

EMERGENCY ACTION PLAN (EAP)

Lake Montclair Dam
Inventory Number **153003**
(Powell's Creek Watershed)
Prince William County, Virginia



OWNER/OPERATOR: Montclair Property Owners Association (MPOA)
3561 Waterway Drive, Montclair, VA 22025
Phone: 703-670-6187 // Fax: 703-670-9620

OWNER REPRESENTATIVE: MPOA Board of Directors (BoD) President, Tracy Hansen
OPERATOR REPRESENTATIVE: MPOA General Manager, Steven Levin

October 5, 2021
V.032620

EMERGENCY ACTION PLAN (EAP) FOR THE LAKE MONTCLAIR DAM

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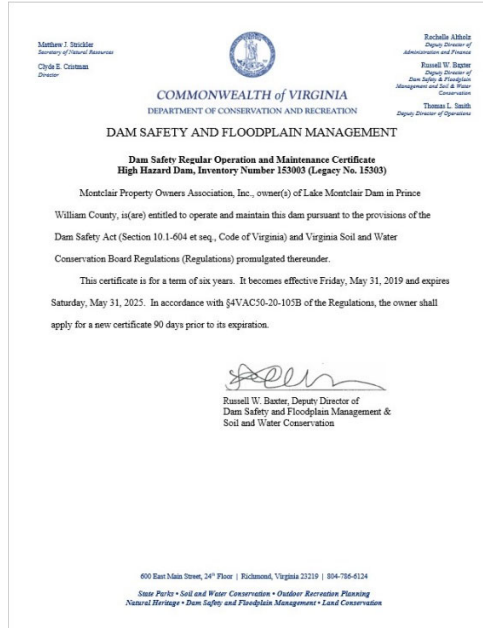
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APPENDICES

- A. Investigation and Analysis of Impounding Structure and Spillway Integrity
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CERTIFICATIONS AND SIGNATURES.

The Virginia Department of Conservation and Recreation (DCR) issued a Dam Safety Regular Operation & Maintenance Certificate effective May 31, 2019 and expires May 31, 2025.



Owner/ Operator/ Engineer

I certify that:

A copy of this plan has been filed with the Virginia Department of Emergency Management (VDEM) and the Prince William County Office of Emergency Management.

This plan has been developed in accordance with the requirements of State of Virginia Code 4VAC50-20-175 Emergency Action Plan (EAP) for High and Significant Hazard Potential Impounding Structures. An inundation study completed in June 2014 was used to complete the EAP. The information in this plan is accurate and current to the best of my knowledge.

Dam Owner: MPOA Board of Directors (BoD) President
Tracy Hansen

Dam Operator: MPOA General Manager
Steven Levin

Dam Project Engineer
David A. Krisnitski, P.E.

I. BASIC INFORMATION

- A. Name of Impounding Structure: Lake Montclair Dam. Inventory Number 153003
- B. Hazard Potential Classification, Virginia Dam Safety Regulations: HIGH
- C. Address and Phone Numbers of Impounding Structure Owner/Operator:
Montclair Property Owners Association (MPOA)
3561 Waterway Drive, Montclair, VA 22025
Phone: 703-670-6187 // Fax: 703-670-9620
- D. Name of Owner Representative: MPOA Board of Directors President, Tracy Hansen
- E. Name of Operator: MPOA General Manager, Steven Levin
Alternate: MPOA Operations Manager, Adam Werle
Note: MPOA currently contracts with FirstService Residential (FSR) to provide property management services, including Dam Operations and Emergency Action Services.
- F. Rain/Staff Gage Observer: Operations Manager, Adam Werle and maintenance staff
- G. Name of 24-hour Dispatch Center:
Prince William County Public Safety Communications Center
Non-Emergency Number: 703-792-6500
- H. Name of Local Government Emergency Services Coordinator:
Prince William County Emergency Management Coordinator
Brian Misner (bmisner@pwcgov.org)
George T. Owens Operations Center
3 County Complex
Woodbridge, VA 22192
Phone: 703-792-5828; Work Cell: 703-853-3197
- I. Public roads and structures downstream (potentially impacted by a breach event):
- Three interstate bridges and four secondary road bridges;
 - 354 occupied structures (nineteen of which are multi-family dwellings)
The structures were determined to be impacted based on the depths of water during Probable Maximum Flood (PMF) event routed through the dam with and without failure.

Summary table of inundated bridges is included in Inundation maps in Section IX.

II. EMERGENCY ACTION PLAN OVERVIEW

In compliance with Virginia Impounding Structure Regulations 4VAC50-20 the Montclair Property Owners Association (MPOA), as the owner/operator of the Lake Montclair Dam, uses this Emergency Action Plan to address emergency response to potentially catastrophic events that could adversely affect the impounding structure, integrity of the lake, and people living in homes on properties bordering Powell’s Creek downstream of the dam.

The Lake Montclair Dam, located near the intersection of Dolphin Drive and Spillway Lane in the community of Montclair, Prince William County is in the middle of the Powell’s Creek Watershed. Several precautionary functions have been designed and used to address potential hazards. The auxiliary spillway has undergone modifications including increasing its depth relative to the elevation of the crest of the dam and the water level in the lake. Total depth of auxiliary spillway available before the crest of the dam is overtopped would be 12.5 feet.

The Lake Montclair Dam is classified as a “High Hazard” dam. Failure of the dam would cause probable loss of life and/or serious economic damage. “Probable Loss of Life” means that impacts would occur that are likely to cause a loss of human life, including but not limited to residences, businesses, other occupied structures, or major roadways. The chart below summarizes how MPOA assesses emergency conditions and determines Emergency Level Stages that would be used to direct subsequent notification and response actions. See Section VIII of this plan for lake lowering procedures.

Activity Steps Associated with Emergency Conditions

Step 1 -- Hazardous Condition Detection	Incident Detection (See Section VI)		
Step 2 -- Emergency Level Stage Determination	Assess Situation -- Determine Emergency Level Stage (See Section VI)		
	Emergency Stage 1 Non-Emergency Incident	Emergency Stage 2 Spillway Activation	Emergency Stage 3 Dam Failure
	Flood Watch or Heavy Continuous Rain – Slowly Developing Situation (See Section VI)	Auxiliary Spillway activation flowing with 4 foot depth of water & rising. – Rapidly Developing Situation (See Section VI)	Auxiliary Spillway activation with 10 foot depth of water and rising -- Dam Failure or Breach is Imminent or in Progress – Urgent Situation (See Section VI)
Step 3 -- Notification and Communication	Notification List for Non-Emergency Situation (See Sections III & VI)	Notification List for Rapidly Developing Situation (See Sections III & VI)	Notification List for Urgent Situation (See Sections III & VI)
Step 4 -- Frequency of Observations & Expected Actions	Inspect Dam Every 12 hours: Monitor and Listen to Weather Forecast	Inspect Dam Every 4 hours: Notify Emergency Responders	Constant Inspection of Dam: Continuous Contact with Emergency Responders
Step 5 -- Follow-up and Termination	Termination of Monitoring Conditions at the Dam: Proceed to Evaluate Damages and Plan for Repairs		

Surveillance monitoring and observations of instrument readings at the dam continue to be normal methods of detecting potential hazardous/emergency situations. Three emergency level stages are used to manage and respond to specific situations. The first level is actually a set of pre-emergency conditions that, if properly acted upon in a timely manner, should often remain non-emergency situations because of the operational preventive responses.

"Emergency Level Stage 1 Condition" means a Flood Watch or Heavy Continuous Rain. The integrity of the Dam is not at risk, and properties and people downstream are not threatened.

Stage 1 Condition at Montclair Dam is indicated by heavy rainfall amounting to over 3 inches within a 6-hour period; or 4 inches of rainfall within a 12-hour period; or a staff gauge reading of 5 feet on the hood of the principal spillway (lake elevation of 192 feet).

A staff gauge observer will report to MPOA General Manager every 12 hours on conditions at the Dam, primary spillway and auxiliary spillway, along with conditions at the culverts.

"Emergency Level Stage 2 Condition" is a rapidly developing situation; characterized by the Auxiliary Spillway activation flowing with 4 foot depth of water & rising.

Stage 2 Condition at Montclair Dam is heavy rainfall amounting to 16 inches within a 24-hour period; or a staff gauge reading of 9.5 feet on the hood of the principal spillway (lake elevation of 196.5 feet) or 4 foot of water over the auxiliary spillway.

Staff gauge readings shall continue to be taken every 4 hours and a visual inspection of the dam and culverts on Waterway Drive and Northgate Drive shall be conducted every one-half hour to determine if potentially hazardous situations are developing, such as erosion around the Dam, potential damage to the bridge, and road closure.

"Emergency Level Stage 3 Condition" is an urgent situation; characterized by the Auxiliary Spillway activation with 10 foot depth of water and rising indicating Dam Failure or Breach is Imminent or in Progress.

Stage 3 Condition at Montclair Dam is indicated by heavy rainfall amounting to 24 inches within a 24-hour period, or a staff gauge reading of 10 feet on the auxiliary spillway; or imminent dam failure. The box culverts on upstream side of Waterway Drive and Northgate Drive are flowing at capacity. Road closures will occur.

Observation of box culvert at Waterway Drive and Northgate Drive will be Continuous. Staff gauge readings and visual inspections shall be continuous. Observations will include monitoring for springs or boils near the dam and swirls in the lake (not from the siphon).

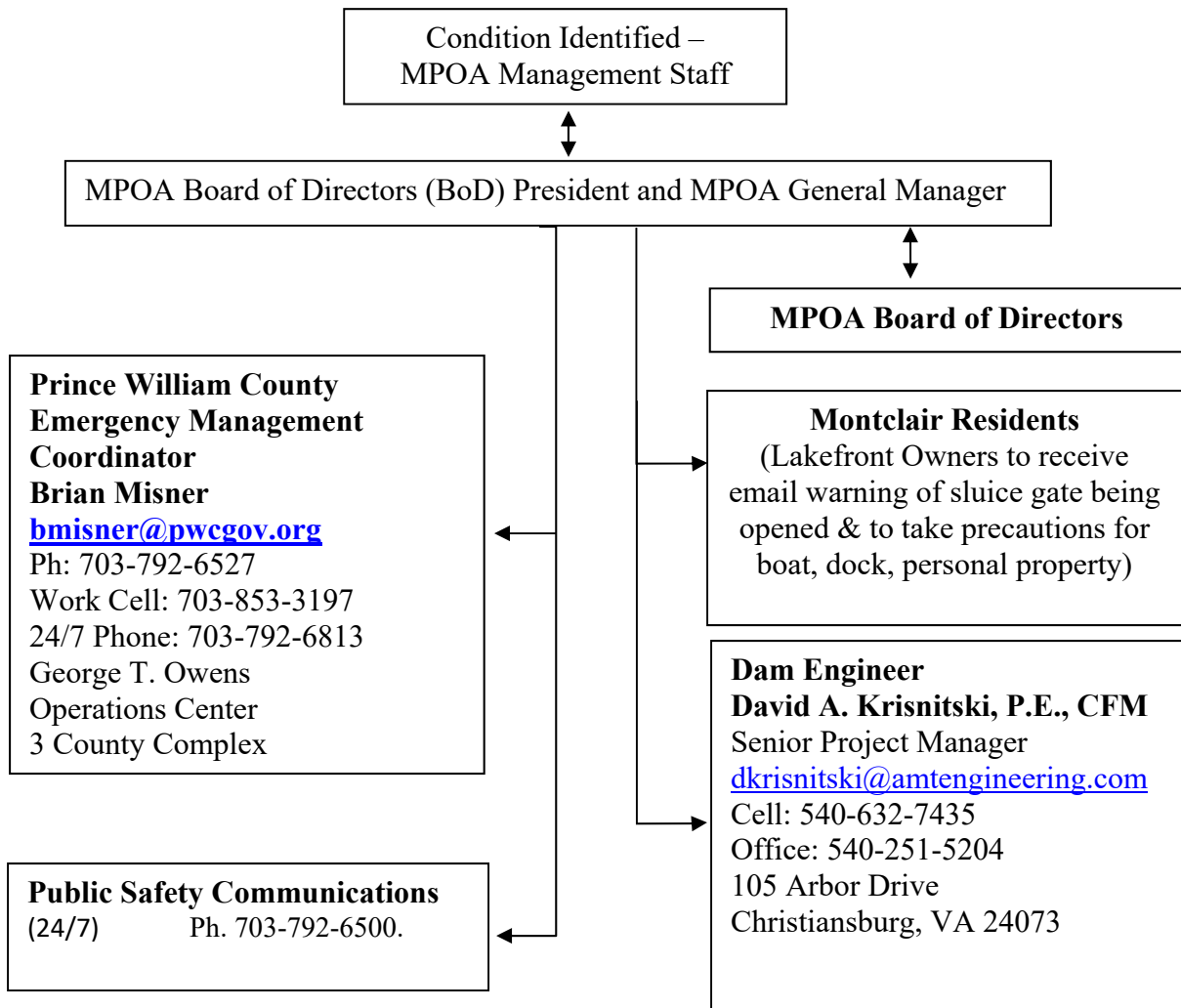
If Time Permits, a representative with knowledge of the dam will report to PWC Emergency Operations Center to assist in coordinating responses.

III. NOTIFICATION FLOW CHARTS

Once an emergency level stage condition has been determined, the following notification charts shall be used as appropriate.

A. Emergency Level Stage 1 Condition – Flood Watch or Heavy Continuous Rain

The Dam Operator should contact the designated individuals to describe the current situation, and, if necessary, request technical assistance on the next step to take.

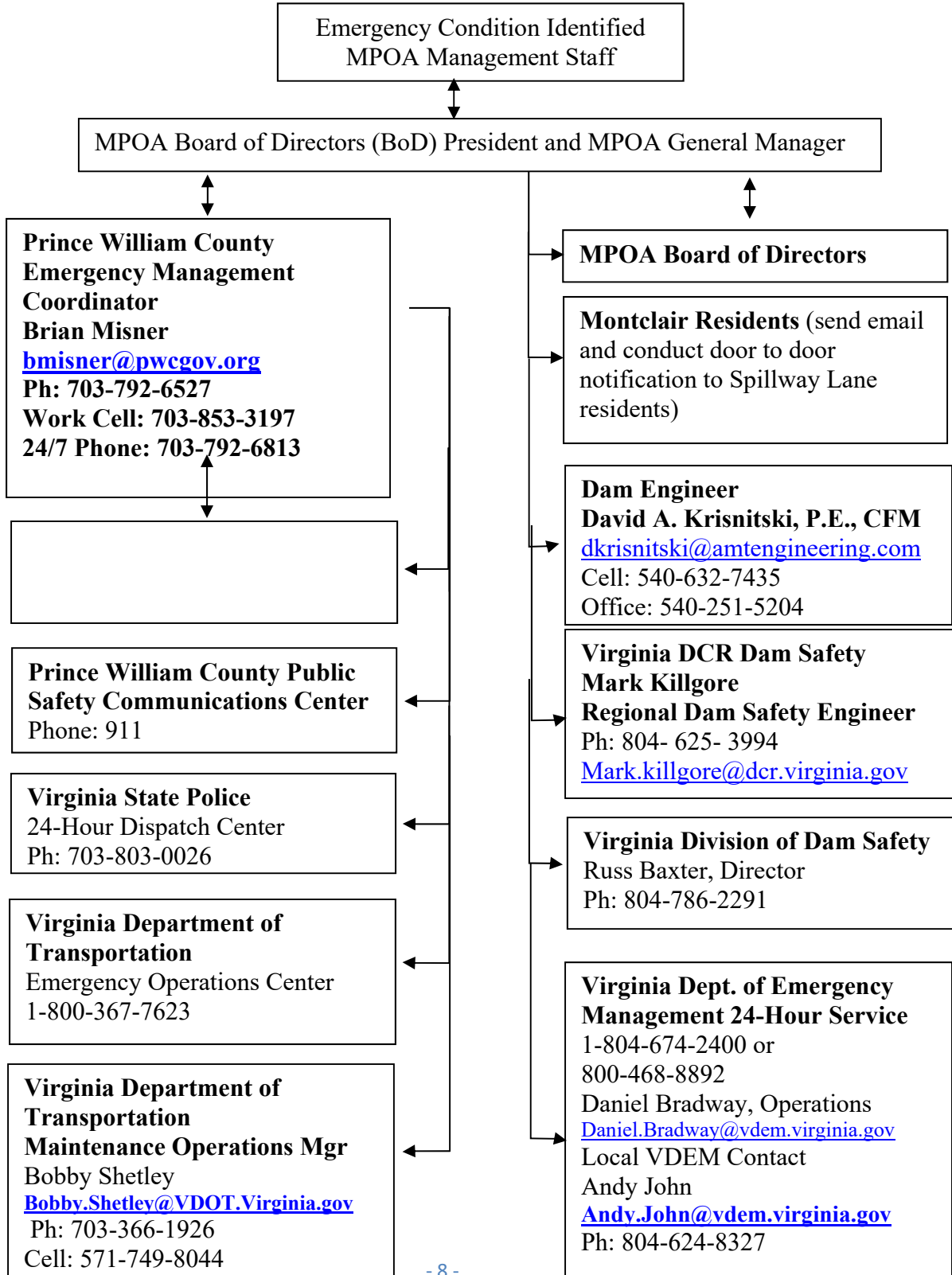


Optional message from MPOA staff to Emergency Management Coordinator:

I am at the Montclair Dam evaluating the general conditions at the dam and coordinating with a staff gage observer as recommended in the emergency action plan. If the impending storm occurs, we may move to Stage II and perform more frequent evaluations; otherwise we will visit and make observations every twelve (12) hours.

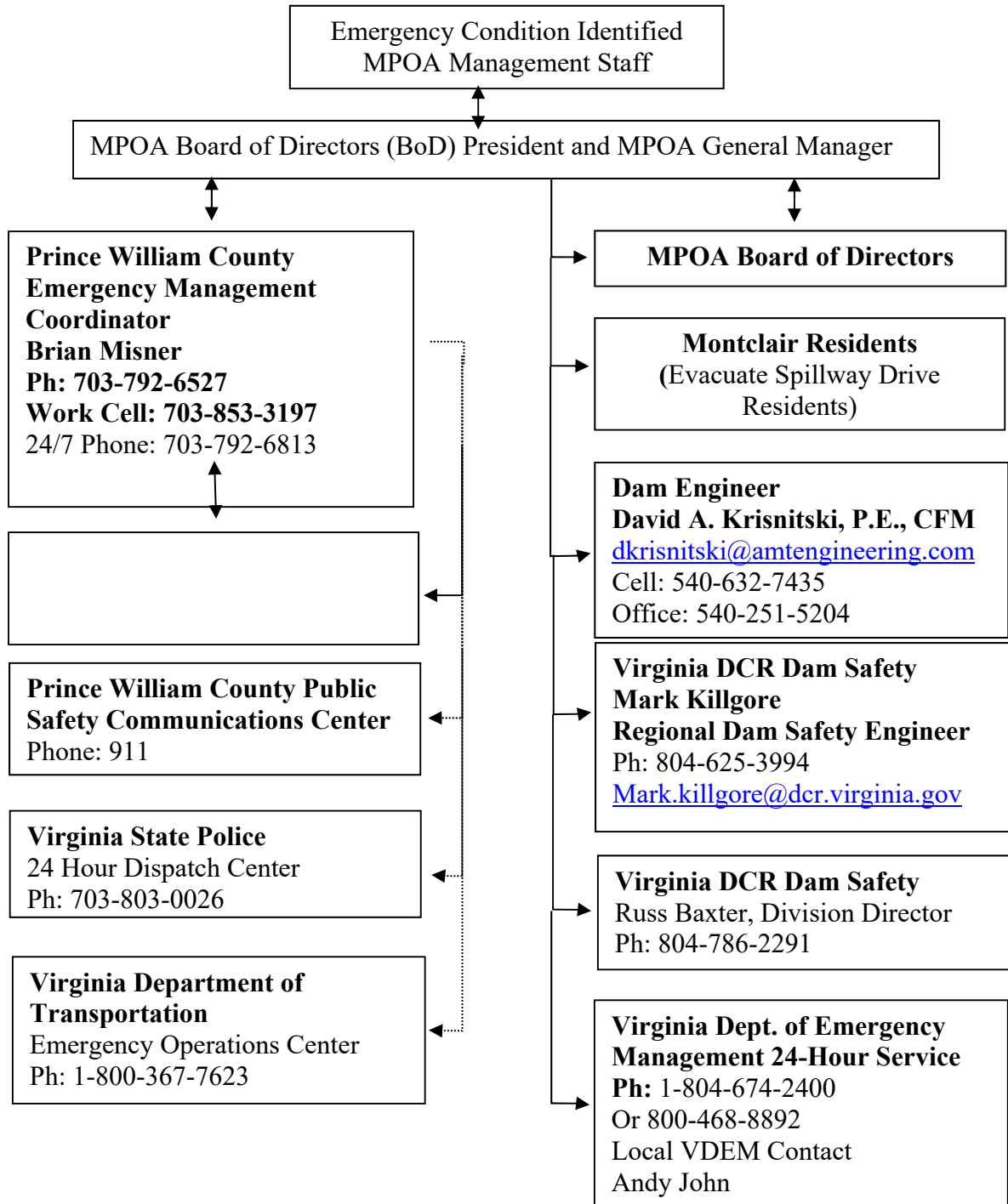
B. Emergency Level Stage 2 Condition – Auxiliary Spillway Activation

The Dam Operator shall contact the MPOA BoD President, Dam Engineer and other individuals identified in the chart below; describe the current situation, and request technical assistance on the next step to take.



C. Emergency Level Stage 3 Condition –Impounding Structure Overtopping or Breach -- Dam Failure is Imminent or in Progress

The Dam Operator shall contact the MPOA BoD President, Dam Engineer and other individuals identified in the chart below; describe the current situation, and request technical assistance on the next step to take.



D. Key Personnel, Organizations and Activities**Emergency Management Key Personnel and Activities**

FUNCTIONS/ACTIVITY	NAME	TELEPHONE	DATE EAP REVIEWED
Dam Owner – MPOA BoD President	Tracy Hansen	571-330-5341	11/7/22
Dam Operator -- MPOA General Manager	Steven Levin	703-670-6187 (c) 954-495-0268	11/7/22
Dam Operator – MPOA Operations Manager Rainfall/Staff Gauge Observer	Adam Werle	703-670-6187 (c) 540-355-9869	11/1/22
Dam Operator -- MPOA Communications	Kristy Taylor	703-670-6187 (c) 703-980-3204	11/7/22
Dam Owner – MPOA BoD Liaison, Lake Management Committee	Ned Greene	703-680-4669	11/7/22
Dam Owner – MPOA Lake Management Committee	Richard (Buck) Arvin	703-878-1657	11/7/22
Dam Engineer, AMT Engineering	David Krisnitski	540-632-7435	11/7/22
Prince William County Emergency Management Coordinator	Brian Misner	703-792-6527 (c)703-853-3197 24/7: 703-792-6813 Emergency 911	Emailed bmisner@pwcgov.org
VDOT Residency Maintenance Administrator -Northern Virginia	Steve Shannon	(o) 703-366-1929 (fax) 703-366-1930	Emailed Steven.shannon@vdot.virginia.gov
Virginia Department of Conservation & Recreation, Dam Safety & Floodplain Management	Mark Killgore	807-625-3994	Emailed Mark.killgore@dcr.virginia.gov
Virginia Department of Emergency Management Operations Center	State Emergency Ops Center	804 674-2400 or 800-468-8892	Emailed veoc@vdem.virginia.gov
VDOT Customer Service Center 24 hours 7 days a week		1-800-FOR-ROAD (800-367-7623)	N/A
VDOT-NOVA District Office, Traffic Operations Center, 14685 Avion Parkway, Chantilly, VA	(name at Traffic Ops Center)	1-800-367-7623 (24 hrs) 703-383-2000 www.VirginiaDOT.org	Emailed ufro@pwcgov.org

IV. STATEMENT OF PURPOSE

This emergency action plan is used to safeguard lives and reduce the damage to the property of citizens of Prince William County living and working along Powell's Creek in the event of failure of the Montclair Dam (inventory #153003). This EAP defines responsibilities and provides procedures designed to identify unusual and unlikely conditions that may endanger the Montclair Dam in time to take mitigating action and to notify the appropriate emergency management authorities of possible, impending, or actual failure of the impounding structure. The plan may also be used to provide notification when flood releases could create major flooding in the possible event of impounded water upstream of the dam being released uncontrollably that could potentially threaten lives in the flow path downstream or cause damage to homes, roads, bridges and other infrastructure(s) in its path.

V. PROJECT DESCRIPTION

Official Name of Dam: Lake Montclair Dam
Dam Inventory #: 153003

Purpose of Dam: Lake Montclair provides recreation (boating, fishing & swimming) and storm water management as well as sediment control for the Powell's Creek Watershed.

Water Source Stream Dammed: Powell's Creek in Prince William County, Virginia

Location of Dam: Lake Montclair Dam, located near the intersection of Dolphin Drive and Spillway Lane in the community of Montclair, Prince William County. If using a GPS navigation aid to relay the location of the dam, then input 4398 Spillway Lane, Dumfries, VA 22025 to find the location nearest the impounding structure' auxiliary spillway, also known as Montclair's Dolphin Beach. It is in the middle of the Powell's Creek Watershed about 1.5 miles West of I-95 between Route 234 and Cardinal Drive.

Dam Owner/Operator: Montclair Property Owners Association (MPOA)
3561 Waterway Drive, Montclair, VA 22025
Phone: 703-670-6187 // Fax: 703-670-9620

Dam Owner Representative: MPOA Board of Directors (BoD) President, Tracy Hansen
Dam Operator Representative: MPOA General Manager, Steven Levin
Alternate Operator & Rain/Staff Gage Observer: MPOA Operations Manager, Adam Werle

Note: MPOA currently contracts with FirstService Residential (FSR) to provide property management services, including Dam Operations and Emergency Action Services.

Type of Dam: The dam is an earthen embankment impounding structure.

Description of Impounding Structure: The Earthen Embankment Dam with spillways is 650 feet long and 72 feet tall. The primary spillway is a siphon activated spillway with a crest elevation of 187 feet above mean sea level (MSL), with a knife gate valve controlling the low-level 24-inch outlet pipe (elevation about 136 feet MSL). The crest of the dam proper is at elevation ~205 feet MSL with the auxiliary spillway crest at elevation 192.5 feet MSL. The auxiliary spillway (also referenced as Dolphin Beach) is located beyond the right abutment of the dam and has a channel width of about 166 feet. At the water side of the impounding structure (for dam operations) an outflow mechanism includes the concrete tower structure; this vertical siphon spillway is 6'3" x 8' and is ~60 feet tall. At the base of the tower is a 24" gate used to lower the elevation of the lake, when necessary. When open, this gate flows at a rate of 1,025 gallons per second and lowers the lake at a rate 1" per hour under normal lake inflows. A 235 foot long 5'x8' concrete outflow conduit carries the water through the dam. The Auxiliary Spillway (Dolphin Beach) was modified to meet Capacity and Stability requirements in 2018. A concrete Cutback Protection Wall was constructed to stop head cut erosion from reaching the lake. A structural reinforced concrete wall with sections varying from 6 to 22 feet tall was anchored into bedrock with the top below the level of the beach surface. The wall extends across the entire width of the spillway.

The last Dam Owner inspection was conducted in July 2021.

On June 21, 2022 Professional Engineer inspection services were provided by: David A. Krisnitski, P.E.

VI. EMERGENCY DETECTION, EVALUATION, AND CLASSIFICATION

Emergency condition detection and determination requires several functions to be in place as normal processes for safely operating the dam and remaining responsive to potentially hazardous incidents.

A. Event Detection and Frequency of Observations

Detection of conditions that might contribute to emergency situations is a part of MPOA risk mitigation measures that provide information to assist the Dam Operator in determining the appropriate emergency level for the respective incidents or events. Such events and situations may be detected by:

- Computerized Water Level Warning system at the dam site on Dolphin Beach;
- Upstream observations in the watershed or near the dam by MPOA staff or residents;
- Forewarning of conditions (such as severe weather or flash flood forecasts/warnings).

B. Emergency Level Stage Definitions and Descriptions

Three emergency level stages are used to manage and respond to specific situations. The first level is actually a set of pre-emergency conditions that, if properly acted upon in a timely manner, should often remain non-emergency situations because of the operational preventive responses.

"Emergency Level Stage 1 Condition" means a Flood Watch or Heavy Continuous Rain. The integrity of the Dam is not at risk, and properties and people downstream are not threatened.

Stage 1 Condition at Montclair Dam is indicated by heavy rainfall amounting to over 3 inches within a 6-hour period; or 4 inches of rainfall within a 12-hour period; or a staff gauge reading of 5 feet on the hood of the principal spillway (lake elevation of 192 feet).

A staff gauge observer will report to MPOA General Manager every 12 hours on conditions at the Dam, primary spillway and auxiliary spillway, along with conditions at the culverts.

"Emergency Level Stage 2 Condition" is a rapidly developing situation; characterized by the Auxiliary Spillway activation flowing with 4 foot depth of water & rising.

Stage 2 Condition at Montclair Dam is heavy rainfall amounting to 16 inches within a 24-hour period; or a staff gauge reading of 9.5 feet on the hood of the principal spillway (lake elevation of 196.5 feet) or 4 foot of water over the auxiliary spillway.

Staff gauge readings shall continue to be taken every 4 hours and a visual inspection of the dam and culverts on Waterway Drive and Northgate Drive shall be conducted every one-half hour to determine if potentially hazardous situations are developing, such as erosion around the Dam and potential damage to the bridge. Notify Spillway residents to evacuate area.

"Emergency Level Stage 3 Condition" is an urgent situation; characterized by the Auxiliary Spillway activation with 10 foot depth of water and rising indicating Dam Failure or Breach is Imminent or in Progress.

Stage 3 Condition at Montclair Dam is indicated by heavy rainfall amounting to 24 inches within a 24-hour period, or a staff gauge reading of 10 feet on the auxiliary spillway; or imminent dam failure. The box culverts on upstream side of Waterway Drive and Northgate Drive are flowing at capacity.

Observation of box culvert at Waterway Drive and Northgate Drive will be continuous. Staff gauge readings and visual inspections shall be continuous. Observations will include monitoring for springs or boils near the dam and swirls in the lake (not from the siphon).

Activity Steps Associated with Emergency Conditions

Step 1 -- Hazardous Condition Detection	Incident Detection (See Section VI)		
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	Emergency Stage 1 Non-Emergency Incident	Emergency Stage 2 Spillway Activation	Emergency Stage 3 Dam Failure
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Step 4 -- Frequency of Observations & Expected Actions	Inspect Dam Every 4 hours: Monitor and Listen to Weather Forecast	Inspect Dam Every 1 hour: Notify Emergency Responders	Constant Inspection of Dam: Continuous Contact with Emergency Responders

C. Event Criteria for Determining the Emergency Level Stage

Several “sunny day” events, in addition to “rainy day” events can trigger changes in emergency level determinations.

Event Criteria for Determining the Emergency Level Stage

EVENT	SITUATION	EMERGENCY LEVEL STAGE*
Auxiliary Spillway Flow	Spillway flowing with active gully erosion	2
	Spillway flowing with advancing head cut that is threatening the control section	2
Embankment overtopping	Any overtopping flow or within 2 feet of the top of the dam with water level rising	3
Seepage	New seepage areas spotted in or near the dam	1
	New seepage area with cloudy discharge or increasing flow rate	2
	Rapid flow rate increase with cloudy discharge from existing seepage area(s)	3
Sinkholes	Observation of a new sinkhole on the embankment	2
	Rapidly enlarging sinkhole	3
Vortex	Whirlpool in lake with discharge downstream	3
Embankment Cracking	New cracks in embankment greater than ¼ inch wide without seepage	1
	Cracks in the embankment with seepage	1
	Cracks in embankment with rapidly increasing seepage	3
Embankment movement	Visual movement of the embankment slope	1
	Sudden or rapidly progressing slides in slope	3
Earthquake	Measurable earthquake felt or reported within 50 miles of the dam	1
	Earthquake resulting in visible damage to the dam	1
	Earthquake damage resulting in potential uncontrolled release of water from the dam	3
Security Threat, Sabotage & Vandalism	Verified bomb threat that, if carried out, could result in dam damage	1
	Damage to the dam or appurtenances with no impacts to the functioning of the dam.	1
	Detonated bomb that has resulted in damage to the dam or its appurtenances.	2
	Damage to dam or appurtenances that has resulted in seepage flow	2
	Damage to the dam or appurtenances that has resulted in a potential uncontrolled water release	3

VII. GENERAL RESPONSIBILITIES UNDER THE EAP

The MPOA is the owner/operator of the Lake Montclair Dam and spillways and is responsible for all owner/operator functions in responding to Emergency situations.

A. Impounding Structure Owner/Operator Roles and Responsibilities

The MPOA Board of Directors (BoD) President serves as the owner representative. MPOA currently contracts with FirstService Residential (FSR) to provide property management services, including Dam Operations and Emergency Action Services. As such, the MPOA General Manager (from FSR) functions as the operator of the Dam and spillways. The other EAP and preparedness functions are performed by the MPOA Operations Manager and Maintenance along with the MPOA Communications Manager. The MPOA GM is responsible for recording progression of emergency situations in an event log.

B. Responsibility for Notification.

As soon as an event or situation is observed, forecasted, or occurs – ‘triggering’ an emergency condition – the MPOA GM or designee will immediately determine the emergency level stage and establish an emergency action center normally located in the MPOA Office of the MPOA Administration Building. If the situation warrants, an alternate location may be designated. The GM will immediately notify the personnel in the order shown on the notification charts for the appropriate emergency level stage and provide applicable updates to the respective emergency management personnel.

C. Responsibility for Evacuation

The Prince William County (PWC) Emergency Management Coordinator serves as the County’s primary contact responsible for coordination of all emergency actions that have potential impact on properties and people downstream of the Lake Montclair Dam and spillways. Such actions are associated with Emergency Level Stage 2 and 3 situations. There should be coordination for evacuation decision-making between the Dam Operator, Emergency Action Plan Coordinator, PWC Fire, Police, Emergency Management, and the Dam Owner.

Warning and evacuation of persons downstream is the responsibility of the local authorities in Prince William County. Once a condition requiring evacuation has been established, the Dam Operator or the Emergency Action Plan Coordinator shall notify Prince William County Emergency Management Coordinator. If unable to reach the Emergency Management Coordinator, the Emergency Management Duty Officer shall be contacted at the 24/7 number 703.792.6813. Evacuation centers will be established by Prince William County officials.

D. Responsibilities for Termination and Follow-Up

For all emergencies associated with storm surges and flooding, the MPOA GM is responsible for:

- Issuing an all-clear notification after lake waters have returned to normal level (187 feet);

- Assuring a complete inspection of the dam is completed by qualified engineers to determine safety and stability of the structure, and
- Terminating EAP operations once the emergency is over based on feedback from the Emergency Management Coordinator and other SMEs to ensure all life-safety operations are completed.

After Emergency Level situations are over, the MPOA GM, is responsible for informing the Prince William County (PWC) Emergency Management Coordinator, and Virginia DCR Dam Safety that the emergency associated with the Dam and/or spillway is over. It is then the responsibility of each person to notify the same group of contacts that were notified during the original event notification process to inform those people that the event has been terminated.

Prince William County emergency management officials/responders will notify the dam owner/operator when emergency operations in the inundation zone have been terminated.

E. Emergency Action Plan Operator Responsibilities

The MPOA GM responsibilities include preparing revisions to the EAP, establishing training seminars, and coordinating EAP exercises. The EAP Operator shall be the point of contact for any questions about the plan and shall assure Table Top exercises are conducted in accordance with 4VAC50-20-53.

F. Methods for notification and warning

MPOA staff will follow notification flow charts for notification and warning of all appropriate personnel and agencies.

G. Evacuation Procedures.

Once the PWC Emergency Management Coordinator has been notified of any problem at the Montclair Dam, the Emergency Management Coordinator will take appropriate protective measures in accordance with the local Emergency Operations Plan, and accompanying Emergency Action plan and Standard Operating procedures. There should be coordination for evacuation decision-making between the Dam Operator, Emergency Action Plan Coordinator, PWC Fire, Police, Emergency Management, and the Dam Owner.

VIII. PREPAREDNESS AND RISK MITIGATION MEASURES

A. Pre-emptive Actions Preparing for Hazardous Weather Conditions

MPOA has taken pre-emptive actions to mitigate risks and prepare for potentially hazardous conditions, especially those contributing to storm surges. MPOA assures continuous site access and has procedures that provide surveillance and monitoring to enable timely response. Access to the site in all weather conditions has been preplanned by the staff gauge observer and alternate observer to ensure the performance of associated duties. MPOA has an established chain of command (with primary and backup); roles are clearly assigned with training requirements identified for each role, and personnel are monitored to ensure they receive the required training.

B. Continuous Automated Warning

To provide continuous automated warning of changes in water level in Lake Montclair, the MPOA uses a computerized Water Level Warning system at the dam site on Dolphin Beach. The system (installed in November 2009) provides warning to MPOA when the water level reaches or nears flood stage.

1. At 188.0 (12 inches above norm) MSL the system sends out a warning by calling key staff members, Board President, Lake Committee liaison, Lake Committee chair. The key staff members are the Operations Manager, the maintenance team, and the General Manager. The System will call the first number, and at the end of the prompt, will ask the user to acknowledge the alarm. If the user does not acknowledge the alarm or does not answer the call, the System will move to the second number and so forth. Once the alarm has been acknowledged, the System will not continue to call the other two numbers. The system will also send text message alerts to all numbers simultaneously. The system will send a second alert at 188.5 MSL.

2. MPOA management can view the Water Level Warning System's data that includes: Lake Level in Feet, 15-minute, 1-hour, and 24-hour Rain Accumulation, System's Battery Power, and Lake Level Increase or Decrease in Inches allowing MPOA Management to monitor the Lake and Dam from a remote office. The automated warning system is equipped with the Sutron tipping bucket rain gauge and advanced data logger, Sutron's Xlite 9210 that logs data in its internal flash memory where MPOA staff can access the data either by connecting directly to the data logger using a laptop or PDA, or remotely through a telephone line.

C. Lowering of Lake Montclair

In the event of an impending storm with a prediction of rain totaling 3.5" of rain within a 4 hour period or 4" within a 12 hour period or the forecast of a Hurricane traversing over Montclair with torrential rains the following procedures will be followed. The MPOA General Manager or designee will:

1. Assess the weather conditions by monitoring the National Weather Forecast prediction to determine if conditions warrant lowering Lake Montclair; the MPOA Board President will be notified with recommendations before any action is taken.
2. Notify the Communications Manager or Assistant to send out an Emergency Message via FSR Connect and the Montclair Website and a warning telephone message for lakefront owners.
3. Notify the Operations Manager to open the sluice gate prior to the predicted storm or hurricane and lower the lake to the level as directed by the MPOA Board President (up to 3 feet); if warranted, the sluice gate may remain open during the storm to allow additional rainfall to flow through the dam.

D. MPOA Key Personnel Communications and Equipment

Alternative Systems of Communications during any emergency event should not be a problem because of alternative phones for key personnel and the widespread use of underground utilities in Montclair. Telephone land lines should be used as the first means of communications with cellular telephone used as alternative back-ups. Several methods for notification and warnings have been put in place. MPOA Key Personnel shall report to the Emergency Action Plan Coordinator when emergency level Stage 1 conditions have been initiated. MPOA Maintenance Department shall provide equipment and vehicles for possible use in emergency situations to MPOA buildings and property as well as emergency backup power to operate communication equipment used by the Dam Operator.

E. Response Readiness during periods of Darkness, Weekends and Holidays.

MPOA personnel will use the automated messaging system as described above and have someone available or on call around the clock.

F. Emergency Supplies

MPOA ensures the following are available: Vehicles, spotters, radios, barricades, emergency bullhorns, and other items as requested by PWC Emergency Management.

G. EAP Access, Review, and Exercise

Appendix B of this EAP contains the records for training, testing, exercising, updating, and distributing this EAP. This EAP is available via the Montclair website for all residents to understand MPOA preparedness for emergency situations relative to the Lake Montclair Dam. All responsible persons are given detailed instructions and procedures to be followed in the event of emergency actions. These instructions and procedures are reviewed and discussed on a periodic basis as determined by the MPOA General Manager. The EAP is exercised at least once annually; including hypothetical communications exercises within the community and with Prince William County offices and individuals concerned.

IX. INUNDATION MAPS

APPENDICES

- A. Investigation and Analysis of Impounding Structure and Spillway Integrity
- B. Records for Training, Testing, Exercising, Updating, and Distributing the EAP
- C. Site Specific Concerns

APPENDIX A
INVESTIGATION AND ANALYSIS OF IMPOUNDING STRUCTURE AND SPILLWAY INTEGRITY

Inundation Study

Froehling & Robertson, Inc., (F&R, Inc.) completed an Inundation study in July 2014. F&R, Inc., reviewed readily available mapping information relative to the impoundment and project including, but limited to, the following: United States Geological Survey (USGS) 1:24,000 scale topographic maps, natural resource Conservation Service soil survey, nation Wetland Inventory, Federal Emergency Management Authority Flood Insurance Rate Map maps USGS color infrared Aerial Photography and Digital Elevation Model.

F&R, Inc., prepared a final inundation study report documenting the procedures and providing the inundation maps. A statement of the Hazard Classification was made. An incremental analysis was also made regarding the minimum required auxiliary spillway capacity of the dam (100 year up 0.90 PMF). The capacity of the existing auxiliary spillway was determined.

The Auxiliary Spillway (Dolphin Beach) was modified to meet all Capacity and Stability requirements in 2018. A concrete Cutback Protection Wall was constructed to stop head cut erosion from reaching the lake. The structural reinforced concrete wall with sections varying from 6 to 22 feet tall were anchored to bedrock and is buried with the top at elevation 190.0 MSL which is three feet above normal pool. The wall extends across the entire width of the spillway. The Auxiliary Spillway will safely pass the PMF using the spillway surface elevation of 192.5 MSL and a 166 foot width. The Concrete cutback wall provides the required spillway stability.

APPENDIX B
RECORDS FOR TRAINING, TESTING, EXERCISING, UPDATING AND DISTRIBUTING THE EAP

Training Sessions are conducted annually for participants located on the property. The content for these sessions includes orientation to the EAP and detection and evaluation of emergency events and conditions. All responsible persons shall be given detailed instructions and procedures to be followed in the event of emergency actions. These instructions and procedures shall be reviewed and discussed on a periodic basis as determined by the MPOA General Manager.

Record of Testing and Exercising the EAP

Exercising: In conjunction with the training sessions, either a drill or a table top exercise will be conducted as required by 4VAC50-20-175.

Record of Review and Update of the EAP

This plan shall be reviewed annually and changes distributed to all plan holders. Record of Acknowledgment of Receipt of Lake Montclair Dam EAP

"Emergency Action Plan Exercise" is an activity designed to promote emergency preparedness; test or evaluate EAPs, procedures, or facilities; train personnel in emergency management duties; and demonstrate operational capability. In response to a simulated event, exercises should consist of the performance of duties, tasks, or operations very similar to the way they would be performed in a real emergency. An exercise may include but not be limited to drills and tabletop exercises.

Date of Last Exercise: 10/05/2021

List of Participants: Susan Manch, Adam Werle, Buck Arvin, Ned Green, maintenance staff members Damienn White, Rodney Sanders, Adam Sims

(See "Drill" below)

(See "Tabletop Exercise" below)

"Drill" is a type of emergency action plan exercise that tests, develops, or maintains skills in an emergency response procedure. During a drill, participants perform an in-house exercise to verify telephone numbers and other means of communication along with the owner's response. A drill is considered a necessary part of ongoing training.

Date of Last Drill: 10/05/2021

List of Participants: Susan Manch, Adam Werle, Buck Arvin, Ned Green, Damienn White, Rodney Sanders, Adam Sims

"Tabletop Exercise" is a type of emergency action plan exercise that involves a meeting of the impounding structure owner and the state and local emergency management officials in a conference room environment. The format is usually informal with minimum stress involved. The exercise begins with the description of a simulated event and proceeds with discussions by the participants to evaluate the EAP and response procedures and to resolve concerns regarding coordination and responsibilities.

Date of Last Exercise: 7/19/18

List of Participants: Phillip Weber, Tracy Hansen, Buck Arvin, Ned Green

**Acknowledgement of Receipt of the March 26, 2020 Lake Montclair Dam
Emergency Action Plan**

Daniel Bradway

Virginia Department of
Emergency Management
10501 Trade Ct., Richmond VA 23236

Date

Brian Misner

Prince William County Emergency
Management Coordinator
George T. Owens Operations Center, 3 County Complex
Woodbridge, VA22192

Date

David A. Krisnitski, P.E., CFM

AMT Engineering
Senior Project Manager
105 Arbor Drive
Christiansburg, Virginia 24073

Distribution List:

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Robert Brown (Area district rep) andy.john@vdem.virginia.gov;
2. Virginia Department of Conservation and Recreation (DCR) Dam Safety, Russ Baxter,
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3. Prince William County (PWC) Emergency Management Coordinator, Brian
Misner, bmisner@pwcgov.org and emergencymanagement@pwcgov.org
4. VDOT Program Manager for Maintenance, Bobby Shetley,
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9. MPOA Attorney, Lucia Anna Trigiani, pia.trigiani@mercertrigiani.com
10. MPOA Communications Manager, communications@montclairva.com

11. MPOA Lake Management Committee (LMC) Chairman, buckarvin@comcast.net
12. AMT Engineering, David Krisnitski, DKrisnitski@amtengineering.com

**APPENDIX C
SITE SPECIFIC CONCERNS**

The modifications to the auxiliary spillway included both widening and deepening of the spillway channel so that the entire Spillway Design Flood (SDF) may be contained. This reduces the potential for a hazardous situation for residents living on Spillway Lane, which is parallel to the auxiliary spillway. Since Spillway Lane is a cul-de-sac, prior to the project there was no easy means of vehicular escape available to the impacted residents. Even with the improved spillway, these residents should be warned of the potential for elevated flow levels and velocity in the auxiliary spillway so they may choose to shelter in place or evacuate to another location. Spillway Lane residents will be notified by email and door to door.

APPENDIX D
Sample Message Format

Something similar to the following message could be used to help describe the emergency level Stage 2 conditions and situation to respective emergency services personnel.

"This is _____ (identify yourself by name and position).

We have an emergency condition at Lake Montclair Dam, located near the intersection of Dolphin Drive and Spillway Lane in the community of Montclair, Prince William County.

We have activated the Emergency Action Plan for this dam and are currently under Emergency Level Stage 2.

Briefly describe the situation (e.g., water levels are close to overtopping the auxiliary spillway and residents on Spillway Lane have been notified of the need for evacuation, or water levels have already overtopped the auxiliary spillway and flowing around dam and residents on Spillway Lane have been evacuated, etc.).

We are implementing predetermined actions to respond to a rapidly developing situation that could result in dam failure.

Please prepare to evacuate the low lying portions of the Powell's Creek Watershed below the Lake Montclair Dam. Please reference the evacuation maps in your copy of the Emergency Action Plan.

*If you need to quickly relay the location of the dam to others using a GPS navigation aid, then use **4398 Spillway Lane, Dumfries, VA 22025** to find the location near the impounding structure auxiliary spillway known as Montclair's Dolphin Beach, about 1.5 miles West of I-95 between Route 234 and Cardinal Drive.*

We will advise you when the situation is resolved or if the situation worsens. I can be contacted at the following number: _____. If you cannot reach me, then please call the following alternate number: _____."

Something similar to the following message could be used to help describe the emergency level Stage 3 conditions and situation to respective emergency services personnel, especially the Prince William County Emergency Management Coordinator.

"This is an emergency! This is _____ (identify yourself by name and position).

Lake Montclair Dam is failing. The dam is located near the intersection of Dolphin Drive and Spillway Lane in the community of Montclair, Prince William County. The downstream area must be evacuated immediately. Repeat, Lake Montclair Dam is failing; evacuate the area along low lying portions of the Powell's Creek Watershed downstream of the Dam.

We have activated the Emergency Action Plan for this dam and are currently under Emergency Level Stage 3. Please reference the evacuation maps in your copy of the Lake Montclair Dam Emergency Action Plan.

We are implementing predetermined actions to respond to the urgent situation that requires immediate downstream evacuation.

Quickly describe the situation (e.g., water levels already overtopped the auxiliary spillway and flowing around dam and residents on Spillway Lane have been evacuated; sinkhole or crevice in the dam with water flowing through the dam, dam breach with massive amounts of water flowing into the watershed, etc.).

I can be contacted at the following number: _____. If you cannot reach me, then please call the following alternate number: _____."

*If you need to quickly relay the location of the dam to others using a GPS navigation aid, then use **4398 Spillway Lane, Dumfries, VA 22025** to find the location near the impounding structure auxiliary spillway known as Montclair's Dolphin Beach."*