

EMERGENCY ACTION PLAN

**SURVEILLANCE, WARNING AND EVACUATION PROCEDURES
for**

UNIVERSITY PARK AIRPORT DETENTION POND 4A DAM DEP NUMBER D14-123

**LOCATED ACROSS AN UNNAMED TRIBUTARY TO SPRING CREEK
IN BENNER TOWNSHIP, CENTRE COUNTY**

LATITUDE 40° 51' 12" LONGITUDE -77° 49' 58"

**SIZE CATEGORY "C"
HAZARD POTENTIAL CATEGORY "3"**

OPERATED BY:	BRYAN RODGERS, DIRECTOR THE PENNSYLVANIA STATE UNIVERSITY UNIVERSITY PARK AIRPORT 2535 FOX HILL ROAD STATE COLLEGE, PA 16803
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OWNED BY:	THE PENNSYLVANIA STATE UNIVERSITY UNIVERSITY PARK AIRPORT BRYAN RODGERS, DIRECTOR
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DATE: JANUARY 2019

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PROMULGATION AND CONCURRENCE

We, the undersigned, on date indicated, have reviewed the requested support activity in the Emergency Action Plan for the University Park Airport Detention Pond Dam 4A (D14-123). Our support action will be executed in accordance with existing recommended operating guidelines and existing municipal or county emergency operation plans.



DAM OWNER/OPERATOR
BRYAN RODGERS, DIRECTOR
PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY PARK AIRPORT

11/20/18
DATE



CENTRE COUNTY EMA
JEFFRY A. WHARRAN, DIRECTOR

11/28/18
DATE

PEMA AND DEP ACKNOWLEDGEMENTS

The Pennsylvania Emergency Management Agency has reviewed the University Park Airport Detention Pond Dam 4A (D14-123) Emergency Action Plan for appropriate content.



Director, PEMA Central Area Office

3/14/19
DATE

The Department of Environmental Protection, Division of Dam Safety, has reviewed the University Park Airport Detention Pond Dam 4A (D14-123) Emergency Action Plan for appropriate content.



Chief, Division of Dam Safety

3/25/19
DATE

I. PURPOSE AND SCOPE

- A. To safeguard the lives as well as to reduce property damage of the citizens living within the dam's potential downstream flood or inundation area.
- B. To provide for effective dam surveillance, prompt notification to local emergency management agencies, citizen warning and evacuation response, when required.
- C. To identify emergency actions to be taken by the dam owner/operator, public officials, emergency personnel, and to outline response actions in the event of a potential or imminent failure of the dam.

II. SITUATION

- A. The dam is a 600-foot long, impervious-fill earthen embankment of a stormwater detention pond for the University Airport. The height of the embankment is 29 feet measured from the downstream toe of the dam at its lowest point to the top-of- dam elevation. At top-of-dam elevation, the pool area will measure 6.5 acres. As a stormwater detention facility, the reservoir maintained by the dam embankment is normally dry. The drainage area served by the detention facility is approximately 300 acres and has the capability of impounding approximately 45 acre-feet of water at the emergency spillway crest elevation (1131.6 ft-msl) and 65 acre-feet at the top-of-dam elevation (1135.0 ft-msl) during precipitation events. The impounded stormwater will be slowly discharged from the primary outlet structure of the dam through a constructed channel from the base of the pond impoundment to Rock Road.
- B. The University Park Airport Detention Pond Dam 4A is located across an unnamed tributary to Spring Creek, at the University Airport approximately 2.1 miles northnortheast of the I-99 and SR 322 interchange. The dam is situated approximately 1,000 feet south of the Rock Road (T-376) and Minute Man Road intersection and approximately 1,550 feet eastsoutheast of the approach to Runway 24. Refer to Attachment C - *Location Map*.
- C. The inundation area resulting from a sudden dam failure consists of an area measuring approximately 70 feet wide by 700 feet long from the northeast side of the dam to Rock Road approximately 175 south of the intersection with Barns Lane and then extends southeast along and over the Rock Road roadway to the inundation area's confluence with Spring Creek in Benner Township. Refer to Attachment A - *Inundation Map*.
- D. There are no residential structures, businesses, public or institutional facilities within the inundation area. However, Rock Road (T-376) from Barns Lane to Spring Creek and also the Trail Heads of the Spring Creek and Benner Spring Trails, will be impacted in the event of a catastrophic failure of University Park Airport Detention Pond 4A Dam. Refer to Attachment A - *Inundation Map*.

III. CONCEPT OF OPERATIONS

A. SURVEILLANCE – NORMAL CONDITIONS - (DAM OWNER OR OPERATOR)

1. The Dam Operator (Pennsylvania State University, University Park Airport Director) or Airport personnel designated by the Dam Operator will conduct an on-site visual inspection of the dam, the dam's spillway(s), control systems, and the toe area below the dam at a minimum of once every three months. Any abnormal or questionable conditions will be immediately brought to the attention of the owner's engineer and the Division of Dam Safety of DEP.

B. SURVEILLANCE – UNUSUAL EVENT CONDITIONS (DAM WATCH)

1. The Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative will commence surveillance of conditions at the dam site when:
 - a. Severe thunderstorms or heavy rains with local flood warnings, tropical storms and hurricanes, or heavy rains with frozen ground and/or snow cover are occurring.
 - b. The National Weather Service issues a flash flood watch or warning and conditions warrant.
 - c. Any abnormal or questionable conditions as identified in Section III.D.1.

C. EARLY WARNING NOTIFICATION

1. The Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative is responsible for determining the dam's threat potential. The following conditions constitute early warning notification to Centre County 911/Emergency Communications Center and require 24-hour around-the-clock surveillance.
 - a. The water level in the impoundment area has reached the threshold level of six (6) feet below the top of the dam and is rising, or
 - b. Following the occurrence of an earthquake in the general region of the dam.
2. Early warning notification will be relayed from the Centre County 911/Emergency Communications Center to the Centre County EMC, the PEMA - Commonwealth Watch and Warning Center and all applicable emergency responders and designated government officials and agencies. Refer to Section IV.B. for additional notifications.

D. WARNING NOTIFICATION

1. The Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative is responsible for determining the dam's threat potential. The following conditions constitute a dam emergency requiring warning notification to Centre County 911/Emergency Communications Center.
 - a. The water level in the impoundment area has reached the threshold level of three (3) feet below the top the dam, or
 - b. Imminent failure of this dam might be indicated by observance of one or more of the following conditions at the dam site:
 - i. The lake or pond level is at or near the top of the dam and water is flowing, or about to flow, over the top of the dam.
 - ii. The overflow pipe or spillway is damaged, or clogged with debris or ice, which is resulting in a rapid rise in the lake or pond level.
 - iii. The emergency spillway is experiencing heavy flows which are causing severe erosion to the spillway or the dam embankment.
 - iv. Any sloughing or sliding of the embankment's upstream or downstream slope. Also, earth slides in the spillway channel, either upstream or downstream of the dam's crest, which could impede the flow in the spillway.
 - v. Subsidence, sinkholes or cracks found in any part of the dam's embankment or abutting slopes.
 - vi. Any new discharge of water is observed through the dam's embankment or abutting slopes, adjacent to any conduit outlets, or under the dam, which appears as a boil along the downstream toe. If a discharge occurs and the water is cloudy or muddy in color, then a very serious problem exists.
2. Warning notification will be relayed from the Centre County 911/Emergency Communications Center to the Centre County EMC, the PEMA - Commonwealth Watch and Warning Center and all applicable emergency responders and designated government officials and agencies. Refer to Section IV.B. for additional notifications.
3. Emergency management officials will accomplish the needed actions, which are explained in this EAP, in accordance with their existing recommended operating guidelines and existing municipal or county emergency operation plans.
4. Warning of the public must commence upon notification by the Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative, of a potential or imminent failure of the dam. Emergency responders should initiate action in accordance with the plan outline and any existing internal organizational

recommended operating guidelines, and existing municipal or county operation plans.

E. TERMINATION OF SURVEILLANCE AND NOTIFICATIONS

1. The Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative may terminate 24 -hour surveillance of dam site conditions when:
 - a. All National Weather Service flash flood watches or warnings have expired, **and**
 - b. Heavy rains have ended and the water level in the lake has dropped six and one-half (6.5) feet below the top of the dam and is receding.
 - c. After a personal inspection of the dam site has been conducted by a knowledgeable professional engineer following an earthquake, overtopping of the dam, or an evacuation of the inundation area as a result of this EAP, or other serious problems resulting in a notification of a dam site emergency and the Department concurs with the results of the inspection.
2. Upon termination of 24-hour surveillance of dam site conditions, the Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative shall notify the Centre County 911/Emergency Communications Center.
3. Termination of surveillance and notifications will be relayed from the Centre County 911/Emergency Communications Center to the Centre County EMC, the PEMA - Commonwealth Watch and Warning Center and all applicable emergency responders and designated government officials and agencies. Refer to Section IV.B. for additional notifications.

IV. RESPONSIBILITIES AND DUTIES - EMERGENCY RESPONSE

A. DAM OWNER OR DAM OPERATOR (DAM SITE EMERGENCY)

1. The Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative will provide for 24-hour on-site dam surveillance and monitoring as required in Section III.C.1. and initiate early warning notification to the Centre County 911/Emergency Communications Center.
2. When the situation meets the criteria under the warning and evacuation notification guidelines, presented in Section III.D.1, indicating a failure of the dam is possible or a significant threat condition is developing, the Dam Operator (Pennsylvania State University, University Park Airport Director) or a designated representative will initiate warning and evacuation notification to the Centre County 911/Emergency Communications Center.

B. COUNTY 911/EMERGENCY COMMUNICATIONS CENTER

1. The Centre County 911/Emergency Communications Center will notify:
 - a. Centre County EMA
 - b. PEMA - Commonwealth Watch and Warning Center (CWWC)
 - c. University Police Services
 - d. Alpha Fire Company
 - e. Undine Fire Company
 - f. Logan Fire Company
 - g. PA State Police – (Rockview Barracks)
 - h. Centre Lifelink Emergency Medical Services (EMS)

C. COUNTY EMA

1. The Centre County EMA will notify:
 - a. National Weather Service
 - b. Penn State Emergency Management Office
 - c. Media – Early Warning and/or Warning and Evacuation (Activate EAS). Refer to Attachment E
 - d. Benner Township EMA
 - e. Centre County EOC Staff, as necessary
 - f. American Red Cross – Centre County Chapter (when mass care or family assistance is required). Coordinate sheltering per ESF 6 of Centre County EOP.
 - g. State College Area School District (regarding closure of school bus routes).
 - h. Centre County elected officials
 - i. Pennsylvania Emergency Management Agency
 - j. PennDOT - District 2-1
 - k. Benner Township Public Works Department
2. The Centre County EMA will ascertain and report to PEMA any unmet needs requirements.
3. The Centre County EMA will initiate Damage Assessment and Recovery procedures as the situation requires.

D. LOCAL MUNICIPAL EMAs

BENNER TOWNSHIP EMA

PENN STATE UNIVERSITY EMERGENCY MANAGEMENT OFFICE

1. Advise facilities with special needs individuals as outlined in the Emergency Operations Plan (EOP) and identified by the Hazard Vulnerability Analysis (areas impacted due to a dam failure and indicated on the *Inundation Map*).
2. Notify municipal elected officials and any affected municipal services (water, sewer, etc.).
3. Keep the County EMA apprised of the situation.
4. Coordinate the evacuation (where appropriate).
5. Provide damage reporting to the Centre County EMA.

E. FIRE DEPARTMENTS

ALPHA FIRE COMPANY

UNDINE FIRE COMPANY

LOGAN FIRE COMPANY

1. Provide citizen notification and route alerting to advise residents living within their jurisdiction (See Inundation Map - Attachment A).
2. Assist in evacuation.
3. Assist police and EMS, as requested.
4. Provide communications support if feasible and requested.

F. POLICE SERVICES

UNIVERSITY POLICE SERVICES

PENNSYLVANIA STATE POLICE, ROCKVIEW BARRACKS

1. Dispatch radio vehicle to dam site in order to provide alternate communications link to PSAP/911 – University Police Services.
2. Assist evacuation traffic flow and establish traffic control points (TCP) at pre-designated locations (See Inundation Map – Attachment A and Traffic Control Points – Attachment B).
3. Prevent unauthorized entry and provide security of evacuated areas.
4. Provide assistance with route alerting, if requested.

G. EMERGENCY MEDICAL SERVICES (EMS)

CENTRE LIFELINK EMERGENCY MEDICAL SERVICES (EMS)

1. Provide evacuation transportation assistance and coordinate with designated fire services agencies for transportation of persons with disabilities and any special needs.
2. Assist fire and police departments as requested.
3. Provide EMS support to any mass care center as requested.

H. AMERICAN RED CROSS

CENTRE COUNTY CHAPTER (If requested by Centre County EMA)

1. Identify and activate an appropriate shelter, as necessary.
2. Support and maintain operations of the reception center.
3. Maintain communications with Centre County EMC, Benner Township EMA and reception center.

I. PUBLIC WORKS AND HIGHWAY DEPARTMENTS

**PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
BENNER TOWNSHIP PUBLIC WORKS DEPARTMENT**

1. Provide services, signs, barricades and guidance on roads and bridges affecting the evacuation and recovery.

V. ADMINISTRATION AND LOGISTICS – NOT REQUIRED

VI. AUTHORITY AND REFERENCES

A. AUTHORITY

1. The Dam Safety and Encroachments Act (32 P.S. Sections 693.1-693.27), May 16, 1985.
2. The Pennsylvania Code - Title 25, Chapter 105 Dam Safety and Waterways Management, Section 105.63 and 105.134.
3. Emergency Management Services Code, 35 Pa C.S. Section 7101 et seq., as amended.

B. REFERENCES

1. Guidelines for Developing an Emergency Action Plan for Hazard Category 1, 2, and 3 Dams. Prepared by the Department of Environmental Protection, Water Management, Bureau of Waterways Engineering and Wetlands, Division of Dam Safety and the Pennsylvania Emergency Management Agency, January 2009.
2. Inspection, Maintenance and Operation of Dams in Pennsylvania. Prepared by the Department of Environmental Protection, Water Management, Bureau of Waterways Engineering and Wetlands, Division of Dam Safety, February 2009.
3. Centre County Emergency Operations Plan.

VII. DEFINITIONS

- A. **ABUTMENT** - The part of the valley's hillside against which the dam abuts. Right and left abutments are those on respective sides of the dam as an observer looks downstream.
- B. **AFFECTED COUNTIES/MUNICIPALITIES** – Those jurisdictions within Pennsylvania or adjoining states that, according to the inundation map, may experience flooding as a result of a failure of the dam.
- C. **BOIL** - A disturbance in the surface layer of soil caused by water escaping under pressure from behind a water-retaining structure such as a dam or a levee. The boil may be accompanied by deposition of soil particles (usually sand or silt) in the form of a ring (miniature volcano) around the area where the water escapes.
- D. **BREACH** - An opening or a breakthrough of a dam sometimes caused by rapid erosion of a section of earth embankment by water.
- E. **COMMONWEALTH RESPONSE COORDINATION CENTER (CRCC)** - Serves as the Commonwealth's primary coordination point for response and recovery operations during natural or human-caused disasters and other emergencies. When activated, state agencies, volunteer organizations, and other stakeholders send representatives to the CRCC where they work to coordinate state agency response and recovery efforts to support affected counties and local jurisdictions.
- F. **COMMONWEALTH WATCH AND WARNING CENTER (CWWC)** - Serves as the 24/7 monitoring and emergency alerting hub for all-hazards incidents and events throughout the Commonwealth. The CWWC works with county Public Safety Answering Points (PSAP's), Emergency Management agencies, state agencies and other stakeholders to maintain Situational Awareness (SA) and provide a Common Operating Picture (COP) for agencies throughout the state.
- G. **CONDUIT** - A pipe used to convey water through or around or under a dam.
- H. **CONTROL TOWER** - A structure in the dam or reservoir used to control withdraw of water from the reservoir through pipes or culverts.

- I. **CREST OF DAM** - The crown of an overflow section of the dam. In the United States, the term "crest of dam" is often used when "top of dam" is intended. To avoid confusion, the terms **crest of spillway** and **top of dam** should be used for referring to the overflow section and dam proper, respectively.
- J. **CULVERT** - (a) A drain or waterway structure built transversely under a road, railway, or embankment. A culvert usually comprises a pipe or a covered channel of box section. (b) A gallery or waterway constructed through any type of dam, which is normally dry but is used occasionally for discharging water; hence the terms scour culvert, drawoff culvert and spillway culvert.
- K. **DAM** - A barrier built across a watercourse for impounding or diverting the flow of water.
- L. **DAM FAILURE** - The uncontrolled release of a dam's impounded water. It is recognized that there are degrees of failure. Any malfunction or abnormality, outside the design assumptions and parameters, which adversely affect a dam's primary function of impounding water is properly considered a failure. Minor malfunctions or abnormalities can result in a sudden failure of a dam.
- M. **EARTH DAM (EARTHFILL DAM)** - An embankment dam in which more than 50% of the total volume is formed of compacted fine-grained earth.
- N. **EMBANKMENT** - Fill material, usually earth or rock, placed with sloping sides.
- O. **EMERGENCY** - A condition of serious nature which develops unexpectedly and endangers the structural integrity of a dam or endangers downstream property and human life. An emergency requires immediate action.
- P. **EAP** – Emergency Action Plan - A formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to be followed to minimize property damage and loss of life. It contains procedures and information to assist the dam owner in issuing early warning and notification messages to responsible downstream emergency management authorities of the emergency situation. It also contains inundation maps to show the emergency management authorities of the critical areas for action in case of an emergency.
- Q. **EOP** – Emergency Operations Plan - “The document ... which describes the hazards, vulnerabilities, emergency management situations and assumptions that affect the municipality, the concept of operations during an emergency, and the various roles and assignments of the elected officials, emergency management coordinator and other emergency response personnel, whether paid or volunteer.” (From PEMA Directive D2007-1). The EOP includes checklists for known critical facilities, special facilities, critical personnel, hearing impaired residents, non-English speaking residents, residents requiring ambulance assistance, etc., as identified by local emergency management officials.
- R. **FACE** - With reference to a structure, the external surface that limits the structure, e.g., the face of a wall or dam.
- S. **FAILURE** - An incident resulting in the uncontrolled release of water from an operating dam. See “Dam Failure”.
- T. **FOUNDATION OF DAM** - The natural material on which the dam structure is placed.

- U. **GROIN** - That area along the contact (or intersection) of the face of a dam with the abutment.
- V. **HAZARD** - A situation which creates the potential for adverse consequences such as loss of life, property damage, and adverse social and environmental impacts. Impacts may be for a defined area downstream of a dam from floodwaters released through spillways and outlet works of the dam or waters released by partial or complete failure of the dam. This could include an area upstream of the dam from effects of backwater flooding or effects of landslides around the reservoir perimeter.
- W. **INUNDATION AREA** - The downstream area that would be flooded or otherwise affected by the failure of a dam or large flows. This area can be subject to a fast moving flood wave, 20 to 50 MPH is common, with a height of 1 foot to tens of feet.
- X. **INUNDATION MAP** - A map delineating the area that would probably be flooded in the event of a dam failure. This map must be prepared by a registered professional engineer.
- Y. **NOTIFICATION** - To promptly inform appropriate individuals or emergency agency about an emergency condition so they can initiate appropriate actions.
- Z. **NORMAL WATER LEVEL (NORMAL WATER POOL)** - For reservoir with a fixed overflow spillway crest, it is the lowest level of that crest.
- AA. **OPERATOR** - The person or position in a company or organization, who is responsible for a dam's operation and surveillance.
- BB. **OUTLET** - A constructed opening through which water can be safely discharged for a particular purpose from a reservoir.
- CC. **OWNER** - Any person, authority or agency that manages a dam or reservoir.
- DD. **PSAP** - Public Safety Answering Point - an agency in the United States, typically county or city controlled, responsible for answering 9-1-1 calls for emergency assistance from police, fire, and ambulance services.
- EE. **SEEPAGE** - The movement of water that might occur through the dam, its foundation or its abutments. Small amounts of clear water seepage is normal. Increase in the amount of water flow or change in color is a concern for a dam's safety.
- FF. **SLIDE** - The movement of a mass of earth down a slope. In embankments and abutments, this involves the separation of a portion of the slope from the surrounding materials.
- GG. **SPILLWAY** - A structure over or through which flows are discharged. If the flow is controlled by gates, it is considered a controlled spillway; if the elevation of the spillway crest is the only control, it is considered an uncontrolled spillway.
- HH. **SPILLWAY CHANNEL** - A channel conveying water from the spillway crest to the river downstream.
- II. **TOE OF DAM** - The junction of the downstream face of a dam with the ground surface. Also, referred to as downstream toe. For an embankment dam, the junction of the upstream face with ground surface is called the upstream toe.

- JJ. **TOP OF DAM** - The elevation of the uppermost surface of a dam, usually a road or walkway, excluding any parapet wall, railings, etc.
- KK. **TRAFFIC CONTROL POINT (TCP)** – Manned or unmanned posts established at critical road junctions for the purpose of controlling or limiting traffic. TCPs are used to control evacuation movement and also limit entry into the inundation area when an emergency situation requires it.
- LL. **VOAD** - Voluntary Organizations Active in Disasters - collaboration of diverse organizations and citizens trained to meet community needs in the wake of a large-scale disaster.

VII. EXERCISE AND TRAINING

The dam owner will advise and cooperate with the Centre County EMA of any exercises scheduled, and coordinate with the Centre County EMA to exercise all or portions of this EAP as part of the county's all-hazard exercise program schedule.

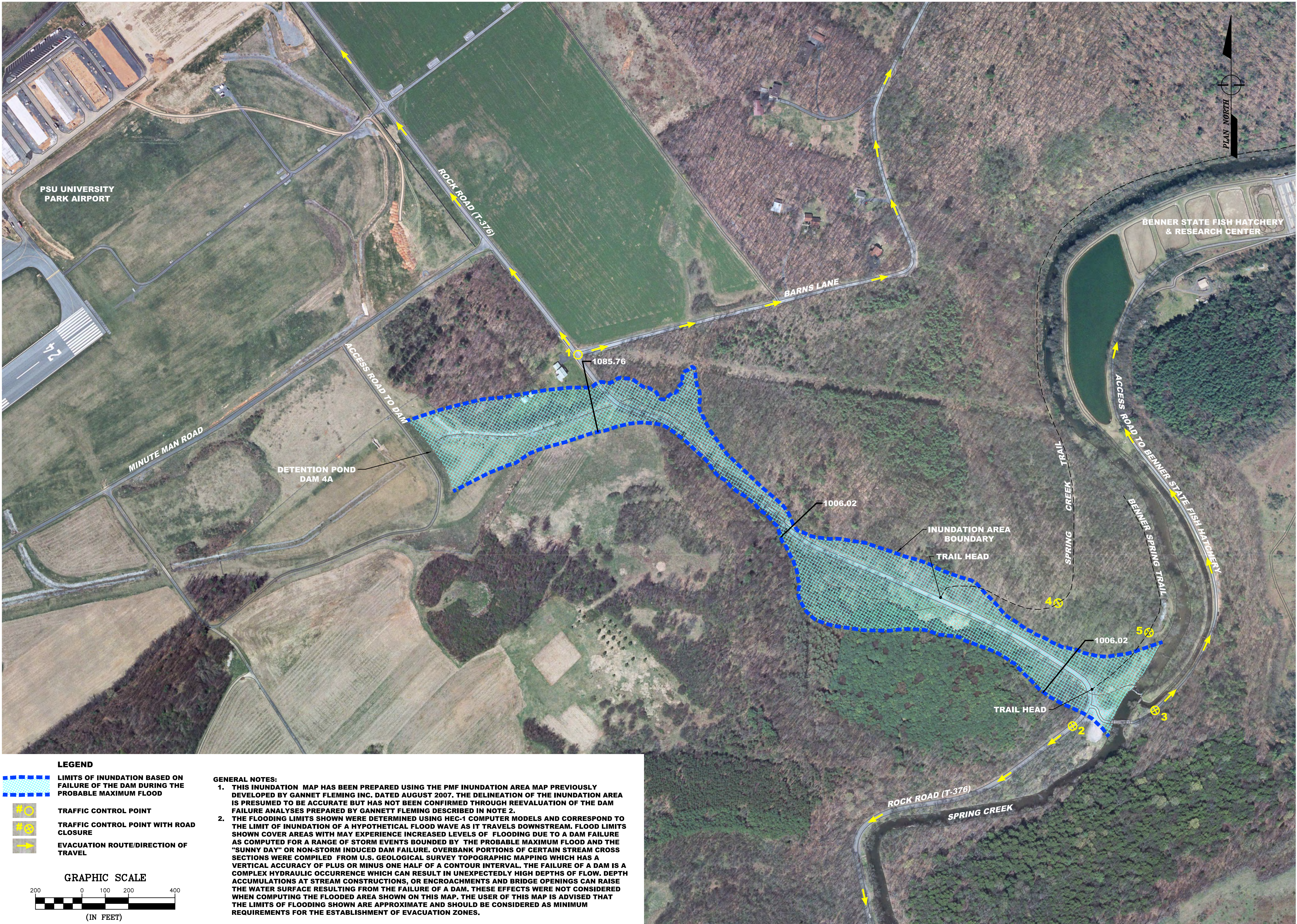
IX. PLAN MAINTENANCE AND DISTRIBUTION

- A. This EAP will be reviewed every five years by the owner or the owner's engineer. During the five-year review:
 - 1. The owner or the owner's engineer will conduct an on-site review of the flood (inundation) area for any increase in downstream development and revise the Inundation Map, if needed.
 - 2. The owner's engineer will review and revise surveillance conditions as needed.
 - 3. The owner will coordinate with Centre County EMA if population increase or development within the inundation area could affect the emergency response requirements. If so, a new or revised plan must be developed.
 - 4. The owner will meet with and obtain concurrence from the Centre County EMC.
 - 5. The owner will submit 6 copies at a minimum of the revised plan to DEP for review and approval.
- B. A copy of the approved EAP will be distributed by the dam owner to those emergency response agencies listed in Section IV. DEP, Division of Dam Safety will distribute a copy of the approved EAP to PEMA's Area Office, the affected county Emergency Management Agency(s) and PSAP/911 Center(s), the National Weather Service, and the DEP's Regional Office. Within 60 days, the dam owner will submit a letter certifying distribution of the approved EAP and posting of NOTICE(s) to the DEP, Division of Dam Safety.

ATTACHMENTS:

ATTACHMENT A INUNDATION MAP
ATTACHMENT B TRAFFIC CONTROL POINTS
ATTACHMENT C LOCATION MAP
ATTACHMENT D TELEPHONE ROSTER
ATTACHMENT E MEDIA ANNOUNCEMENT

**ATTACHMENT A
INUNDATION MAP
DETENTION POND 4A**



LEGEND

LIMITS OF INUNDATION BASED ON FAILURE OF THE DAM DURING THE PROBABLE MAXIMUM FLOOD

TRAFFIC CONTROL POINT

TRAFFIC CONTROL POINT WITH ROAD CLOSURE

EVACUATION ROUTE/DIRECTION OF TRAVEL

GRAPHIC SCALE

200 0 100 200 400

(IN FEET)

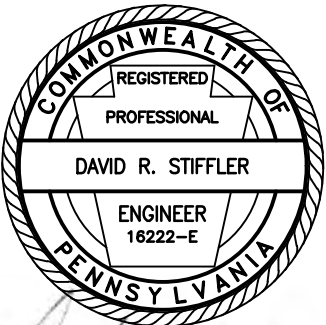
GENERAL NOTES:

1. THIS INUNDATION MAP HAS BEEN PREPARED USING THE PMF INUNDATION AREA MAP PREVIOUSLY DEVELOPED BY GANNETT FLEMING INC. DATED AUGUST 2007. THE DELINEATION OF THE INUNDATION AREA IS PRESUMED TO BE ACCURATE BUT HAS NOT BEEN CONFIRMED THROUGH REEVALUATION OF THE DAM FAILURE ANALYSES PREPARED BY GANNETT FLEMING DESCRIBED IN NOTE 2.

2. THE FLOODING LIMITS SHOWN WERE DETERMINED USING HEC-1 COMPUTER MODELS AND CORRESPOND TO THE LIMIT OF INUNDATION OF A HYPOTHETICAL FLOOD WAVE AS IT TRAVELS DOWNSTREAM. FLOOD LIMITS SHOWN COVER AREAS WITH MAY EXPERIENCE INCREASED LEVELS OF FLOODING DUE TO A DAM FAILURE AS COMPUTED FOR A RANGE OF STORM EVENTS BOUNDED BY THE PROBABLE MAXIMUM FLOOD AND THE "SUNNY DAY" OR NON-STORM INDUCED DAM FAILURE. OVERBANK PORTIONS OF CERTAIN STREAM CROSS SECTIONS WERE COMPILED FROM U.S. GEOLOGICAL SURVEY TOPOGRAPHIC MAPPING WHICH HAS A VERTICAL ACCURACY OF PLUS OR MINUS ONE HALF OF A CONTOUR INTERVAL. THE FAILURE OF A DAM IS A COMPLEX HYDRAULIC OCCURRENCE WHICH CAN RESULT IN UNEXPECTEDLY HIGH DEPTHS OF FLOW. DEPTH ACCUMULATIONS AT STREAM CONSTRUCTIONS, OR ENCROACHMENTS AND BRIDGE OPENINGS CAN RAISE THE WATER SURFACE RESULTING FROM THE FAILURE OF A DAM. THESE EFFECTS WERE NOT CONSIDERED WHEN COMPUTING THE FLOODED AREA SHOWN ON THIS MAP. THE USER OF THIS MAP IS ADVISED THAT THE LIMITS OF FLOODING SHOWN ARE APPROXIMATE AND SHOULD BE CONSIDERED AS MINIMUM REQUIREMENTS FOR THE ESTABLISHMENT OF EVACUATION ZONES.



1731 N. Juniata Street
Hollidaysburg, PA 16648
Phone: 814.696.6280 Fax: 814.696.6240



Stiffler, McGraw & Associates, Inc.

Owner:
PENNSYLVANIA STATE
UNIVERSITY
UNIVERSITY PARK AIRPORT
2535 FOX HILL ROAD
STATE COLLEGE, PA 16803

Project Name:
DETENTION POND DAM 4A

DEP NO. D14-123

BENNER TOWNSHIP
CENTRE COUNTY, PENNSYLVANIA

Revisions:		
No.	Date	Description
1		

Sheet Title:

INUNDATION PLAN

PROJECT NO.	08-0018
DRAWN BY:	SEL
DESIGNED BY:	RMM
CHECKED BY:	DRS
SCALE:	GRAPHIC

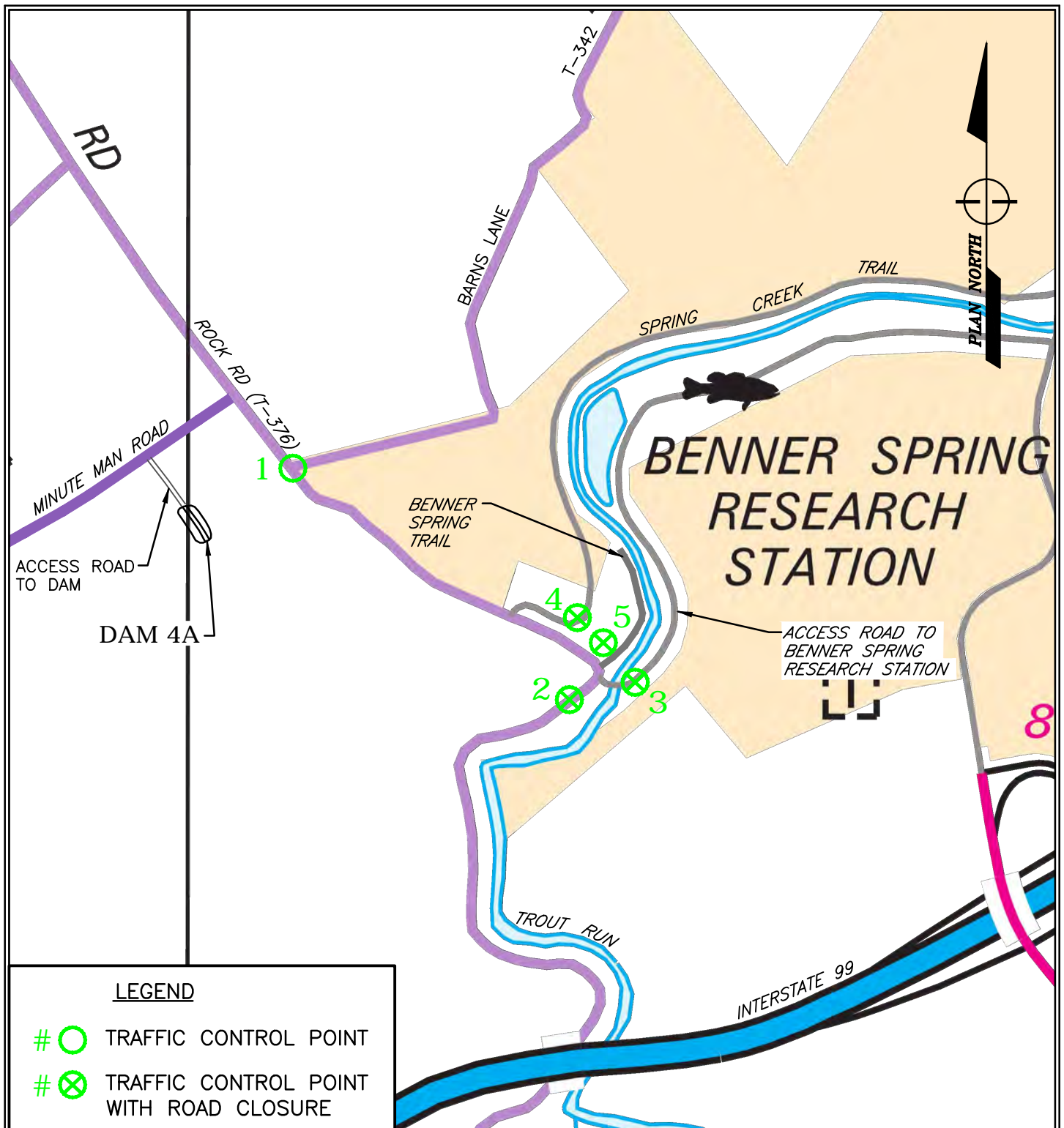
Drawing:

IND-1

ATTACHMENT B

TRAFFIC CONTROL POINTS

- TCP – 1 At Rock Road (T-376) and Barns Lane (T-342) intersection. Traffic control for evacuation routing and access control to the inundation area and Dam site. University Police, with assistance from Alpha, Undine and Logan Fire Companies as needed.
- TCP – 2 On Rock Road (T-376), immediately southwest of the intersection with the access road to PA Fish and Boat Commission Benner Spring State Hatchery and Research Center. Road closure. University Police, with assistance from Alpha, Undine and Logan Fire Companies as needed.
- TCP - 3 East side of bridge on access road to the PA Fish and Boat Commission Benner Spring State Hatchery and Research Center. Road closure. University Police, with assistance from Alpha, Undine and Logan Fire Companies as needed.
- TCP - 4 On Spring Creek Trail, 500 feet northeast of trailhead access point at Rock Road (T-376). Trail closure-Unmanned. University Police, with assistance from Alpha, Undine and Logan Fire Companies as needed.
- TCP - 5 On Benner Spring Trail 300 feet northeast of the Rock Road (T-376) trailhead access point. Trail closure - unmanned. University Police, with assistance from Alpha, Undine and Logan Fire Companies as needed



LEGEND

- # ○ TRAFFIC CONTROL POINT
- # ⊗ TRAFFIC CONTROL POINT WITH ROAD CLOSURE

ATTACHMENT B
SCALE: 1" = 1000'

EMERGENCY ACTION PLAN TRAFFIC CONTROL POINTS

REVISED DATE: OCTOBER 2018

PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY PARK AIRPORT

DETENTION POND 4A DAM
DEP NUMBER D14-123

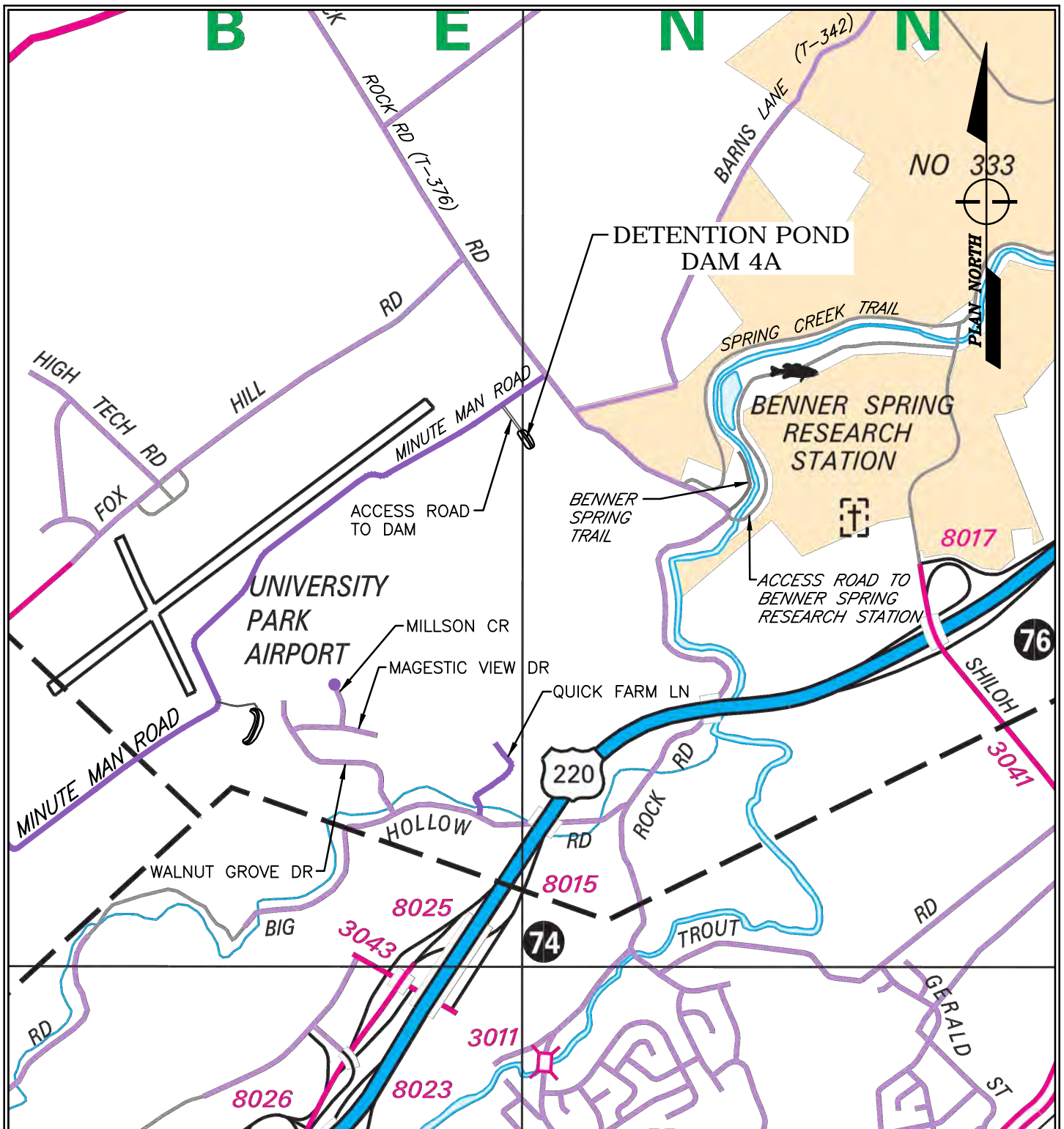
BENNER TOWNSHIP
CENTRE COUNTY, PA
PROJECT NO.: 08-0018.119

ATTACHMENT C

LOCATION MAP

Directions to Dam Site:

From I-99 northbound, take the exit toward Innovation Park/Penn State Beaver Stadium. Turn right onto E. Park Avenue (follow signs for the airport). Follow E. Park Avenue (SR 3007) for 0.81 miles to the intersection with Fox Hollow Road (SR-3005). Turn right onto Fox Hollow Road and follow Fox Hollow Road in a northwesterly direction for 1.8 miles to the intersection with Hemlock Hill Road. At Hemlock Hill Road (T-880), Fox Hollow Road becomes Fox Hill Road (SR-3005). Follow Fox Hill Road for 3.25 miles to the intersection with Rock Road (T-376). Turn right onto Rock Road (T-376) and follow south for 0.38 miles to the intersection of Minute Man Road on the right. Turn right onto Minute Man Road and follow for 0.15 miles to the dam access road on the left. Turn left onto the access drive and follow the access drive 340 feet to the dam site access gate.



ATTACHMENT C
SCALE: 1" = 2000'

EMERGENCY ACTION PLAN
DAM LOCATION MAP

REVISED DATE: OCTOBER 2018

PENNSYLVANIA STATE UNIVERSITY
UNIVERSITY PARK AIRPORT

DETENTION POND 4A DAM
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BENNER TOWNSHIP
CENTRE COUNTY, PA
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ATTACHMENT D TELEPHONE ROSTER

	NON-EMERGENCY	EMERGENCY
DAM OWNER:		
Penn State University, University Park Airport	814-865-5511	814-865-4042
Bryan Rodgers, Director		814-409-8627 (cell)
DAM OPERATOR:		
Penn State University, University Park Airport	814-865-5511	814-865-4042
Bryan Rodgers, Director		814-409-8627 (cell)
Centre County 911/Emergency Communications Center	814-355-6800	911
Dale I. Neff, Director		
PA DEP North Central Regional Office	570-327-3636	570-327-3636
PA DEP Division of Dam Safety	717-787-8568	717-787-4343
		800-541-2050
		717-805-3057
Pennsylvania Emergency Management Agency	717-651-2001	717-651-2001
	800-424-7362	800-424-7362
Centre County Emergency Management Agency	814-355-6745	911
Jeffrey A. Wharran, Director		
Penn State University Emergency Management Office	814-867-3430	911
Brian Bittner, Director		
Penn State University Police Services	814-865-1864	911
Keith Morris, Chief		814-863-1111
Pennsylvania State Police, Rockview Barracks	814-355-7545	911
Alpha Fire Company	814-237-5359	911
Undine Fire Company	814-355-7265	911
Logan Fire Company	814-355-3100	911
Centre LifeLink EMS	814-237-8163	911
Scott Rawson, Exec. Director		
Kent Knable, EMS Chief		
Benner Township EMA	814-404-8483	911
Jayson Lose, EMA Coordinator		

ATTACHMENT D

TELEPHONE ROSTER

American Red Cross, Centre Communities Region Virginia Dimling Brown, Executive Director	814-237-3162	N/A
Benner Township Supervisors	814-355-1419	N/A
Centre County Commissioners	814-355-6700	N/A
PSU University Park Airport Dam Engineering Consult Stiffler, McGraw and Associates David Stiffler, P.E.	814-696-6280	814-696-6280

MEDIA CONTACTS

TV Stations

WTAJ TV	814-237-1010
WHVL TV	814-238-9485
WWCP TV	814-237-4987
C-Net TV	814-238-5031
WRSC TV	814-237-4201
WJAC TV	814-238-0604

Radio Stations:

WRSC/WAPY Radio	814-237-4201
WBHV/WOWY/WWSH Radio	814-238-5085
WBUS Radio	814-867-9287
WFGE Radio	814-272-0408
WMAJ Radio	814-234-3550
WPSU Radio	814-865-1877
WGMR Radio	814-238-0717
WTLR Radio	814-237-9857
WRXV Radio	814-867-3836
WUBZ Radio	814-272-2899
WQJU Radio	814-288-9857
WBLF Radio	814-272-1320
WZWW Radio	814-231-0953

ATTACHMENT E
MEDIA ANNOUNCEMENT

EARLY WARNING MESSAGE:

The Centre County Emergency Management Agency advises that due to conditions at the Penn State University Park Airport Detention Pond 4A Dam in Benner Township, the public should avoid the area downstream of the dam. The inundation area resulting from a sudden dam failure includes an area measuring approximately 70 feet wide by 700 feet long between the dam breast and Rock Road approximately 175 south of the intersection with Barns Lane and then extends southeast along and over the Rock Road roadway for approximately 2,500 feet to Spring Creek in Benner Township. Stay tuned for further information.

REPEAT PERIODICALLY

WARNING MESSAGE:

The Centre County Emergency Management Agency is advising all individuals downstream of Penn State University Park Airport Detention Pond 4A Dam in Benner Township to evacuate the area immediately. Evacuate the areas situated along Rock Road from the Barns Lane intersection southeast to Spring Creek near the entrance to the PA Fish and Boat Commission's Benner State Fish Hatchery and Research Center. If you require shelter during this emergency you should report to (location of reception/mass care center to be determined by county EMC, American Red Cross or other VOAD at time of emergency).

REPEAT PERIODICALLY

INCIDENT RESOLVED - SAFE TO RETURN:

The Centre County Emergency Management Agency is advising residents of the area downstream of the University Park Airport Detention Pond 4A Dam in Benner Township that the problem at the dam has been resolved and that residents may return to their homes.

REPEAT PERIODICALLY