15
Responsibility for Recovery -----	15
<b>VI. Preparedness</b>	
Emergency Notification Directory -----	17
Emergency Operation Center (EOC) -----	19
EOC Location Map -----	20
Surveillance Checklist -----	21
List of Contractors -----	22
Available On-Site Materials -----	23
Available On-Site Equipment -----	23

## Table of Contents

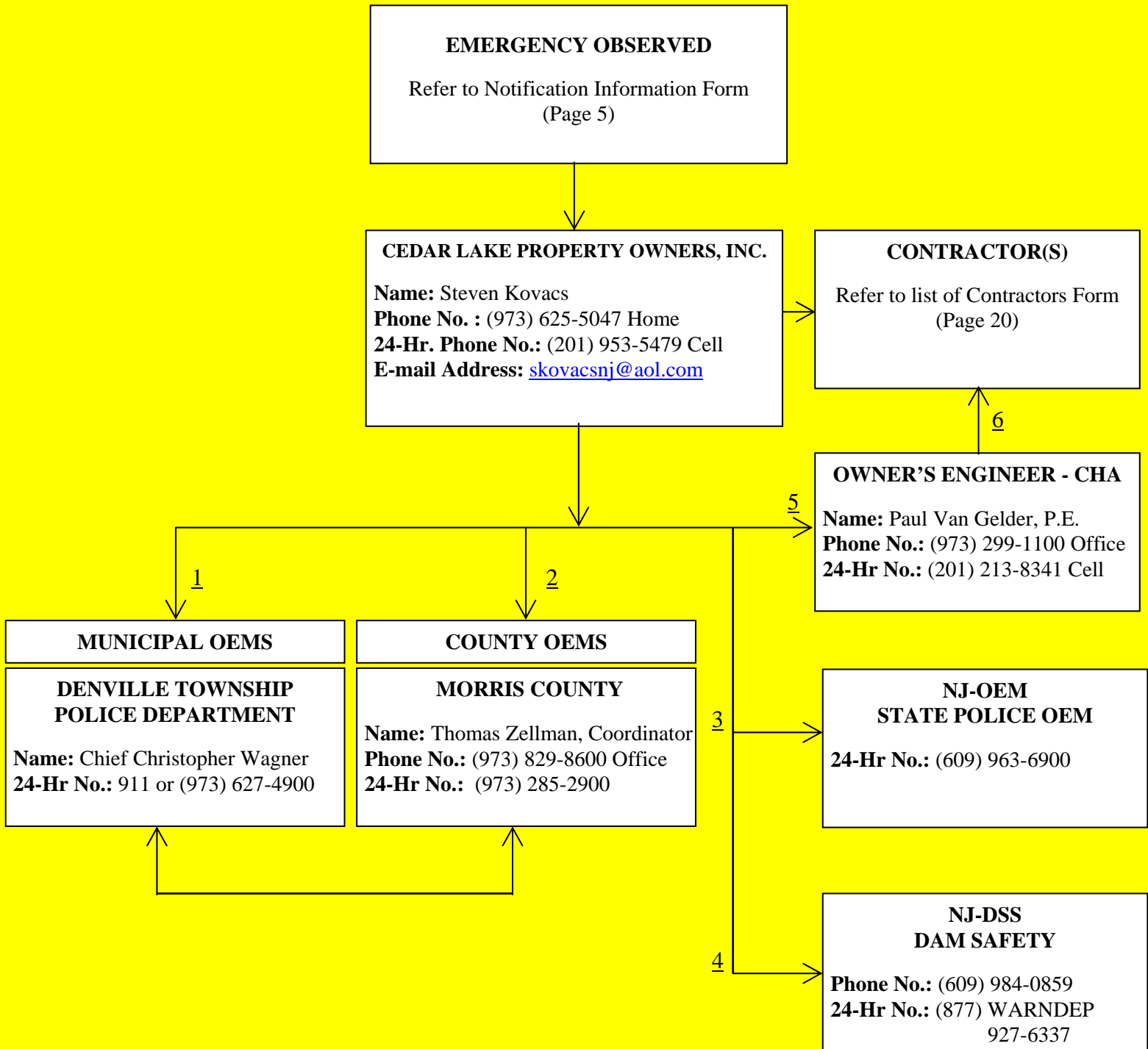
<b><u>Title</u></b>	<b><u>Page</u></b>
Available Off-Site Materials -----	24
Available Off-Site Equipment -----	24
<b>VII. Inundation Maps</b>	
Description of Inundated Area -----	25
Index of Maps-----	25
Inundation Maps -----	26
<b>VIII. Appendices</b>	
<b>Appendix A - Plans for Training, Exercising, Updating and Posting</b>	
Training -----	<a href="#">A-1</a>
Exercising-----	<a href="#">A-2</a>
Updating -----	<a href="#">A-2</a>
Posting -----	<a href="#">A-2</a>
<b>Appendix B - Definitions</b>	
Definitions -----	<a href="#">B-1</a>
<b>Appendix C - Approval and Distribution of the EAP</b>	
Approval -----	<a href="#">C-1</a>
Distribution -----	<a href="#">C-2</a>
Standard Distribution Letter & Receipt-----	<a href="#">C-3</a>

## List of Figures

Figure 1 – Project Location Map -----	10
Figure 2 – Plan of Cedar Lake Dam -----	11
Figure 3 – EOC Location Map -----	20
Figure 4 – Interim Sunny Day Breach Inundation Map -----	26
Figure 5 – Interim Storm Day Breach Inundation Map -----	27

# I. Emergency Notification

## EMERGENCY NOTIFICATION FLOWCHART CEDAR LAKE DAM NJ File Number: 25-174



## I. Emergency Notification

### EMERGENCY NOTIFICATION FORM

This form is intended to aid the person reporting the emergency condition in relating all pertinent information.

#### Emergency Notification Information

The following is dam emergency information that is to be provided by an observer of any of the four emergency conditions (*See Section IV on Page 12 for a description of the four emergency conditions – Advisory, Warning, Emergency and Breach*):

**Name of Person Reporting the Emergency:** (To be provided by observer of the emergency condition)

**Affiliation:** (To be provided by observer of the emergency condition)

**Phone Number:** (To be provided by observer of the emergency condition)

**Name & File Number of Dam:** Cedar Lake Dam, NJ File Number: 25-174

#### Location of Dam

**County:** Morris County

**Municipality:** Denville Township

**Stream:** Un-named Tributary to Rockaway River

**Road(s):** Cedar Lake East just south of Florence Avenue

**Time and Date of Dam Emergency:** (To be provided by observer of the emergency condition)

**Type of Emergency:** (To be provided by observer of the emergency condition – Dam Warning, Dam Advisory, Dam Emergency or Dam Breach Condition – See Section IV on Page 12)

**Phone Appropriate Parties:** *[Refer to the Emergency Notifications Flow Chart, Page 4]*

"This is (*Provide your Name, Title & Affiliation*).

There is a Dam (*Advisory, Warning, Emergency, or Breach*) condition at Cedar Lake Dam.

Observation was at (*Provide time emergency condition was observed*).

The situation is (*Explain the condition*).

What is your anticipated time of arrival at the dam and what are my instructions?"

*[Refer to Site Description, Page 8, for directions to the Cedar Lake Dam]*

## **I. Emergency Notification**

### **COMMUNICATION PRIORITY LIST**

The Communication Priority List is a list of organizations and individuals who will be contacted in the event of an emergency at cedar Lake Dam (the contacts are prioritized in the list and match the Emergency Notification Flowchart). These individuals will receive updates as to the status of the emergency.

#### **The Cedar Lake Property Owners, Inc. Calls:**

1. Municipal OEM - Denville Township Police Department
2. County OEM – Morris County
3. NJ-OEM – State Police OEM
4. NJ-DSS
5. Owner’s Consulting Engineer - CHA
6. Contractor(s)

## II. Statement of Purpose

### Purpose

To establish procedures necessary to protect life and property in areas affected by the failure of a dam or the uncontrolled release of stored water.

### Scope

This Emergency Action Plan:

1. Establishes a monitoring system which can activate the Plan.
2. Identifies the officials, organizations, agencies, and their respective responsibilities for implementing the plan.
3. Identifies those areas, residences, facilities and roads which might be affected by a dam failure.

### Authority

1. Public Law 1942, Chapter 251, as amended.
2. N.J.S.A. 58:4-1 et seq., Safe Dam Act.
3. N.J.A.C. 7:20-1 et seq., Dam Safety Standards.

### III. Project Description

#### Project Site Description

**Dam Name:** Cedar Lake Dam

**Hazard Classification:** Class II Significant

**NJ File No.:** 25-174

**NJ Federal ID:** NJ00805

**City/Town:** Denville

**County:** Morris

**Location & Access** (See Figure 1 – Project Location Map on Page 10):

**Note:** The driving directions below are routed such that roads that might be impacted by the dam emergency can be avoided. **It is anticipated that Cedar Lake Drive East will begin to overtop at the southerly-most location BEFORE overtopping will take place at the dam.**

- From Exit 37 of Interstate 80 East (coming from the west) head northeast on Hibernia Avenue and take a right onto Morris Avenue (0.1 miles);
- From Exit 37 of Interstate 80 West (coming from the east) merge onto Green Pond Avenue and take a right onto Morris Avenue (160 feet);
- Turn left at Diamond Spring Road (1.9 miles);
- Take a left at Florence Avenue (0.4 miles);
- Turn left onto Cedar Lake Road East (0.1 miles);
- Dam is approximately 500 feet south of Florence Avenue.

**Lot No:** 1 & 184

**Block No:** 60002 & 60402

**Latitude:** N 40.910144

**Longitude:** W -74.469658

**River/Stream:** Un-named Tributary to Rockaway River

**Quad Sheet:** Boonton USGS QUAD

**Nearest City/Town:** Denville

**Height (ft):** 8

**Normal Surface (ac):** 95

**Length (ft):** 250

**Normal Capacity (ac-ft):** 409

**Dam Type:** Earthen

**Maximum Capacity (ac-ft):** 600

**Spillway:** Vertical square (3'x3') concrete drop box with timber stoplogs accessible via a locked hatch opening in the timber boardwalk decking, drop box which discharges directly into a 36-inch diameter pipe culvert

**Spillway Capacity (cfs):** 59

**Dike:** None

**Drainage Area (sq. mi.):** 0.45

**Outlet Other than Spillway:** None

**Purpose/Operation of Dam (attach additional sheets if necessary):** Recreation

**Instrumentation (if any):** None

**Other:** The embankment of the dam carries a municipally owned roadway and various underground utilities (sanitary sewer pipe, water main and gas main) that would be damaged in the event of a dam failure.

### III. Project Description

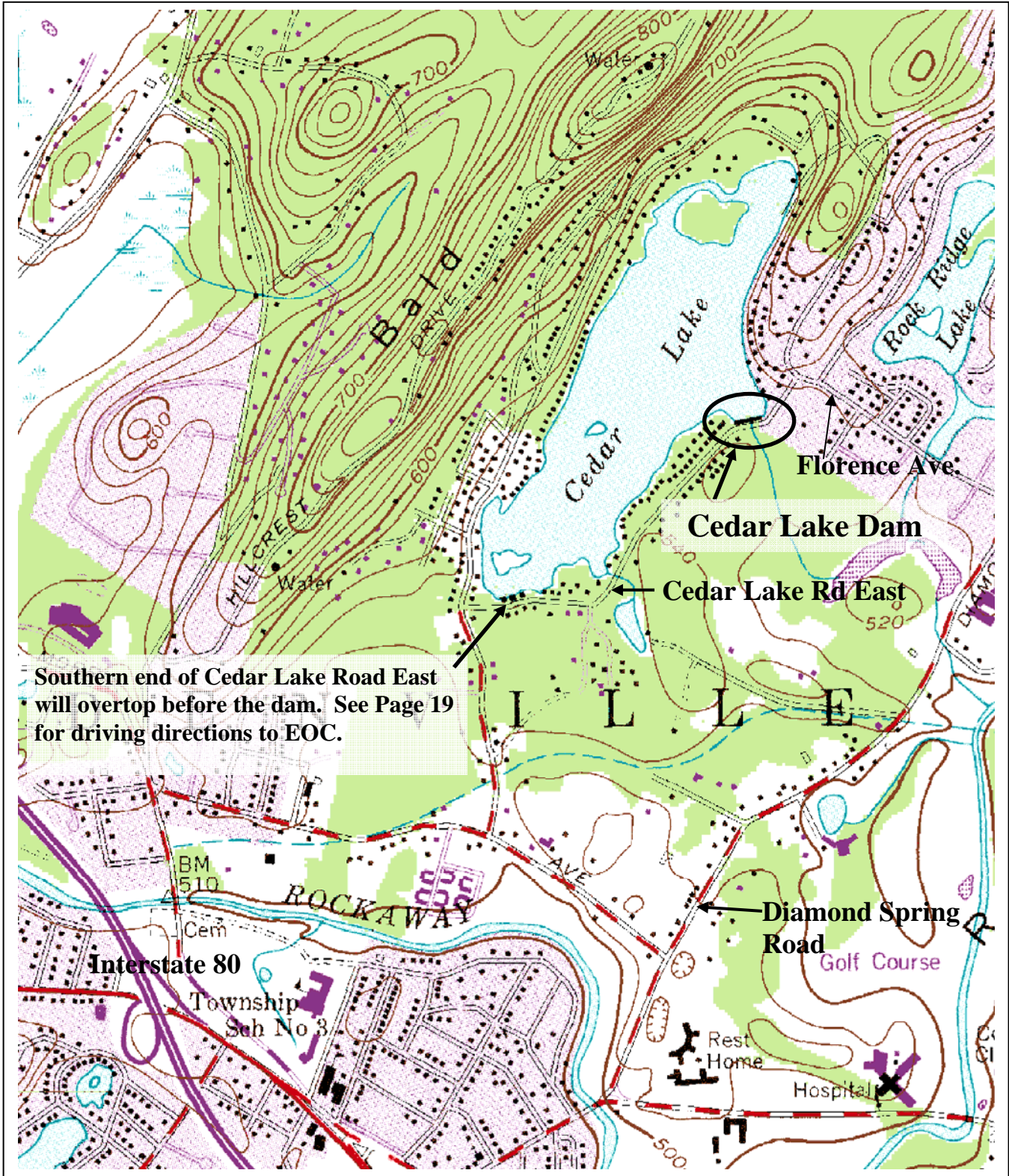
**Significant Upstream or Downstream Dams (if any):** 1.) Muriel Hapner Park Dam/Spillway (FEMA RS 1208) located 0.53 miles (2800 ft) downstream of Cedar Lake Dam, this dam is about 5 ft high and 200 ft long with a spillway 30 ft wide. It maintains normal pool at Elevation 506.2 feet and overtops at Elevation 510.0 feet; 2.) “Private Spillway” (FEMA RS 755) located 0.60 miles (3200 ft) downstream of Cedar Lake Dam, this dam is less than 2 ft high.

**Overview of Inundation Area:** The area immediately downstream of Cedar Lake Dam (0-1500 feet) consists of an uninhabited, moderately wooded stream channel. Further downstream (1500-3000 feet) the channel flows into the swampy backwater of Municipal Pond impounded by Muriel Hapner Park Dam, which is a recreational lake (Town Park) with picnic, playground and parking areas. Approximately 400 feet downstream of the Municipal Pond spillway the stream channel passes beneath Diamond Spring Road (which has a clear span of 22 feet). The Diamond Spring Road Bridge will be overtopped by either a sunny day or storm day dam breach. By inspection the Emergency Services Garage located on Boonton Road is elevated by several feet above the stream bank and appears to be about even with the Diamond Springs Road bridge deck elevation. Flows would be diverted around this building. Although it might be isolated by some flood flows, by inspection, it would not be affected by a sunny day breach event. A pump station building at the intersection of Diamond Springs and Boonton Roads would however be affected.



It should be noted that there is also a low spot (Elevation 529.27 feet) at the south end of the lake in Cedar Lake Drive East. Cedar Lake Drive East will therefore begin to overtop at this location before overtopping will take place at the dam during a storm day event. The south end of the lake will flow in south/southwesterly direction towards a low swampy area with no apparent outlet.

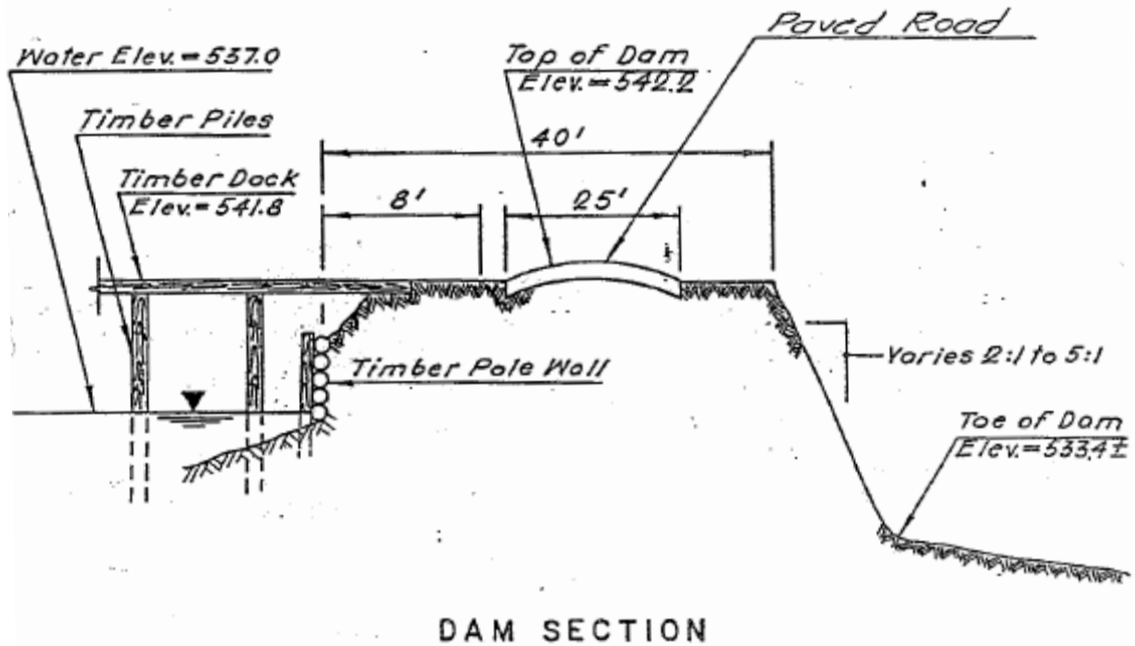
See Page 25 for important information regarding development of the interim sunny day inundation map (Figure 4) and storm day inundation map (Figure 5).

**Method of Emergency Drawdown:** The 3-foot long stoplog weir box spillway also serves as the low-level outlet for reservoir drawdown. The stoplogs are accessed beneath an access panel in the timber decking (directly adjacent to the concrete headwall, which protrudes approximately 8 inches above the decking). The access panel can be lifted with a crowbar or a strong screw driver. Stoplogs are manually lifted out as needed for desired drawdown depth.



Southern end of Cedar Lake Road East will overtop before the dam. See Page 19 for driving directions to EOC.

			<b>Figure 1 - Project Location Map</b> <b>Cedar Lake Dam (NJ File No. 25-174)</b> <b>Denville, NJ</b>
	Scale 1" = 1200'	CHA File No: 19794.1004.1510	Denville, New Jersey Boonton USGS QUAD



**Note:** The embankment of the dam carries a municipally owned roadway and various underground utilities (sanitary sewer pipe, water main and gas main) that would be damaged in the event of a dam failure.

Image Reference: USACOE Phase I Inspection Report, Plate 6,  
Prepared by Storch Engineers, Florham Park, NJ, March 1981.



**Figure 2 – Plan of Dam  
Cedar Lake Dam (NJ File No. 25-174)  
Denville, NJ**

N.T.S.

CHA File No:  
19794.1004.1510

Denville, New Jersey  
Boonton USGS QUAD

## IV. Emergency Detection, Evaluation, and Classification

### Emergency Condition Identification

Since the goal of dam emergency planning is to protect lives and property, the timely identification of emergency conditions by trained personnel becomes paramount. Procedures to identify emergency conditions have been established by NJ-OEM. Four (4) dam emergency conditions of varying severity have been identified and are described below.

### Dam Advisory Condition

A Dam Advisory Condition is a situation where an unusual problem or situation has occurred, but a failure of the dam is not imminent. Examples of a Dam Advisory Condition for Cedar Lake Dam are:

- Any undocumented or unusual spring.
- Any sign of piping.
- Any sign of slumping.
- Any sinkhole.
- Any unusual crack.
- Any unusual wet spot or boggy area.
- Any seismic event regardless of how slight.
- Any obstruction in the spillway.
- Evidence of damage due to vandalism at any structure(s).
- Bomb threat.
- A civil disorder near the reservoir structure(s).
- Any aircraft accident near the reservoir structure(s).

Required responses are: *[Refer to Emergency Notification Flow Chart, Page 4]*

- Notify municipal OEM.
- Notify county OEM.
- Notify NJ-OEM.
- Notify NJ-DSS.
- Investigate.
- Assess and respond.

### Dam Warning Condition

A Dam Warning Condition is any developing or occurring event or circumstance which is or may adversely affect the integrity of the dam but is considered controllable. The Dam Warning Condition has the potential of evolving into a Dam Emergency or a Dam Breach condition. Examples of a Dam Warning Condition are:

- Water level of the lake is at an unsafe level and is rising threatening to overtop the dam.
- Any developing erosion, settlement or upheaval occurring on the downstream slope or at the toe of the dam and is considered to be controllable.
- Any undocumented leakage through any dam structure considered to be controllable.

## IV. Emergency Detection, Evaluation, and Classification

Required responses are: *[Refer to Emergency Notification Flow Chart, Page 4]*

- Notify municipal OEM.
- Notify county OEM.
- Notify NJ-OEM.
- Notify NJ-DSS.
- Investigate.
- Assess and respond.

### **Dam Emergency Condition**

A Dam Emergency Condition is defined as one or more of the following situations:

- Water has overtopped or will overtop any dam or dike.
- Any uncontrollable erosion, settlement or upheaval occurring on the downstream slope or at the toe of the dam.
- Any uncontrollable leakage through any dam structure.

Required responses are: *[Refer to Emergency Notification Flow Chart, Page 4]*

- Notify municipal OEM.
- Notify county OEM.
- Notify NJ-OEM.
- Notify NJ-DSS.
- Commence emergency actions.
- Issue public warning and begin evacuation.

### **Dam Breach Condition**

A Dam Breach Condition is defined as:

- A dislocation or failure of any structure which allows for an expanding, uncontrollable discharge of water through the spillway, dam or dikes indicating a breach is occurring.

Required responses are: *[Refer to Emergency Notification Flow Chart, Page 4]*

- Notify municipal OEM.
- Notify county OEM.
- Notify NJ-OEM.
- Notify NJ-DSS.
- Commence emergency actions.
- Issue public warning and begin evacuation.

## V. General Responsibilities Under the EAP

### Dam Owner/Operator Responsibilities:

During an emergency condition:

1. Identify the emergency condition.
2. Notify the Office of Emergency Management (OEMs) and New Jersey Department of Environmental Protection, Dam Safety Section (NJ-DSS). *[Refer to the Emergency Notification Flow Chart on Page 4]*

**Person responsible for the notification:** Steven A. Kovacs

3. Implement and direct emergency repairs.
4. Update the emergency status to the OEMs and NJ-DSS.  
**Person responsible for the updates:** Steven A. Kovacs
5. Provide security measures at the dam.
6. Provide technical assistance to OEM officials, when necessary.
7. Report termination of emergency situation on-site at the dam.

In non-emergency conditions, owner/operator must also provide for:

8. Routine maintenance and operations of the dam.
9. Routine surveillance of the dam.
10. Routine inspection of the dam.
11. Annual review, updating, and distribution of the EAP.

### Owner/Operators EAP Coordinator Responsibility

The dam owner/operator designated as the EAP Coordinator, shall be responsible for EAP related activities including:

1. Including and distributing document revisions.
2. Establishing training seminars.
3. Coordinating EAP exercises.
4. Contacting person for any EAP related inquiries.

**EAP Coordinator Name:** Steven A. Kovacs

**Phone Number:** (973) 625-5047

### Municipal OEM Responsibilities:

1. Warning the public of emergency conditions at the dam.
2. Implementing and directing required evacuations of threatened areas.
3. Establishing reception centers for evacuated people.
4. Securing and controlling access to evacuated areas.
5. Conducting rescue and recovery operations as required.
6. Determining and declaring termination of an emergency/disaster response activities off-site.

## V. General Responsibilities Under the EAP

### County OEM Responsibilities:

1. Pass warning of emergency conditions at the dam to all affected municipalities.
2. Providing assistance to municipalities to help fulfill the emergency responsibilities.

### NJ-OEM Responsibilities:

1. Assuming control and coordination (when appropriate) of all emergency actions in accordance with Public Law.
2. Providing of assistance to the affected municipalities and counties (when requested and beyond their capabilities).
3. Coordinating of specialized assistance.
4. Notifying appropriate State agencies.
5. Notifying appropriate counties of any declared emergency condition.
6. Periodic testing of the emergency notification procedures.

### NJ-DSS Responsibilities:

1. Providing technical assistance to the dam owner/operator.
2. Assisting in the evaluation and resolution of potential emergency conditions.
3. Has the authority to direct the owner/operator to take necessary safety measures.

### Termination

The **owner/operator** is responsible for evaluating a declared emergency condition. The NJ-DSS is responsible for making the decision, when appropriate, that an emergency condition no longer exists on-site at the Dam. The Office of Emergency Management representatives (OEMs) are responsible for declaring termination of an emergency condition off-site. As such, it will be the responsibility of the owner/operator to notify the OEMs of an emergency condition termination at the dam promptly.

As part of the termination phase, the **County/Municipal OEM** will be responsible to conduct a critique of the overall emergency response and to prepare a report documenting emergency procedures and actions. The critique process will be a discussion of the events that occurred prior to, during, and after a dam emergency. Participants review and evaluate their particular actions. The purpose of the critique is to determine what, if any, practicable improvements could be made for potential future emergencies, and conversely to identify deficiencies in procedures, manpower, materials and equipment. A report will be prepared and submitted to the NJ-OEM and NJ-DSS.

### Recovery

The basic goal of the recovery phase is to demobilize and return to the pre-emergency situation. The **owner/operator** is responsible for implementing all actions necessary to achieve this goal on-site at the dam. The Emergency Management Service (EMS) has the responsibility to effectuate recovery off-site in the affected communities.

## V. General Responsibilities Under the EAP

The **owner/operator** is responsible for directing all on-site recovery activities. The basic recovery actions common to the four dam emergency conditions are:

- Secure access to emergency site,
- Restore basic facilities and services, and
- Assess damage.

An additional activity that could be part of a high level dam emergency with associated physical actions would be a disaster declaration. Official disaster declarations would be made by members of the OEM, not by the owner of the dam.

A damage assessment report will be prepared by the **owner** to quantify the economic damages and to evaluate the impacts to the dam structure or the lake. Damage assessment will be done in two stages. The first stage will estimate the overall impacts in a broad sense and will be prepared as soon as possible following the dam emergency. The second stage will be a detailed evaluation and formal report of all impacts. The damage assessment report will be prepared and submitted to the NJ-OEM and NJ-DSS.

Emergency Notification Directory

1. Dam Owner: Cedar Lake Property Owners, Inc.

Contact Person: Steven A. Kovacs

Address: c/o Kathleen Summers, 169 Cedar Lake West, Denville, NJ 07834

Phone No: (201) 953-5479 24-Hr No: (973) 625-5047

E-mail Address: Skovacsnj@aol.com

2. Dam Operator: Cedar Lake Property Owners, Inc.

Contact Person: Steven A. Kovacs

Address: c/o Pat Strother, 9 Cedar Lake West, Denville, NJ 07834

Phone No: (201) 953-5479 24-Hr No: (973) 625-5047

E-mail Address: Skovacsnj@aol.com

3. EAP Development Crew

Coordinator: Steven A. Kovacs

Phone No: (201) 953-5479

Crew Phone No.

CHA, Paul Van Gelder, P.E. (973) 299-1100 Office

\_\_\_\_\_

\_\_\_\_\_

4. Maintenance & Operations Crew

Supervisor: Steven A. Kovacs

Phone No: (201) 953-5479

Crew Phone No.

Denville Public Works, John Egbert (973) 625-8334 Office or 911 (after hours)

\_\_\_\_\_

\_\_\_\_\_

5. Inspectors

Name	Phone No.
<u>Steven A. Kovacs</u>	<u>(201) 953-5479 Cell, (973) 625-5047 Home</u>
<u>Steve Bias</u>	<u>(973) 983-9318</u>
<u> </u>	<u> </u>

6. Owners' Engineers

**Name:** CHA

**Contact Person:** Paul Van Gelder, P.E.

**Address:** 2001 Route 46, Suite 107, Parsippany, NJ 07054

**Phone:** (973) 299-1100 Office      **24-Hr No:** (201) 213-8341 Cell

7. Municipalities

Municipality	Phone No.
<u>Denville Police Department</u>	<u>(973) 627-4900 (24-Hr)</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

8. Counties

County	Phone No.
<u>Morris County OEM</u>	<u>(973) 928-8600</u>
<u>Morris County Sheriff's Comm. Center</u>	<u>(973) 285-2900 (24-Hr)</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

9. State Agencies

Agency	Phone No.	24-Hr No.
<u>NJ-OEM</u>	<u>(609) 963-6900</u>	<u>(609) 963-6900</u>
<u>NJ-DSS</u>	<u>(609) 984-0859</u>	<u>(877) WARNDP (927-6337)</u>

**Emergency Operation Center (EOC)**

The EOC is the **Cedar Lake Community Clubhouse**.

**Address:** 134 Cedar Lake East, Denville, NJ 07834

---



**Direction to the EOC from the Nearest State or County Highway:**

**Note:** The driving directions below are route such that roads that might be impacted by the dam emergency can be avoided. **It is anticipated that Cedar Lake Drive East will begin to overtop at the southerly-most location BEFORE overtopping will take place at the dam.**

- From Exit 37 of Interstate 80 coming from the west head northeast on Hibernia Avenue and take a right onto Morris Avenue (0.1miles);
- From Exit 37 of Interstate 80 coming from the east merge onto Green Pond Avenue and take a left onto Morris Avenue (160 feet);
- Follow Morris Avenue and turn left at Diamond Springs Road (1.9 miles);
- Take the 2<sup>nd</sup> left onto Florence Avenue (0.9 miles);
- Florence Avenue turns slightly left and becomes Cedar Lake East (0.4 miles);
- Cedar lake Community Clubhouse is approximately 400 feet on the left.

**\*See EOC Location Map on Page 20.**



			<p><b>Figure 3 – Emergency Operations Center (EOC) Location Map</b>  <b>Cedar Lake Community Clubhouse,</b>  <b>134 Cedar Lake Rd East, Denville, NJ</b></p>
	<p>Scale 1" = 1200'</p>	<p>CHA File No: 19794.1004.1510</p>	

# DAM OBSERVATION/RESPONSE CHECKLIST

Inspector: \_\_\_\_\_

Date/Time: \_\_\_\_\_

The Dam Observation/Response Checklist is a tool that is used to determine what response is necessary based on the observations at the dam. If observations of the dam abutments, upstream slope, crest, downstream slope, spillway and drainage channel indicate that there are no deficiencies then check marks should be placed in the first row and no response is required. If an observation is made and a deficiency is noted then a checkmark should be placed in the box(s) corresponding to where the deficiency was noted (e.g. dam crest) and the type of discrepancy (e.g. breach). The box(s) that are checked will determine which emergency condition exists (e.g., a dam breach at the crest would correspond to a Response 4 which is described in the Checklist footnotes as a Dam Breach Condition) and the required response.

## Legend to Checklist

- 0 - No Action Required.
- 1 - Dam Advisory Condition. Activate Emergency Communications per Section IV - Emergency Detection, Evaluation, and Classification, Page 12.
- 2 - Dam Warning Condition. Activate Emergency Communications, investigate and repair per Section IV - Emergency Detection, Evaluation, and Classification, Page 12.
- 3 - Dam Emergency Condition. Activate Emergency Communications, commence public warning and evacuation per Section IV - Emergency Detection, Evaluation, and Classification, Page 13.
- 4 - Dam Breach Condition. Activate Emergency Communications, commence public warning and evacuation per Section IV - Emergency Detection, Evaluation, and Classification, Page 13.
- NA - Not Applicable.

OBSERVATION	Response	Abutments	Upstream Slope	Dam Crest	Downstream Slope	Stoplog Inlet	Discharge Pipe	REMARKS
Normal (No Deficiencies)	0							
Not Inspected	-							
Dam Breach	4		NA			NA	NA	
Overtopping of Dam Crest	3	NA	NA		NA	NA	NA	
Uncontrollable Settlement, Heave, or Erosion	3					NA	NA	
Uncontrollable Leakage	3		NA	NA				
Water Level 6 Inches Below Crest and Rising	2	NA	NA		NA	NA	NA	
Controllable Settlement, Heave, or Erosion	2					NA	NA	
Controllable Leakage	2		NA	NA				
New Seepage or Piping	1		NA	NA		NA		
Sinkhole	1					NA	NA	
Wet or Boggy Area	1					NA	NA	
Seismic Event	1		NA	NA		NA	NA	
Spillway Obstruction	1	NA	NA	NA	NA		NA	
Cracking	1	NA	NA	NA	NA			
Civil Disorder	1							
Bomb Threat	1							
Aircraft Accident	1							
Other								

List of Contractors

After a situation is identified as an emergency and evaluated, the **owner/operator** is responsible, with assistance from the Owner's Engineer and an approval from the NJ-DSS, to direct repairs to resolve the condition. The severity of the condition will dictate the resources and response time necessary.

It will be the responsibility of the owner to maintain the list of contractors that may be contacted during an emergency condition for equipments, materials, and repairs current.

For each contractor on the list, the following must be provided:

- Contractor name.
- Contact person.
- Address.
- Phone number.
- Scope of its contracted services.

1. Contractor: Online Contracting

Contact Person: Joseph Venito Phone No: (973) 263-9717

Address: Boonton, New Jersey 07005

Services Contracted For: Excavation Work, Landscaping

2. Contractor: Lane Construction Company

Contact Person: Stephen Heller Phone No: (973) 586-2700

Address: One Indian Road, Suite 2, Denville, NJ

Services Contracted For: General Site Work, Utilities, Excavation and Concrete Work

3. Contractor: Esposito's Contractors, Inc.

Contact Person: \_\_\_\_\_ Phone No: (973) 282-0880, 366-9902

Address: 424 Franklin Road, Denville, NJ 07834

Services Contracted For: Construction and Electrical Work

**VI. Preparedness**

**Available On-Site Materials**

<u>Material</u>	<u>Location</u>	<u>Quantity</u>
None		

**Available On-Site Equipment**

<u>Equipment</u>	<u>Location</u>	<u>Quantity</u>
None		

**VI. Preparedness**

**Available Off-Site Materials**

<u>Material</u>	<u>Company &amp; Location</u>	<u>Phone No.</u>	<u>Approximate Arrival Time to Dam (Min)</u>
<b>See Page 22 for contractor contact information.</b>			

**Available Off-Site Equipment**

<u>Equipment</u>	<u>Company &amp; Location</u>	<u>Phone No.</u>	<u>Approximate Arrival Time to Dam (Min)</u>
<b>See Page 22 for contractor contact information.</b>			

### Description of Inundated Area

The area immediately downstream of Cedar Lake Dam (0-1500 feet) consists of an uninhabited, moderately wooded stream channel. Further downstream (1500-3000 feet) the channel flows into the swampy backwater of Municipal Pond, which is a recreational lake (Town Park) with picnic, playground and parking areas. Approximately 400 feet downstream of the Municipal Pond spillway the stream channel passes beneath Diamond Spring Road (which has a clear span of 22 feet). The Diamond Spring Road Bridge will be overtopped by a dam breach during a 100-year flood event. By inspection the Emergency Services Garage located on Boonton Road is elevated by several feet above the stream bank and appears to be about even with the Diamond Springs Road bridge deck elevation. Flows would be diverted around this building. Although it might be isolated by some flood flows, by inspection, it would not be affected by a sunny day breach event. A pump station building at the intersection of Diamond Springs and Boonton Roads would however be affected.

It should be noted that there is also a low spot (Elevation 529.27 feet) at the south end of the lake in Cedar Lake Drive East. Cedar Lake Drive East will therefore begin to overtop at this location before overtopping will take place at the dam. The south end of the lake will flow in south/southwesterly direction towards a low swampy area with no apparent outlet.

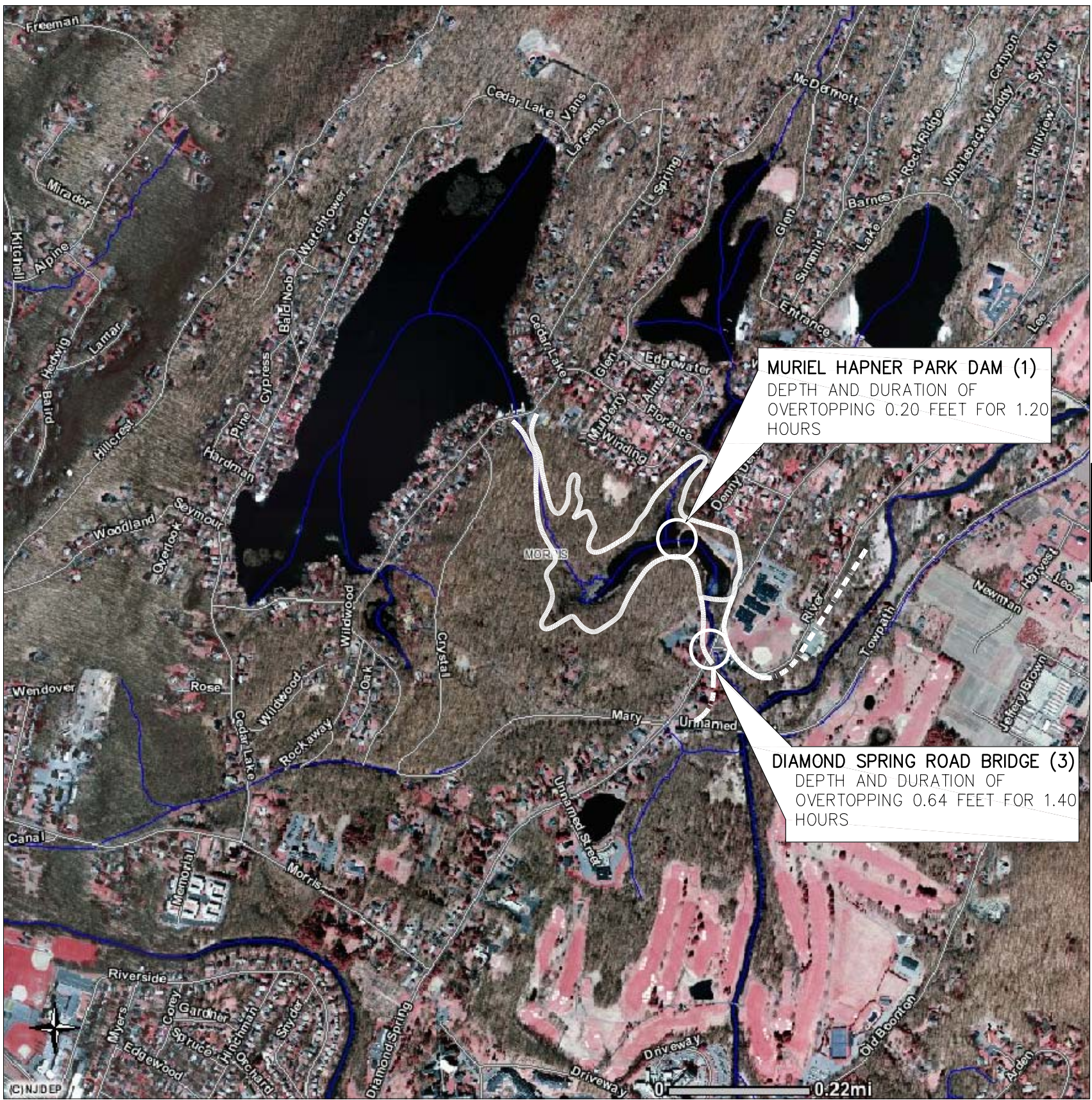
The interim sunny day inundation map (Figure 4) and the storm day inundation map (Figure 5) were developed from plates included in the *Incremental Breach Analysis of Cedar Lake Dam Report* dated August 3, 2009 and prepared by Greenman- Pederson, Inc. Due to cost restraints the model was terminated at Diamond Spring Road until funding is available to pursue extending the model further downstream. The area downstream of Diamond Spring Road that would be inundated was estimated using FEMA mapping which shows areas that typically flood during a 100-year storm as a result of their close proximity to the Rockaway River. This data was used as the breach analysis indicates that the elevation of water in this area would be about the same should a breach of the Cedar Lake Dam occur. At the time this document was prepared the NJDEP had not reviewed nor approved the breach analysis referenced above.

### Index of Maps

List attached maps by name and number:

Figure 4– Interim Sunny Day Breach Inundation Map

Figure 5 – Interim Storm Day Breach Inundation Map



LOCATION	DISTANCE FROM DAM (Miles)	TIME TO FIRST FLOOD WATERS (Minutes)	TIME TO PEAK FLOOD WATERS (Minutes)
(1) Muriel Hapner Park Dam/Spillway	0.53 mi	17	22
(2) Private Spillway	0.60 mi	18	32
(3) Diamond Spring Road Bridge	0.61 mi	18	32

NOTE: CEDAR LAKE DRIVE EAST WILL OVERTOP AT THE SOUTHERN END BEFORE THE DAM OVERTOPS.

Drawing Copyright © 2009



111 Winners Circle, PO Box 5269 - Albany, NY 12205-0269  
Main: (518) 453-4500 • www.chacompanies.com

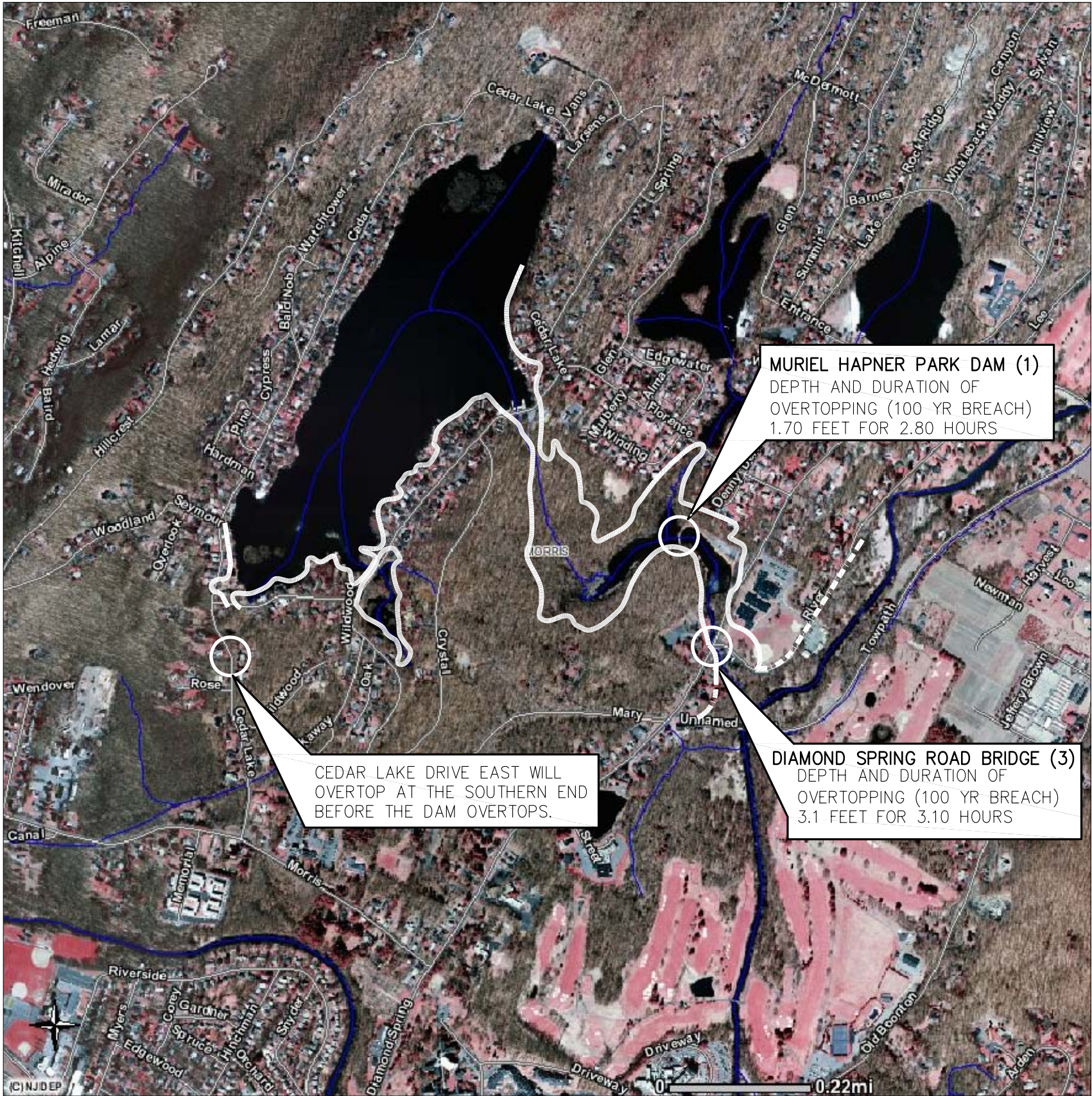
INTERIM SUNNY DAY MAP INUNDATION

CEDAR LAKE DAM  
MORRIS COUNTY, NEW JERSEY

PROJECT NO.  
19794

DATE: 09/2009

FIGURE 4



LOCATION	DISTANCE FROM DAM (Miles)	TIME TO FIRST FLOOD WATERS (Minutes)	TIME TO PEAK FLOOD WATERS (Minutes)
(1) Muriel Hapner Park Dam/Spillway	0.53 mi	17	22
(2) Private Spillway	0.60 mi	18	32
(3) Diamond Spring Road Bridge	0.61 mi	18	32

NOTE: CEDAR LAKE DRIVE EAST WILL OVERTOP AT THE SOUTHERN END BEFORE THE DAM OVERTOPS.

Drawing Copyright © 2009



111 Winners Circle, PO Box 5269 - Albany, NY 12205-0269  
Main: (518) 453-4500 - www.chacompanies.com

INTERIM STORM DAY INUNDATION MAP  
(100 YR STORM W/BREACH)

CEDAR LAKE DAM  
MORRIS COUNTY, NEW JERSEY

PROJECT NO.  
19794

DATE: 09/2009

FIGURE 5

### Appendix A - Plans for Training, Exercising, Updating & Posting

The EAP development coordinator of the dam is responsible for the training, exercising, and updating of the EAP.

#### Training

The EAP development coordinator of the dam is responsible for the training of all personnel involved in the implementation of the EAP. Training of personnel involved in implementation of the EAP is to ensure that they are thoroughly familiar with all elements of the plan, the availability of material and equipment, and their responsibilities and duties under the EAP.

Technically qualified personnel should be trained in problem detection and evaluation and appropriate remedial (emergency and non-emergency) measures. This training is essential for proper evaluation of developing situations at all levels of responsibility which, initially, is usually based on onsite observations. A sufficient number of personnel should be trained to ensure adequate coverage at all times.

Training courses should be held within two (2) months of the implementation of the EAP. Follow-up training sessions should be held annually. The following should be part of the training:

1. For Normal Operations:
  - Instruction on the location, purpose, and operations of the dam structure components.
  - Demonstration of normal dam conditions and operations.
  - Instruction on visual inspection procedures for the weekly/monthly inspections.
  - Hands-on training of communications equipment.
2. For Emergency Condition Identification:
  - Review of Emergency Action Plan.
  - Instruction on visually detecting an emergency warning sign.
  - Review of conditions which would indicate an emergency including proper identification of the type of emergency.
  - Instruction on interpreting the surveillance checklists to detect an emergency situation.
3. For Emergency Communications:
  - Instruction on proper use of communications equipment.
  - Instruction on appropriate individuals to contact, as well as the time to call them and the order in which calls should be made.
  - Instruction on appropriate message to convey.
4. For Emergency Response Actions:
  - Instruction on the role of each worker in response actions.
  - Instruction on dam emergency response actions to be taken for each type of emergency situation.

**Appendix A - Plans for Training, Exercising, Updating & Posting (continued)**

- Instruction on obtaining and utilizing on and off-site emergency supplies.
- Instruction on determining the end of a dam emergency.
- Instruction on proper communications for notifying the appropriate individuals of the emergency termination.
- Instruction on the appropriate dam emergency recovery activities.

**Exercising**

Develop scenarios for the various emergency conditions and exercise the state of training and readiness of key personnel responsible for actions during an emergency in order to make sure that they know and understand the procedures to be followed and actions required.

Emergency response exercises should be held annually and should simulate an emergency situation in which the worker is tested on emergency condition notification, emergency communications, and emergency response skills. The exercise, whenever possible, should include participation by both the dam owner and the affected state and local emergency management officials. The exercises should be evaluated both orally and in writing and the EAP should be revised to correct any deficiencies noted.

**Updating**

The EAP should be updated promptly after each change in involved personnel or their telephone numbers or after the completion of a scheduled exercise review which revealed required changes. A review of the adequacy of the EAP should be conducted at intervals not to exceed one year. If no revision is necessary, a statement that the review was made and no revision to the EAP was necessary should be provided to each recipient of the original EAP.

**Posting of the Notification Flowchart**

An up-to-date copy of the Notification Flowchart should be posted in prominent locations at the dam site and local emergency operations center (essential for unattended dams).

The flowchart should be posted at each phone and radio transmitter at the dam, powerhouse (if applicable), and at all other desirable locations. The locations of the posted flowcharts should be indicated below.

List of Location of Notification Flowchart at the Dam Site:

- Cedar Lake Community Clubhouse
- Denville Police/OEM
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Appendix B - Definitions

#### Definitions

The words and terms listed below, as used in this plan, shall have the following meanings, unless the context clearly indicates otherwise.

**Dam** - Any artificial dike, levee or other barrier, together with appurtenant works, which is constructed for the purpose of impounding water on a permanent or temporary basis, that raises the water level five (5) feet or more above the usual, mean, low water height when measured from the downstream toe-of-dam to the emergency spillway crest or in the absence of an emergency spillway, the top-of-dam.

**Drawdown** - Lowering of lake/reservoir level through the use of flood gates, low level outlets, etc.

**Emergency** - A condition in which a significant hazard to life or property is occurring.

**Emergency Action Plan (EAP)** - Established procedures necessary to minimize threat to life and damage to property in the event of a dam failure related release.

**Emergency Condition** - Any of the four conditions identified in the Emergency Condition Identification section.

**Emergency Management Service (EMS)** - All Offices of Emergency Management (State, County or Local) which would be involved in an emergency response.

**Emergency Operation Center (EOC)** - The command post from which emergency operations are coordinated. Must contain a telephone/communication line or be close to one.

**Failure** - An incident resulting in the uncontrolled release of water from an operating dam.

**File Number** - New Jersey State identification number for the dam.

**Hazard Classification** - Classification of potential hazard a dam failure would cause downstream of the dam.

**Class I (High Hazard Potential)** - Those dams the failure of which may cause the probable loss of life or extensive property damage.

**Class II (Significant Hazard Potential)** - Those dams the failure of which may cause significant damage to property and project operation, but loss of human life is not envisioned.

**Inundation** - The area that would be directly affected by flood waters resulting from a catastrophic dam failure.

### Appendix B – Definitions (continued)

**Large Dam** - A dam which raises the water of any stream more than 70 feet above its usual mean low-water height or which impound more than 10,000 acre-feet of water.

**NJ-DSS** - New Jersey Department of Environmental Protection, Dam Safety Section.

**NJ File No.** - New Jersey State identification number for the dam.

**NJ-OEM** - New Jersey State Police, Office of Emergency Management.

**Outlet** - An opening through which water can be freely discharged from a lake/reservoir for a particular purpose.

**Owner/Operator** - Person/entity who owns, controls, operates, maintains, manages the dam.

**Piping** - The progressive development of internal erosion by seepage, appearing downstream as a hole or seam discharging water that contains soil particles.

**Sinkhole** - Any unusual subsidence.

**Slumping** - The movement of a mass of earth and/or down a slope. In embankments and abutments, this involves the separation of a portion of the slope from the surrounding material.

**Spillway** - A waterway/structure designed to convey excess water from a reservoir/lake without endangering the safety of the dam.

**Spillway Design Flood** - The flood associated with the spillway design storm upon which the hydraulic capacity of the spillway structure is designed.

### Appendix C - Approval & Distribution of the EAP

#### Approval and Distribution

Once the EAP has been developed, the owner/operator shall submit the completed EAP with inundation mapping and dam breach analyses to the NJ-DSS for review and approval. Once the NJ-DSS approves the EAP, the EAP must be distributed by the owner to all individuals who will be involved during an emergency. Any revisions to the EAP should be furnished to all individuals to whom the original EAP was distributed.

Each party receiving an EAP must sign and return a receipt to the distributor (owner/operator) of the EAP. The signed receipt should help to assure that all parties are aware of and understand the EAP and agree to their assigned roles should an emergency occur.

A standard distribution letter and receipt is included for reference.

**Appendix C - Approval & Distribution of the EAP**

**Document Distribution**

The document holder and location of each copy of the up-to-date EAP should be included in this section of the EAP.

<u>Controlled Document Holder</u>	<u>Document Number</u>
<u>NJ-OEM (State Police OEM)</u>	<u>1</u>
<u>NJ-DSS (DEP Dam Safety Section)</u>	<u>2</u>
<u>Cedar Lake Property Owners, Inc.</u>	<u>3</u>
<u>Denville Township Police Department</u>	<u>4</u>
<u>Morris County OEMS</u>	<u>5</u>
<u>CHA</u>	<u>6</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

**Appendix C - Approval & Distribution of the EAP**

**Standard Distribution Letter & Receipt**

(Date)

(Name of EAP document holder)  
(Company or affiliation)  
(mailing address)

Re: EAP for (name of dam) Dam  
NJ File No. (NJ File No.)

Dear (Name of EAP holder):

(Name of the owner/operator or their group) has (prepared or revised) the Emergency Action Plan for (name of the dam) Dam located within (name of township), (name of county) County. The EAP is a public safety regulatory required document. The (year) revisions are described in the REVISION SUMMARY.

Please insert the new material with the revision date in your controlled copy and remove the obsolete material (the effective dates generally are printed at the lower right corner of the pages). Please acknowledge your receipt of your controlled copy distribution by returning the obsolete pages to the undersigned with the attached acknowledgment, signed and dated.

We appreciate your continued cooperation in the revisions of the EAP. Should you have any recommendations or questions regarding the EAP, please do not hesitate to contact the undersigned.

Sincerely,

(Your name),  
(Affiliation)

---

I acknowledge receipt of the (revision date) revision to the (name of dam) EAP and have inserted the revision pages in my controlled copy. This EAP will be maintained at the designated location for use in the event of a drill or actual emergency declaration.

Controlled Document holder name: \_\_\_\_\_ Document No: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_