

**EMERGENCY ACTION PLAN**

**SURVEILLANCE, WARNING AND EVACUATION PROCEDURES**

**HIBERNIA DAM (PA-436F)  
DEP NUMBER D15-360**

**LOCATED ACROSS BIRCH RUN  
AT HIBERNIA COUNTY PARK  
IN WEST CALN TOWNSHIP, CHESTER COUNTY**

**LATITUDE: 40° 01' 44" LONGITUDE: -75° 50' 55"**

**SIZE CATEGORY "B"  
HAZARD POTENTIAL CATEGORY "1"**

**OPERATED BY: SEUNG AH BYUN, EXECUTIVE DIRECTOR  
CHESTER COUNTY WATER RESOURCES AUTHORITY**  
**ADDRESS: 601 WESTTOWN ROAD, SUITE 260  
WEST CHESTER, PA 19380-0990**  
**TELEPHONE: BUSINESS: (610) 344-5400  
CELL: (610) 396-7403  
EMERGENCY 24-HR CONTACT: 911**  
**E-MAIL: sbyun@chesco.org**

**OWNED BY: CHESTER COUNTY WATER RESOURCES AUTHORITY**  
**ADDRESS: 601 WESTTOWN ROAD, SUITE 260  
WEST CHESTER, PA 19380-0990**  
**TELEPHONE: BUSINESS: (610) 344-5400  
CELL: (610) 396-7403  
EMERGENCY 24-HR CONTACT: 911**  
**E-MAIL: sbyun@chesco.org**  
**WEB PAGE: www.chesco.org/water**

The Hibernia Dam Emergency Action Plan has been prepared by  
Gannett Fleming, Inc. and the Chester County Water Resources Authority.

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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 Hibernia Dam. Our support action will be executed in accordance with existing recommended operating guidelines and existing municipal or county emergency operation plans.

**DAM OWNER AND CHESTER COUNTY DEPARTMENT OF EMERGENCY SERVICES  
AND DELAWARE COUNTY EMERGENCY SERVICES DEPARTMENT**



\_\_\_\_\_  
CHESTER COUNTY WATER RESOURCES AUTHORITY  
EXECUTIVE DIRECTOR  
(DAM OWNER/OPERATOR)

8/11/2021

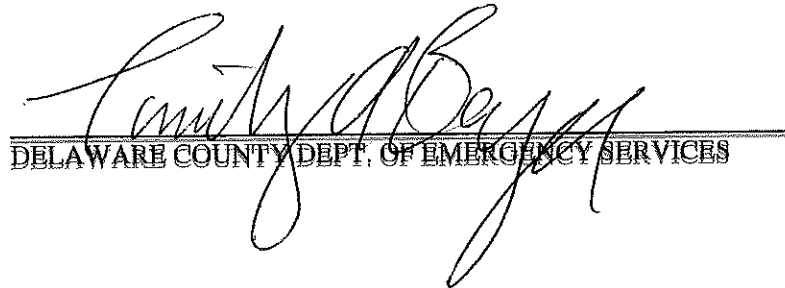
\_\_\_\_\_  
DATE



\_\_\_\_\_  
CHESTER COUNTY DEPT. OF EMERGENCY SERVICES

09/29/2021

\_\_\_\_\_  
DATE



\_\_\_\_\_  
DELAWARE COUNTY DEPT. OF EMERGENCY SERVICES

12/12/21

\_\_\_\_\_  
DATE

# PEMA AND DEP APPROVALS

The Pennsylvania Emergency Management Agency has reviewed the Emergency Action Plan for HIBERNIA DAM (D15-360).

\_\_\_\_\_  
Director, PEMA Eastern Area Office

\_\_\_\_\_  
DATE

The Department of Environmental Protection, Division of Dam Safety, has reviewed the Emergency Action Plan for HIBERNIA DAM (D15-360).

\_\_\_\_\_  
Chief, Division of Dam Safety

\_\_\_\_\_  
DATE

▼ Dam 15-360 - Chester, West Caln Township - Chester County Water Resources Authority - Hibernia (PA-436F)

[Add New Comment](#)

**Tom Bold** from PA Department of Environmental Protection  
Commented on 7/12/2022 8:16 AM

**Anthony Camillocci** from Eastern  
Commented on 7/11/2022 8:44 AM

**David Williams** from Eastern  
Commented on 7/1/2022 9:19 AM  
Plan sections have been reviewed for approval.

« < 1 > » showing 1 to 3 ( of 3 records)

## 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 64.5-foot high, 700-foot long earthen multipurpose dam, maintaining a normal pool (permanent pool) of 1,226 acre-feet (400 million gallons) of water with a maximum pool (top of dam) capacity of 3,300 acre-feet (1,075 million gallons).
- B. The dam is located across Birch Run at Hibernia County Park in West Caln Township, Chester County, 5 miles north of Coatesville and 1 mile west of State Route 82. Refer to the Location Map at *Attachment C*.
- C. The inundation area resulting from a sudden dam failure is essentially trending northwest to southeast through Chester and Delaware Counties adjacent to Birch Run, the West Branch Brandywine Creek and Brandywine Creek through West Brandywine Township, West Caln Township, Valley Township, City of Coatesville, South Coatesville Borough, Modena Borough, East Fallowfield Township, Newlin Township, West Bradford Township, East Bradford Township, Pocopson Township, Pennsbury Township, Birmingham Township and Chadds Ford Township in Pennsylvania; and New Castle County in Delaware. Refer to the Inundation Map at *Attachment A*.
- D. Within the inundation area, it is estimated that there are approximately 1,500 people that may be present on an average business day in all the homes, business, and other affected areas in the inundation area. This estimate includes approximately 1,000 residents, 460 homes, multiple businesses with a population of about 500, and 500 students at 2 schools. Sections of the City of Coatesville and the Boroughs of South Coatesville and Modena are located in the inundation area. Refer to the Inundation Map at *Attachment A*.
- E. Critical Infrastructure  
Within the inundation area there are seven critical infrastructure facilities, including Superfund Amendment & Reauthorization Act Sites (SARA Sites). Those critical facilities are:
  - 1. Gordon Early Literacy Center
  - 2. Cleveland-Cliffs Inc. Emergency Services
  - 3. Cleveland-Cliffs Inc. Coatesville
  - 4. PA American Water Coatesville Wastewater Treatment Plant (SARA Site)
  - 5. Sealed Air Corporation (SARA Site)
  - 6. South Coatesville Sewage Treatment Plant (SARA Site)
  - 7. Chadds Ford Elementary School

The preceding list of critical infrastructure facilities has been provided by the Chester County Department of Emergency Services in June 2021.

### III. CONCEPT OF OPERATIONS

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

1. The Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, 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 Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, will commence surveillance of conditions at the dam site when:
  - a. Severe thunderstorms, heavy rains with local flood warnings, tropical storms and hurricanes, or heavy rains with frozen ground and/or snow cover are occurring, and conditions warrant.
  - 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.
2. The Executive Director of CCWRA, or their designee, will commence 24 hour around-the-clock surveillance of conditions at the dam site when:
  - a. The water level in the impoundment area has reached the threshold level of 12.5 feet below the top of the dam (elevation 584.0 feet) and is rising (see *Attachment G*).
  - b. At lower impoundment elevations if abnormal or questionable conditions warrant.

#### C. EARLY WARNING NOTIFICATION

1. The Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, is responsible for determining the dam's threat potential. The following conditions constitute a dam early warning notification to the Chester County 9-1-1 Communications Center.
  - a. The water level in the impoundment area has reached the threshold level of 10.0 feet below the top of the dam (1.0 foot below auxiliary spillway crest and consistent with elevation 586.5 feet) 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 Chester County 9-1-1 Communications Center to the
  - ... Chester County Department of Emergency Services,
  - ... PEMA's Commonwealth Watch and Warning Center,
  - ... Hibernia County Park Rangers,
  - ... Director of Chester County Parks and Preservation Department,
  - ... Director of Chester County Facilities Department,
  - ... and all applicable emergency responders and designated government officials and agencies.

D. WARNING AND EVACUATION NOTIFICATION

1. The Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, is responsible for determining the dam's threat potential. The following conditions constitute a dam emergency requiring warning and evacuation notification to the Chester County 9-1-1 Communications Center.
  - a. Warning and Early Evacuation of Three (3) Nearby Residences (Attachment A and Attachment H)
    - i. When flood waters rise to within 1 foot below the crest of the auxiliary spillway (elevation 586.5 feet), the three (3) residences within Hibernia County Park that are directly downstream of Hibernia Dam should be evacuated. These three residences (Cottages 1, 3 & 5) are listed in Attachment H and illustrated on Page 1 of Attachment A. These residences may be impacted by elevated water levels in Birch Run and the West Branch Brandywine Creek when water is flowing through the auxiliary spillway.
  - b. Downstream Warning and Evacuation
    - i. The depth of flow in the auxiliary spillway has reached a depth of 6.5 feet (and consistent with elevation 594.0 feet), and
    - ii. The water level in the impoundment area has reached the threshold level of 2.5 feet below the top the dam, is rising and is about to flow over the top of the dam within approximately 1 hour, or
    - iii. Imminent failure of this dam might be indicated by observance of one or more of the following conditions at the dam site:
      - a. The lake level is rising and is at or near the top of the dam and water is flowing, or about to flow, over the top of the dam.
      - b. The principal spillway or auxiliary spillway is damaged, or clogged with debris or ice, which is resulting in a rapid rise in the lake or pond level.
      - c. The auxiliary spillway is experiencing heavy flows which are causing severe erosion to the spillway or the dam embankment.

- d. Any structural movement or failure of the principal spillway structure.
  - e. Any sloughing or sliding of the embankment upstream or downstream slope. Also, earth slides in the auxiliary spillway channel, either upstream or downstream of the dam's crest, which could impede the flow in the auxiliary spillway.
  - f. Subsidence, sinkholes or cracks found in any part of the dam's embankment or abutting slopes.
  - g. 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. Should such a discharge occur and the water is cloudy or muddy in color, then a very serious problem exists.
2. Warning and evacuation notification will be relayed from the Chester County 9-1-1 Communications Center to the Chester County Department of Emergency Services, the PEMA Commonwealth Watch and Warning Center and all applicable emergency responders and designated government officials and agencies.
  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 and evacuation of the public must commence upon notification by the Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, 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 Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, 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 13.0 feet below the top of the dam (elevation of 583.5 feet on the staff plate located at Hibernia 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 Pennsylvania Department of Environmental Protection concurs with the results of the inspection.



2. Upon termination of 24-hour surveillance of dam site conditions, the Executive Director of Chester County Water Resources Authority (CCWRA), or their designee, shall notify the Chester County 9-1-1 Communications Center.
3. Termination of notifications will be relayed from the Chester County 9-1-1 Communications Center to the Chester County Department of Emergency Services, the PEMA Commonwealth Watch and Warning Center and all applicable emergency responders and designated government officials and agencies.

#### **IV. RESPONSIBILITIES AND DUTIES - EMERGENCY RESPONSE**

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

1. Dispatch radio vehicle to dam site in order to provide alternate communications link to PSAP/911 – Chester County Water Resources Authority has been issued radios on the CCDES emergency radio system and will provide radio communication.
2. The Executive Director of CCWRA, or their designee, 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 Chester County 9-1-1 Communications Center.
3. 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 Executive Director of CCWRA, or their designee, will initiate warning and evacuation communication to the Chester County 9-1-1 Communications Center.

B. COUNTY PSAP - 911

1. The Chester County 9-1-1 Communications Center will notify:
  - a. Chester County Department of Emergency Services (DES)
  - b. Delaware County 9-1-1
  - c. New Castle County (Delaware) 9-1-1
  - d. PEMA - CWWC
  - e. Hibernia County Park Rangers
  - f. Director of Chester County Parks and Preservation Department
  - g. Director of Chester County Facilities Department
  - h. West Caln Township Police Department
  - i. Wagontown Fire Company
  - j. Westwood Fire Company Ambulance
  - k. West Brandywine Township Police Department
  - l. Valley Township Police Department
  - m. Westwood Fire Company
  - n. Coatesville City Police Department
  - o. West End Fire Company of Coatesville
  - p. Washington Hose Fire Company
  - q. Washington Hose Ambulance
  - r. Cleveland-Cliffs Inc. Emergency Services
  - s. Sadsbury Township Police Department
  - t. Caln Township Police Department
  - u. TowerDirect EMS (Medic93)
  - v. South Coatesville Borough Police Department
  - w. Modena Fire Company
  - x. Modena Fire Company Ambulance
  - y. East Fallowfield Township Police Department
  - z. PA State Police – Embreeville
  - aa. Po-Mar-Lin Fire Company
  - ab. Good Fellowship Ambulance
  - ac. Longwood Fire Company Ambulance
  - ad. West Bradford Fire Company
  - ae. PA State Police - Avondale
  - af. Longwood Fire Company
  - ag. West Chester Borough Police Department
  - ah. 1<sup>st</sup> West Chester Fire Company
  - ai. Birmingham Township Police Department

2. The DELAWARE COUNTY 9-1-1 will notify:
  - a. Delaware County Emergency Services Department (ESD)
  - b. PA State Police – Media Barracks
  - c. Concordville Fire Company
  - d. Concordville Fire Company Ambulance
  
3. The NEW CASTLE COUNTY (Delaware) 9-1-1 will notify:
  - a. New Castle County (DE) Office of Emergency Management
  - b. New Castle County Police Dept
  - c. Delaware State Police
  - d. Talleyville Fire Company
  - e. Talleyville Fire Company (Ambulance)

C. COUNTY EMA

1. The Chester County Department of Emergency Services will contact the following personnel and agencies:
  - a. National Weather Service
  - b. West Caln Township Emergency Management Coordinator
  - c. West Brandywine Township Emergency Management Coordinator
  - d. Valley Township Emergency Management Coordinator
  - e. Coatesville City Emergency Management Coordinator
  - f. South Coatesville Borough Emergency Management Coordinator
  - g. Modena Borough Emergency Management Coordinator
  - h. Caln Township Emergency Management Coordinator
  - i. Sadsbury Township Emergency Management Coordinator
  - j. East Fallowfield Township Emergency Management Coordinator
  - k. Newlin Township Emergency Management Coordinator
  - l. West Bradford Township Emergency Management Coordinator
  - m. Pocopson Township Emergency Management Coordinator
  - n. East Bradford Township Emergency Management Coordinator
  - o. Birmingham Township Emergency Management Coordinator
  - p. Pennsbury Township Emergency Management Coordinator
  - q. New Castle County, Delaware, Emergency Management Coordinator
  - r. Media - Warning and/or Evacuation (Activate EAS). Refer to ***Attachment E***
  - s. Chester County Department of Emergency Services Staff, as necessary
  - t. American Red Cross – Delaware Valley PA Chapter (when mass care or family assistance is required). Coordinate sheltering per the Mass Care Position of the County EOP.
  - u. Chester County elected officials
  - v. Coatesville Area School District
  - w. Cottage #5 (Evacuation Site – 1)

- x. Cottage #3 (Evacuation Site – 2)
  - y. Cottage #1 (Evacuation Site – 3)
  - z. Gordon Early Literacy Center (Evacuation Site – 4)
  - aa. Cleveland-Cliffs Inc. (Evacuation Site - 5)
  - bb. Harrison House of Coatesville (Evacuation Site – 6)
  - cc. West Chester Area School District
  - dd. Unionville - Chadds Ford School District
  - ee. Chadds Ford Elementary School, Unionville – Chadds Ford School District (Evacuation Site – 7)
  - ff. Brandywine River Museum/ Brandywine Conservancy (Evacuation Site – 8)
  - gg. Pennsylvania Emergency Management Agency
  - hh. PennDOT – Chester County Maintenance Office – District 6-2
  - ii. Amtrak
  - jj. SEPTA
  - kk. Krapf Bus Company
  - ll. All critical infrastructures outlined in Section II if not already notified
2. The DELAWARE COUNTY ESD will notify:
    - a. Chadds Ford Township Emergency Management Coordinator
    - b. PennDOT – Delaware County Maintenance Office – District 6-3
    - c. Delaware County elected officials
  3. The Chester County DES and the Delaware County ESD will ascertain and report to PEMA any unmet needs requirements.
  4. The Chester County DES and the Delaware County ESD will initiate Damage Assessment and Recovery procedures as the situation requires.
  5. A telephone roster of municipal emergency management coordinators and other agencies are listed in ***Attachment D***.
  6. The NEW CASTLE COUNTY, DELAWARE, OFFICE OF EMERGENCY MANAGEMENT/NEW CASTLE COUNTY EMERGENCY OPERATIONS CENTER will notify:
    - a. Delaware Department of Transportation
    - b. New Castle County elected officials
  7. The New Castle County, Delaware, Office of Emergency Management/New Castle County Emergency Operations Center will coordinate the evacuation (where appropriate).

D. LOCAL MUNICIPAL EMAS

**CHESTER COUNTY**

WEST CALN TOWNSHIP EMC  
WEST BRANDYWINE EMC  
VALLEY TOWNSHIP EMC  
COATESVILLE CITY EMC  
SOUTH COATESVILLE BOROUGH EMC  
MODENA BOROUGH EMC  
CALN TOWNSHIP EMC  
SADSBURY TOWNSHIP EMC  
EAST FALLOWFIELD TOWNSHIP EMC  
NEWLIN TOWNSHIP EMC  
WEST BRADFORD TOWNSHIP EMC  
POCOPSON TOWNSHIP EMC  
EAST BRADFORD TOWNSHIP EMC  
BIRMINGHAM TOWNSHIP EMC  
PENNSBURY TOWNSHIP EMC

**DELAWARE COUNTY**

CHADDS FORD TOWNSHIP EMC

- a. 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 **Attachment A - Inundation Maps**).
- b. Notify municipal elected officials and municipal services (water, sewer, etc.).
- c. Keep the Chester County DES and the Delaware County ESD apprised of the situation.
- d. Coordinate the evacuation (where appropriate).
- e. Provide damage reporting to the Chester County DES and the Delaware County ESD County Department of Emergency Services.

E. FIRE DEPARTMENTS

**CHESTER COUNTY**

WAGONTOWN FIRE COMPANY  
WESTWOOD FIRE COMPANY  
WEST END FIRE COMPANY OF COATESVILLE  
WASHINGTON HOSE FIRE COMPANY  
CLEVELAND-CLIFFS, INC. EMERGENCY SERVICES  
MODENA FIRE COMPANY  
PO-MAR-LIN FIRE COMPANY  
WEST BRADFORD FIRE COMPANY  
LONGWOOD FIRE COMPANY  
1<sup>ST</sup> WEST CHESTER FIRE COMPANY

**DELAWARE COUNTY**  
CONCORDVILLE FIRE COMPANY

**NEW CASTLE COUNTY, DE**  
TALLEYVILLE (DELAWARE) FIRE DEPARTMENT

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

F. POLICE SERVICES

**CHESTER COUNTY**  
HIBERNIA COUNTY PARK RANGERS  
WEST CALN TOWNSHIP POLICE DEPARTMENT  
WEST BRANDYWINE TOWNSHIP POLICE DEPARTMENT  
VALLEY TOWNSHIP POLICE DEPARTMENT  
COATESVILLE CITY POLICE DEPARTMENT  
SADSBURY TOWNSHIP POLICE DEPARTMENT  
CALN TOWNSHIP POLICE DEPARTMENT  
SOUTH COATESVILLE BOROUGH POLICE DEPARTMENT  
EAST FALLOWFIELD TOWNSHIP POLICE DEPARTMENT  
PA STATE POLICE – EMBREEVILLE  
PA STATE POLICE – AVONDALE  
WEST CHESTER BOROUGH POLICE DEPARTMENT  
BIRMINGHAM TOWNSHIP POLICE DEPARTMENT

**DELAWARE COUNTY**  
PA STATE POLICE – MEDIA BARRACKS

**NEW CASTLE COUNTY, DE**  
NEW CASTLE COUNTY (DELAWARE) POLICE DEPARTMENT  
DELAWARE STATE POLICE

1. Hibernia County Park Rangers will close and secure the entrance gate for Hibernia County Park on Lions Head Road at Wagontown Road.
2. Assist evacuation traffic flow and establish traffic control points (TCP) at pre-designated locations (See **Attachment A - Inundation Maps** and **Attachment B - Traffic Control Points**).
3. Prevent unauthorized entry and provide security of evacuated areas.
4. Provide assistance with route alerting, if requested.

G. EMERGENCY MEDICAL SERVICES (EMS)

**CHESTER COUNTY**

WESTWOOD FIRE COMPANY AMBULANCE  
TOWER DIRECT EMS (MEDIC93)  
WASHINGTON HOSE COMPANY AMBULANCE  
CLEVELAND-CLIFFS INC. EMERGENCY SERVICES  
MODENA FIRE COMPANY AMBULANCE  
GOOD FELLOWSHIP AMBULANCE CORPS  
LONGWOOD FIRE COMPANY AMBULANCE

**DELAWARE COUNTY**

CONCORDVILLE FIRE COMPANY AMBULANCE

**NEW CASTLE COUNTY, DE**

TALLEYVILLE FIRE COMPANY (AMBULANCE)

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 OR VOLUNTEER ORGANIZATION ACTIVE IN DISASTERS (VOAD)

**CHESTER COUNTY AND DELAWARE COUNTY**

DELAWARE VALLEY PA CHAPTER (If requested by Chester County DES or Delaware County DES)

1. Identify and activate an appropriate shelter(s), as necessary.
2. Support and maintain operations of the shelters and/or comfort centers.
3. Maintain communications with Chester County DES, Delaware County ESD, local EMAs and shelters and/or comfort center.

**NEW CASTLE COUNTY, DE**

DELMARVA CHAPTER (If requested by the New Castle County Office of Emergency Management/New Castle County Emergency Operations Center)

1. Identify and activate an appropriate shelter(s), as necessary.
2. Support and maintain operations of the shelters and/or comfort centers.
3. Maintain communications with New Castle County Office of Emergency Management/New Castle County Emergency Operations Center, local EMA and shelters and/or comfort center.

I. DEPARTMENTS OF TRANSPORTATION (PennDOT)

**CHESTER COUNTY**

PennDOT, Chester County Maintenance Office – District 6-2

**DELAWARE COUNTY**

PennDOT, Delaware County Maintenance Office – District 6-3

**NEW CASTLE COUNTY, DE**

Delaware Department of Transportation

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



**V. ADMINISTRATION AND LOGISTICS**

A. The *NOTICE* (**Attachment F**) will be posted in the following public places located within the inundation area:

1. West Caln Township Building
2. West Brandywine Township Building
3. Valley Township Building
4. Coatesville City Hall
5. South Coatesville Borough Hall
6. Modena Borough Hall
7. East Fallowfield Township Building
8. Newlin Township Building
9. West Bradford Township Building
10. Pocopson Township Building
11. East Bradford Township Building
12. Birmingham Township Building
13. Pennsbury Township Building
14. Chadds Ford Township Building
15. New Castle County, Delaware, Administration Building
16. Chambers Lake public boat launch, Hibernia County Park
17. US Post Office, Wagontown
18. Coatesville Public Library

B. The *NOTICE* must state that copies of the Emergency Action Plan for this dam are available for inspection at the following locations:

1. Chester County Water Resources Authority – Dam Owner  
601 Westtown Road, Suite 260  
West Chester, PA 19380
2. Chester County Department of Emergency Services  
601 Westtown Road, Suite 012  
West Chester, PA 19380
3. Delaware County Emergency Services  
360 North Middletown Road  
Lima, PA 19063-5594
4. West Caln Township Office  
721 W. Kings Highway  
Wagontown, PA 19376
5. West Brandywine Township Office  
198 Lafayette Road  
Coatesville, PA 19320

6. Valley Township Office  
890 West Lincoln Highway  
Coatesville, PA 19320
7. Coatesville City Hall  
One City Hall Place  
Coatesville, PA 19320
8. South Coatesville Borough Office  
136 Modena Road  
South Coatesville, PA 19320
9. Modena Borough Office  
5 Woodland Avenue  
Modena, PA 19358
10. East Fallowfield Township Office  
2264 Strasburg Road  
East Fallowfield, PA 19320
11. Newlin Township Office  
1751 Embreeville Road  
Coatesville, PA 19320
12. West Bradford Township Office  
1385 Campus Drive  
Downingtown, PA 19335
13. Pocopson Township Office  
740 Denton Hollow Road  
West Chester, PA 19382
14. East Bradford Township Office  
676 Copeland School Road  
West Chester, PA 19380
15. Birmingham Township Office  
1040 W. Street Rd. (Rt. 926)  
West Chester, PA 19382-8012
16. Pennsbury Township Office  
702 Baltimore Pike  
Chadds Ford, PA 19317
17. Chadds Ford Township Office  
10 Ring Road  
Chadds Ford, PA 19317
18. New Castle County (Delaware) Office of Emergency Management  
3601 N. DuPont Highway  
New Castle, DE 19720

- B. A new *NOTICE* will be sent to those locations in paragraph "A" when the EAP is revised.
- C. The Dam Owner is responsible to verify posting of the *NOTICE* and documenting the status in the annual inspection report.

## 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 Dams. Prepared by the Department of Environmental Protection, Water Management, Bureau of Waterways Engineering, 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, Division of Dam Safety, February 2009.
3. Chester County Emergency Operations Plan.
4. Delaware County Emergency Operations Plan.
5. New Castle 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 flood-waters 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.

## VIII. EXERCISE AND TRAINING

The dam owner will advise and cooperate with the Chester County DES, the Delaware County ESD and the New Castle County OEM of any exercises scheduled, and coordinate with the Chester County DES, the Delaware County ESD and the New Castle County OEM 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 **Attachment A - Inundation Map**, as needed.
  2. The owner’s engineer will review and revise surveillance conditions as needed.
  3. The owner will coordinate with the Chester County DES, the Delaware County ESD and the New Castle County OEM if population increase or development within the inundation area could affect the emergency response requirements. If so, a new or revised plan should be developed.
  4. The owner will meet with and obtain concurrence from the Chester, Delaware and New Castle County EMCs.
  5. The owner will submit the revised/updated EAP to DEP, via the virtual planning program, for review and acknowledgement.
- B. A copy of the EAP will be distributed by the dam owner to those emergency response agencies listed in Section IV. The dam owner will also distribute a copy of the EAP to the affected county Emergency Management Agency(s) and PSAP//911 Centers, the National Weather Service, and DEP’s Regional Office. Within 60 days, the dam owner

will submit a letter certifying distribution of the EAP and posting *NOTICE*(s) to the DEP, Division of Dam Safety.

**ATTACHMENTS:**

<b>ATTACHMENT A</b>	INUNDATION MAPS
<b>ATTACHMENT B</b>	TRAFFIC CONTROL POINTS
<b>ATTACHMENT C</b>	LOCATION MAP
<b>ATTACHMENT D</b>	TELEPHONE ROSTER
<b>ATTACHMENT E</b>	MEDIA ANNOUNCEMENT
<b>ATTACHMENT F</b>	NOTICE
<b>ATTACHMENT G</b>	CCWRA HIBERNIA DAM EMERGENCY THREAT LEVEL / ACTION SHEET
<b>ATTACHMENT H</b>	WARNING AND EARLY EVACUATION – THREE (3) NEARBY RESIDENCES

**ATTACHMENT A**  
**INUNDATION MAPS**



# HIBERNIA DAM EMERGENCY ACTION PLAN

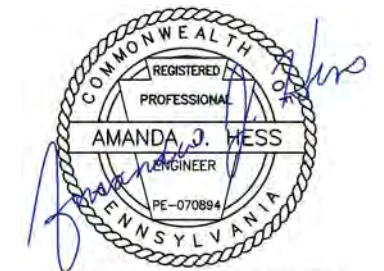
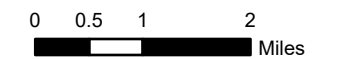
Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County



601 Westtown Road, Suite 260, P.O. Box 2747  
West Chester, PA 19380-0990 Ph: (610) 344-5400

### Legend

- Page Index
- Hibernia Dam Inundation Zone
- Municipal Boundary



207 Senate Avenue, Camp Hill, PA 17011

### Disclaimers

The inundation limits shown are estimated for the downstream flood progression. United States Geological Survey digital elevation model, which has a vertical accuracy of plus or minus one half of the contour interval, was used to identify and locate these inundation limits.

The failure of a dam is a complex hydraulic occurrence which can result in unexpectedly high depths of flow. Debris accumulations at stream constrictions or encroachments, and bridge openings can result in localized increases in the water surface above elevations computed from the failure of a dam. These effects were not considered when computing the flooded area shown on this map.

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No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except as expressly permitted by the County of Chester, Pennsylvania.

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

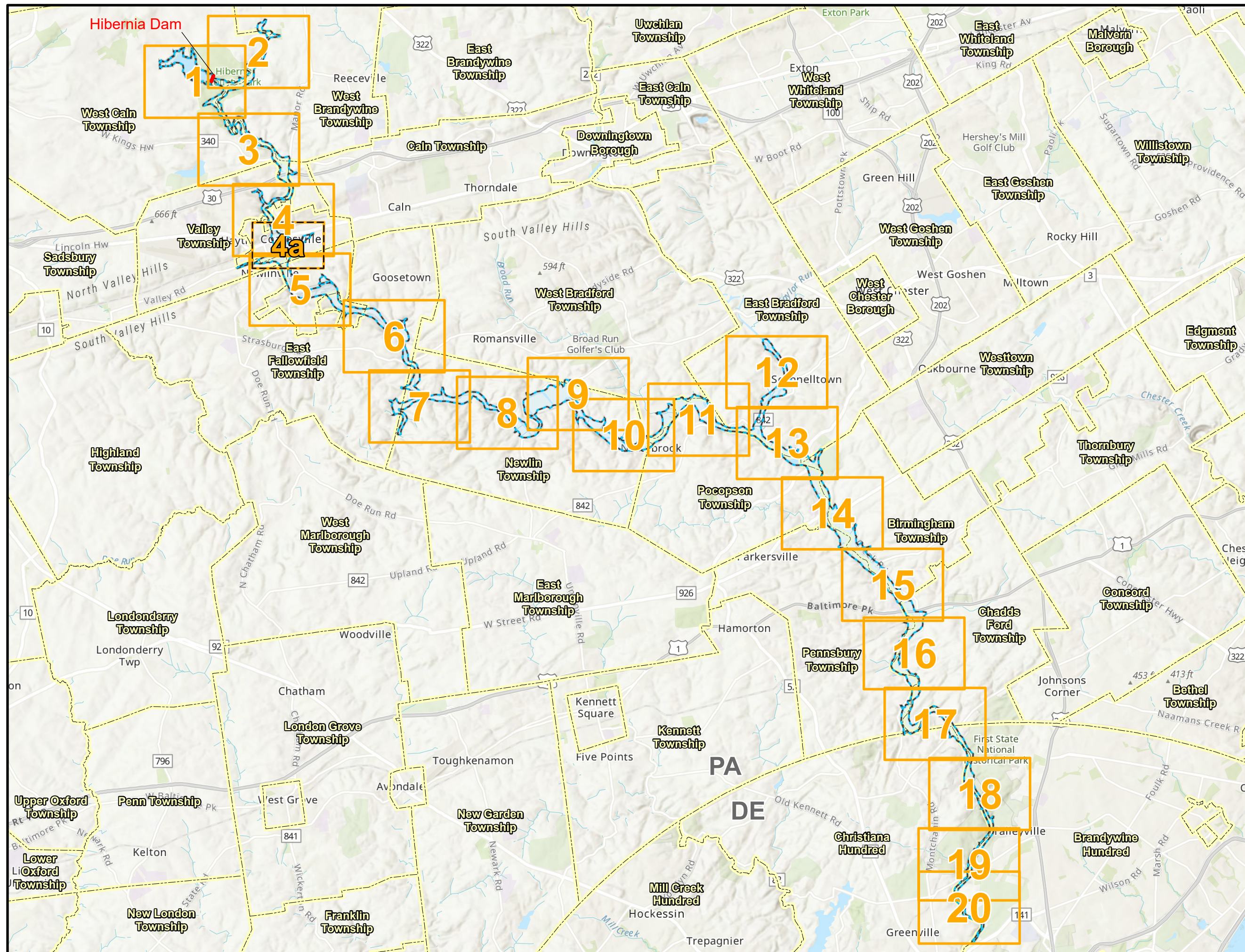
Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2015)

Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January  
2021

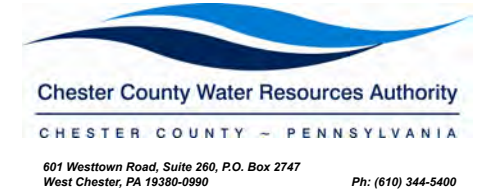


Page Index



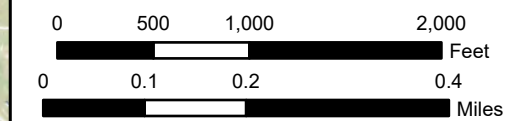
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

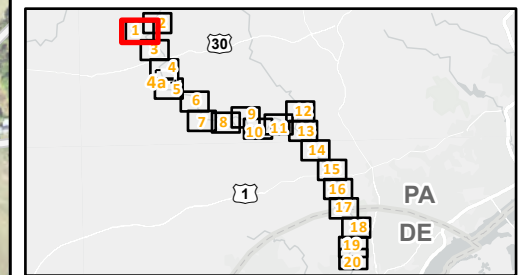


### Legend

- Traffic Control Point
- Evacuation Site
- Hibernia Dam Inundation Zone
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

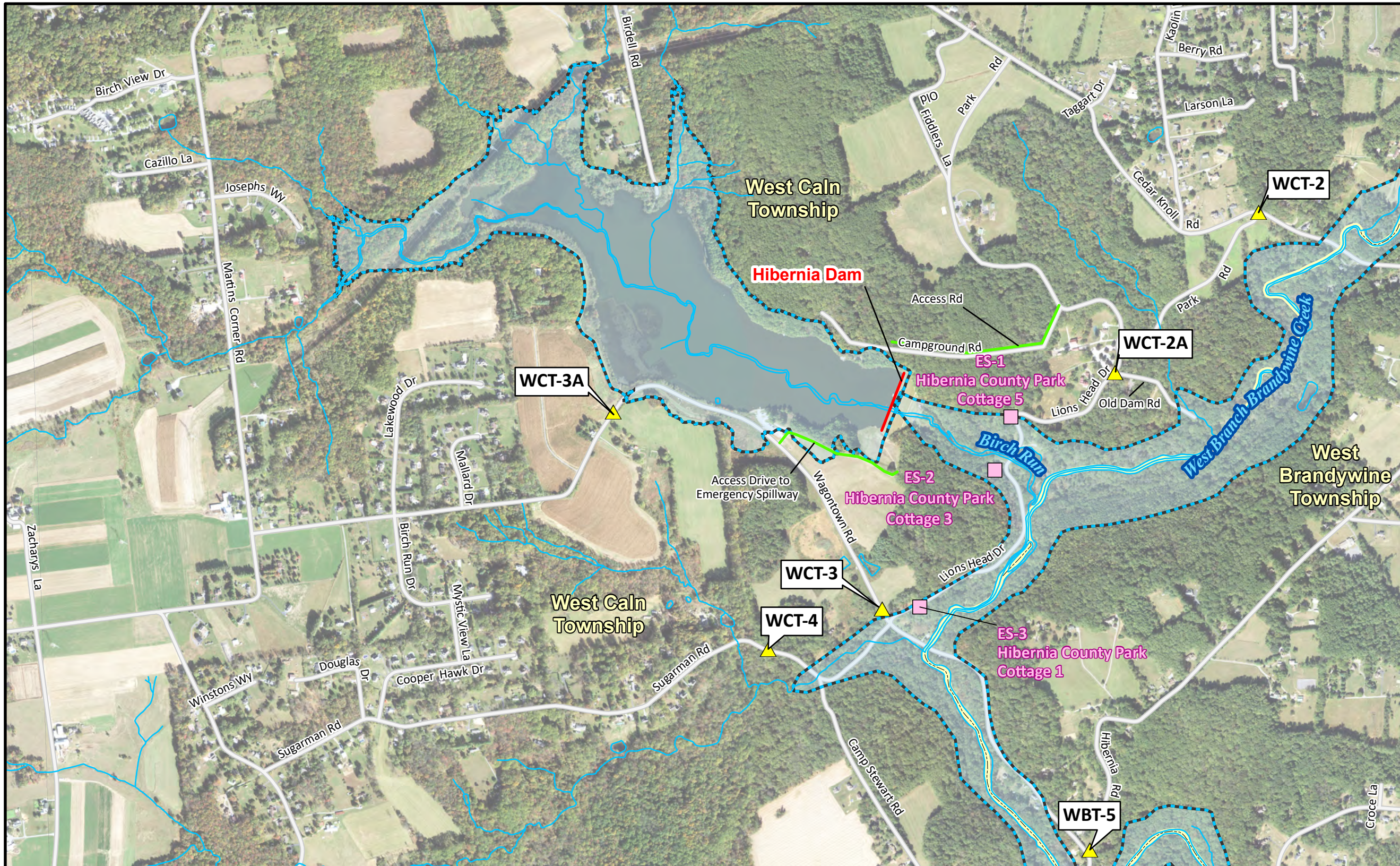
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### Traffic Control Points (TCP #)

ID#	Location	Municipality
WCT-3A	Wagontown Road 2,000 feet east of Mallard Dr southeast of Chambers Lake	West Caln Twp
WCT-2	Cedar Knoll Road at Park Road	West Caln Twp
WCT-2A	Lions Head Dr at Old Dam Rd	West Caln Twp
WCT-3	Wagontown Road 100 feet west of Lions Head Drive	West Caln Twp
WCT-4	Sugarman Road 550 feet west of Camp Stewart Road	West Caln Twp
WBT-5	Hibernia Road at Wagontown Road	West Brandywine Twp

### Sources

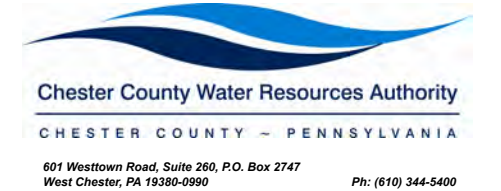
- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
- Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



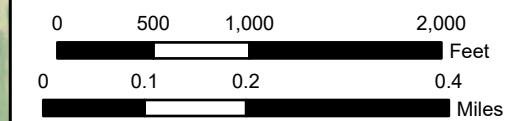
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

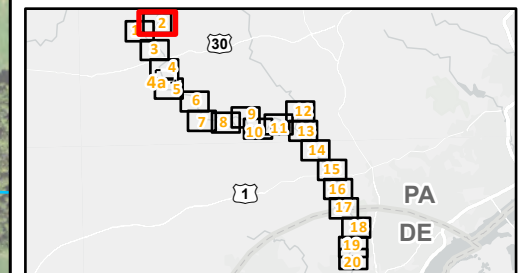


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

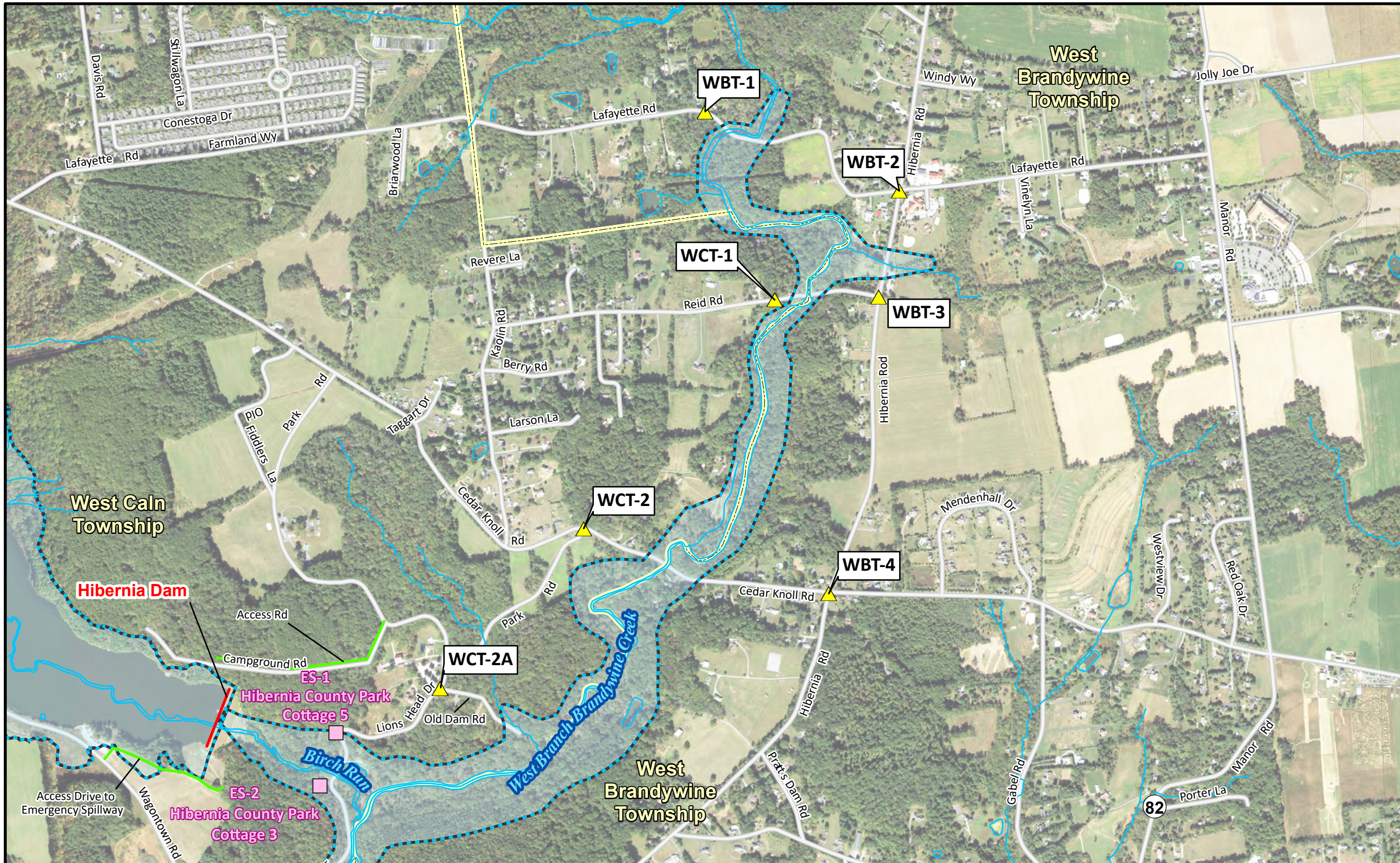
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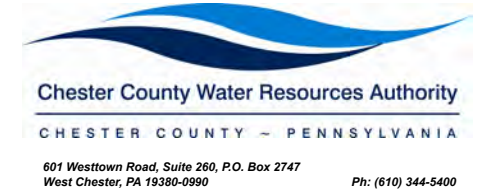
ID#	Location	Municipality
WBT-1	Lafayette Road 300 feet west of West Branch Brandywine Creek	West Brandywine Twp
WBT-2	Lafayette Road at Hibernia Road	West Brandywine Twp
WCT-1	Reid Road 300 feet west of West Branch Brandywine Creek	West Caln Twp
WBT-3	Reid Road at Hibernia Road	West Brandywine Twp
WCT-2	Cedar Knoll Road at Park Road	West Caln Twp
WBT-4	Cedar Knoll Road at Hibernia Road	West Brandywine Twp
WCT-2A	Lions Head Dr at Old Dam Rd	West Caln Twp

**Sources**  
Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)  
Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)  
Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

**January 2021**

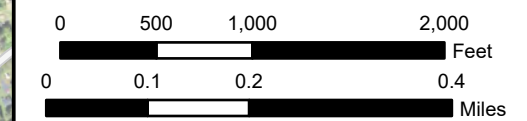
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

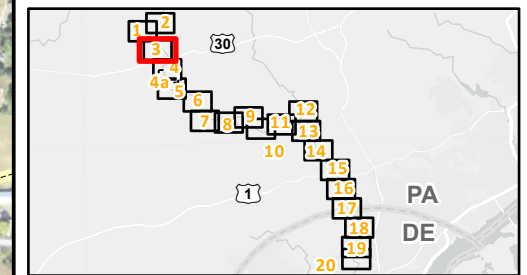


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

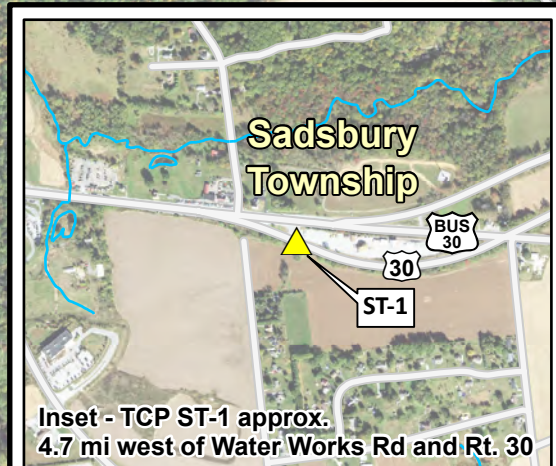
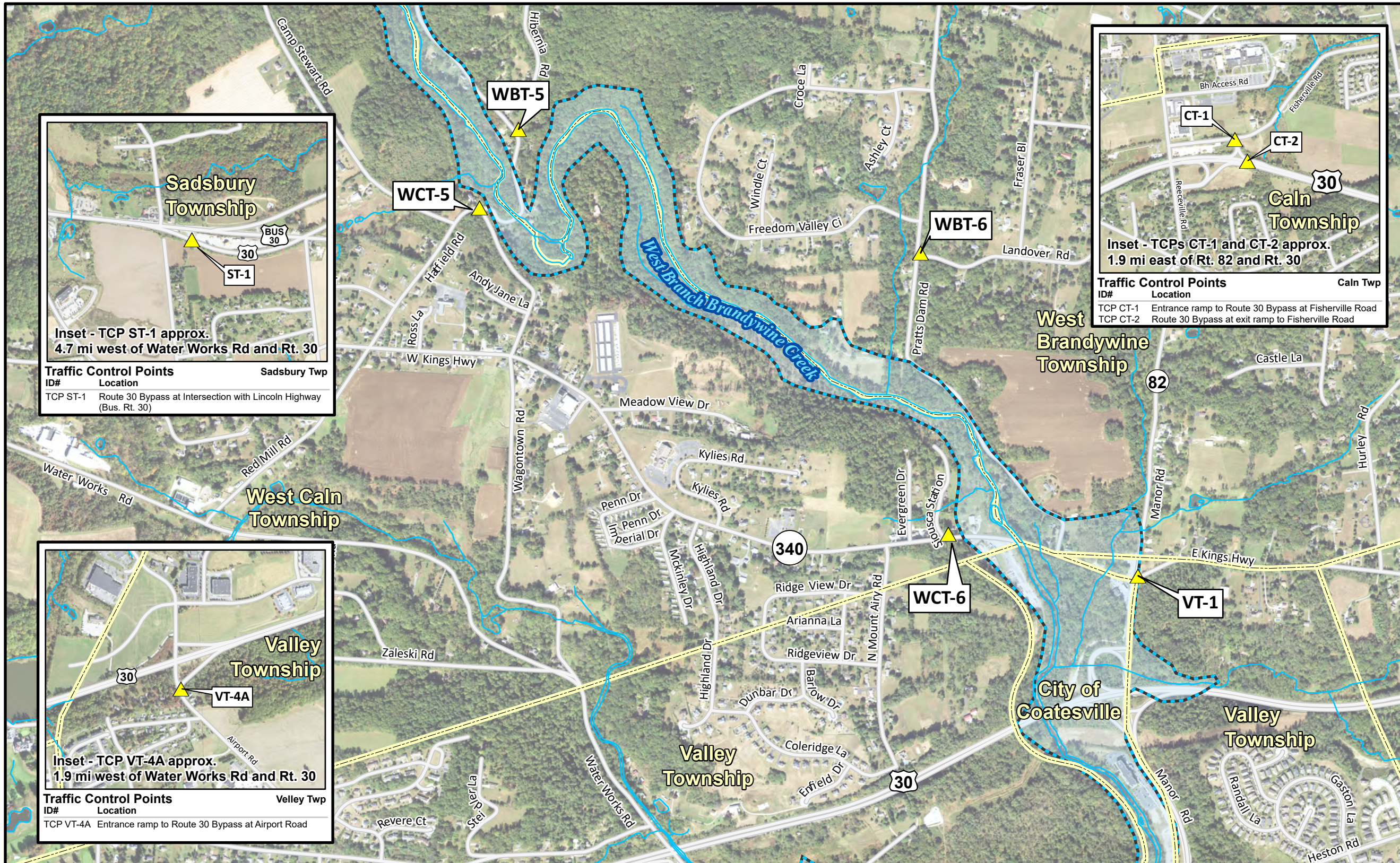
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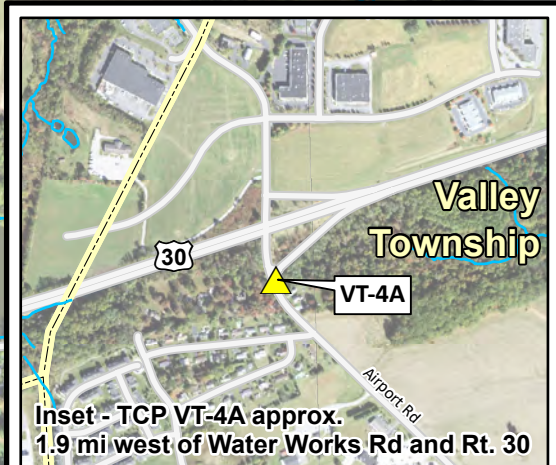
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Traffic Control Points		Sadsbury Twp
ID#	Location	
TCP ST-1	Route 30 Bypass at Intersection with Lincoln Highway (Bus. Rt. 30)	



Traffic Control Points		Valley Twp
ID#	Location	
TCP VT-4A	Entrance ramp to Route 30 Bypass at Airport Road	

Traffic Control Points (TCP #)

ID#	Location	Municipality
WBT-5	Hibernia Road at Wagontown Road	West Brandywine Twp
WCT-5	Hatfield Road at Wagontown Road	West Caln Twp
WBT-6	Pratts Dam Road at Landover Road	West Brandywine Twp
WCT-6	West Kings Highway (Rt. 340) at Siousca Station	West Caln Twp
VT-1	East Kings Highway (Rt. 340) at Manor Road (Rt. 82)	Valley Twp

**Sources**  
Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)  
Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)  
Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021  
Gannett Fleming

See Inset Maps for TCPs ST-1, VT-4a, CC-1, and CC-2 at interchanges on the Route 30 Bypass.

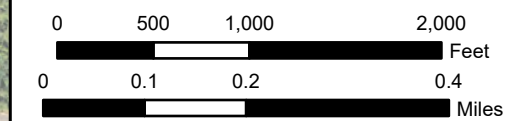
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Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

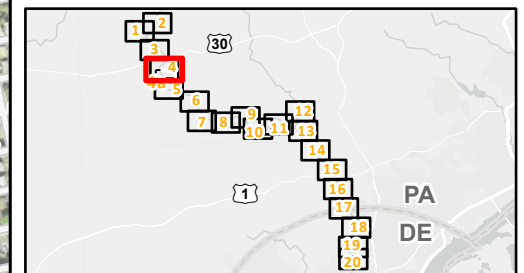


### Legend

- Traffic Control Point
- Evacuation Site
- Stream
- Hibernia Dam Inundation Zone
- Municipal Boundary



### Location Map



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**Inset - See Page 4a**

**Traffic Control Points (TCP #)**

ID#	Location	Municipality
VT-4	Wagontown Road at Irish Lane	Valley Twp
VT-6	Butterworth Road at Manor Road (Rt. 82)	Valley Twp
CC-1	Manor Rd at Wagontown Rd	Coatesville City
VT-5	Glencrest Rd and Brick St	Valley Twp

### Sources

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Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)

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January 2021



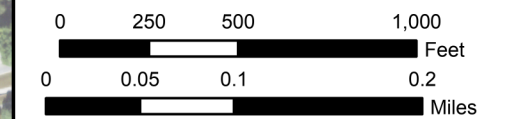
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

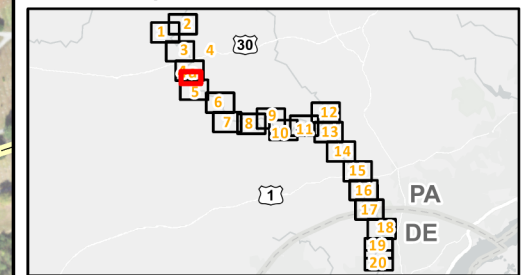
**Chester County Water Resources Authority**  
CHESTER COUNTY - PENNSYLVANIA  
601 Westtown Road, Suite 260, P.O. Box 2747  
West Chester, PA 19380-0990 Ph: (610) 344-5400

### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

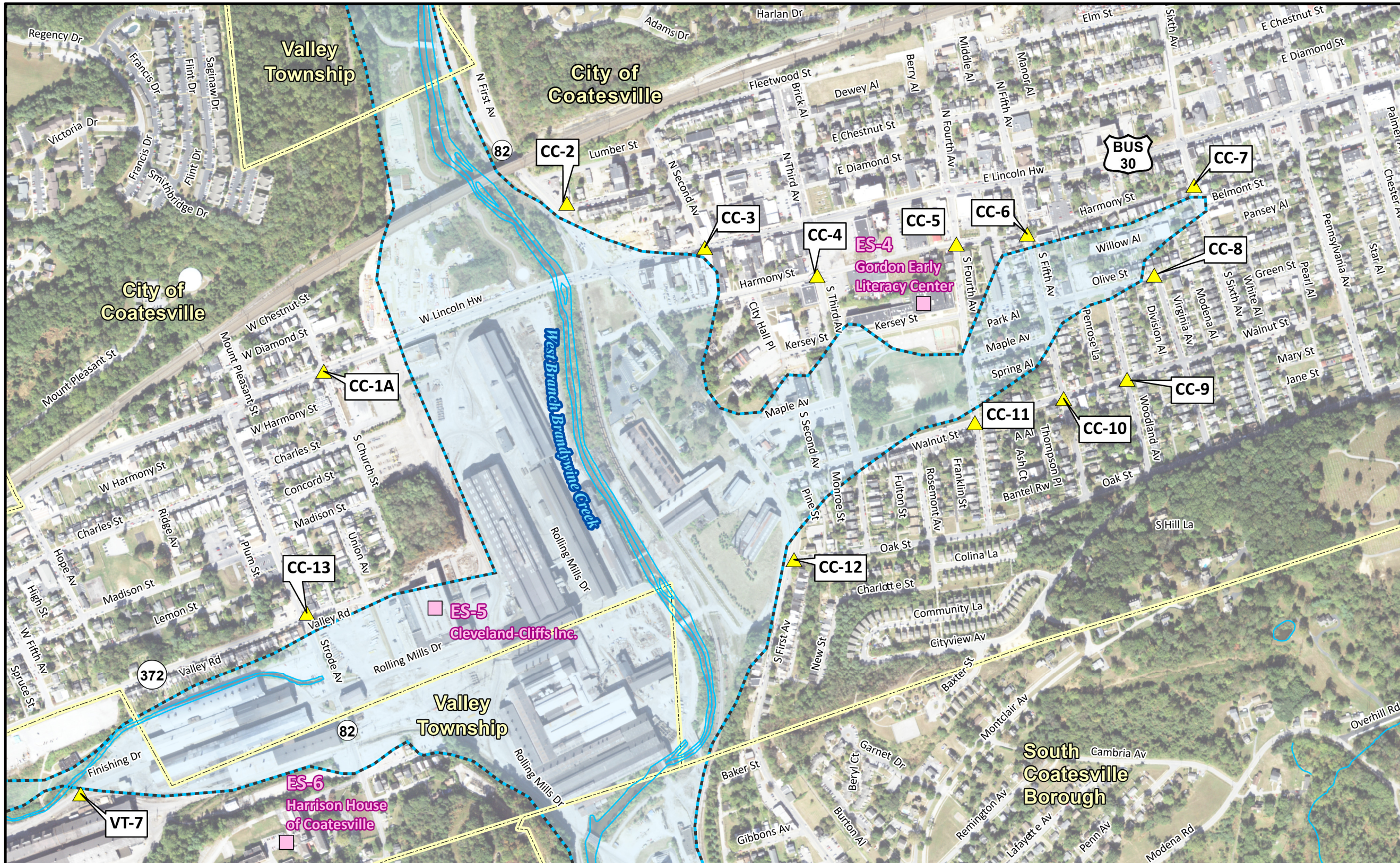
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### Traffic Control Points (TCP #)

ID#	Location	Municipality	ID#	Location	Municipality
CC-1A	West Lincoln Highway (Business Rt. 30) at South Church Street	Coatesville City	CC-8	Olive Street at Virginia Avenue	Coatesville City
CC-2	North First Avenue (Rt. 82) at E. Chestnut Street	Coatesville City	CC-9	Walnut Street at Woodland Avenue	Coatesville City
CC-3	East Lincoln Highway (Business Rt. 30) at North Second Avenue	Coatesville City	CC-10	Walnut Street at South 5th Avenue	Coatesville City
CC-4	Harmony Street at South 3rd Avenue	Coatesville City	CC-11	Walnut Street at South 4th Avenue	Coatesville City
CC-5	Harmony Street at South 4th Avenue	Coatesville City	CC-12	South First Avenue at Oak Street	Coatesville City
CC-6	Harmony Street at South 5th Avenue	Coatesville City	CC-13	Valley Road (Rt. 372) at Strode Avenue	Coatesville City
CC-7	Harmony Street at South 6th Avenue	Coatesville City	VT-7	Finishing Drive 1,500 feet west of Strode Avenue	Valley Twp

### Sources

- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
- Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



Prepared by: cthomas on 3/23/2021 NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet C:\Users\ctomas\Documents\ArcGIS\Projects\Hibernia\_11x17\_14bda0\p20\Hibernia2020.aprx

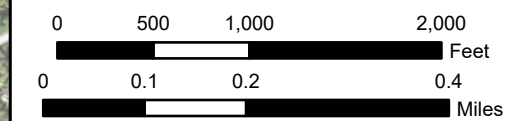
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

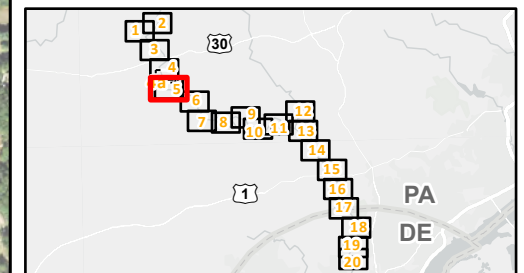


### Legend

- Traffic Control Point
- Evacuation Site
- Hibernia Dam Inundation Zone
- Municipal Boundary
- Stream



### Location Map



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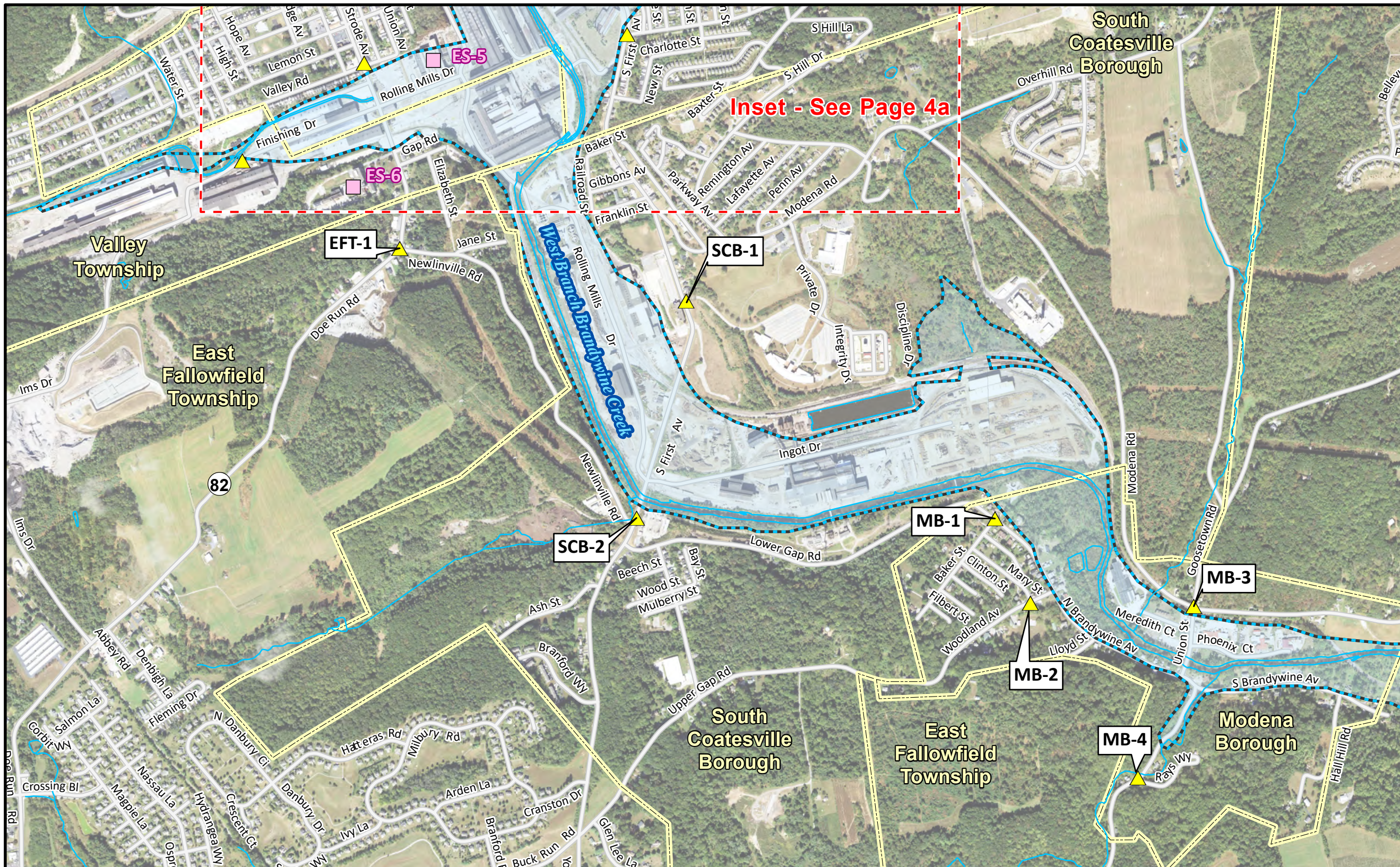
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**Inset - See Page 4a**

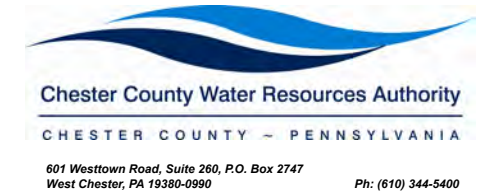
Traffic Control Points (TCP #)	ID#	Location	Municipality
	EFT-1	Doe Run Road (Rt. 82) at Newlinville Road	East Fallowfield Twp
	SCB-1	South First Avenue 1,000 feet south of Modena Road	South Coatesville Borough
	SCB-2	Newlinville Road at South First Avenue	South Coatesville Borough
	MB-1	Baker Street at North Brandywine Avenue	Modena Borough
	MB-2	Woodland Avenue at Mary Street	Modena Borough
	MB-3	Union Street at Modena Road	Modena Borough
	MB-4	Hephzibah Hill Road at Rays Way	Modena Borough

**Sources**  
Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)  
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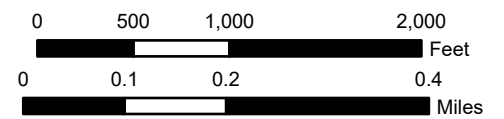
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Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

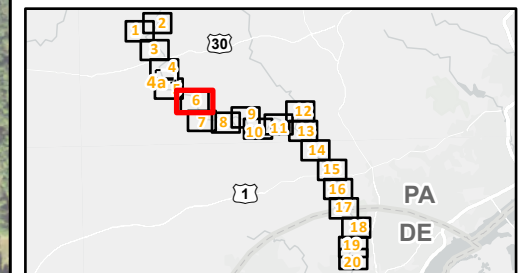


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

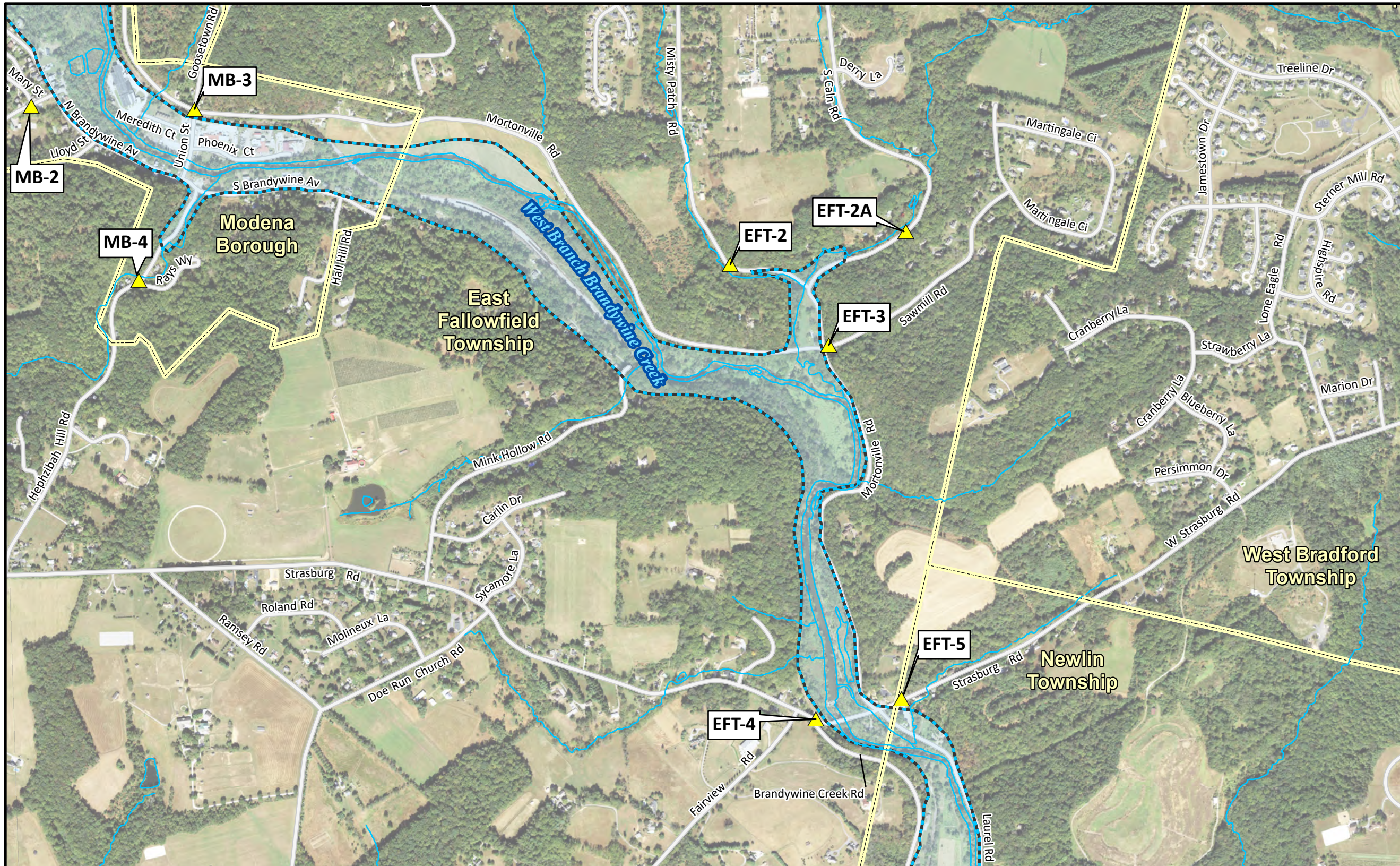
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Traffic Control Points (TCP #)

ID#	Location	Municipality	ID#	Location	Municipality
MB-2	Woodland Avenue at Mary Street	Modena Borough	EFT-2A	S Caln Rd 1,100 feet east of Misty Patch Road	East Fallowfield Twp
MB-3	Union Street at Modena Road	Modena Borough	EFT-3	Mortonville Road at Sawmill Road	East Fallowfield Twp
MB-4	Hephzibah Hill Road at Rays Way	Modena Borough	EFT-4	Strasburg Road at Brandywine Creek Road	East Fallowfield Twp
EFT-2	Misty Patch Road 850 feet west of S. Caln Road	East Fallowfield Twp	EFT-5	Strasburg Road 100 feet east of Laurel Road	East Fallowfield Twp

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)

Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

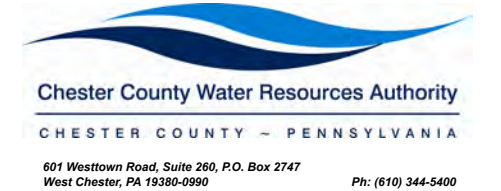
January 2021





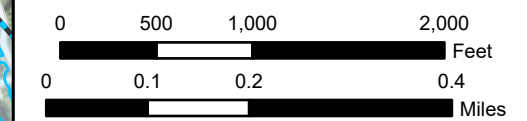
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Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

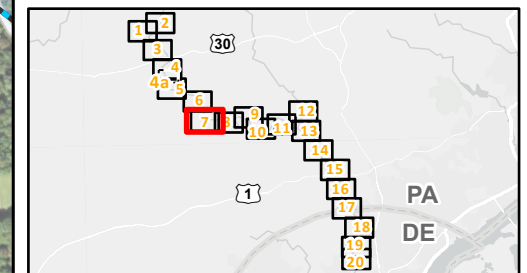


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

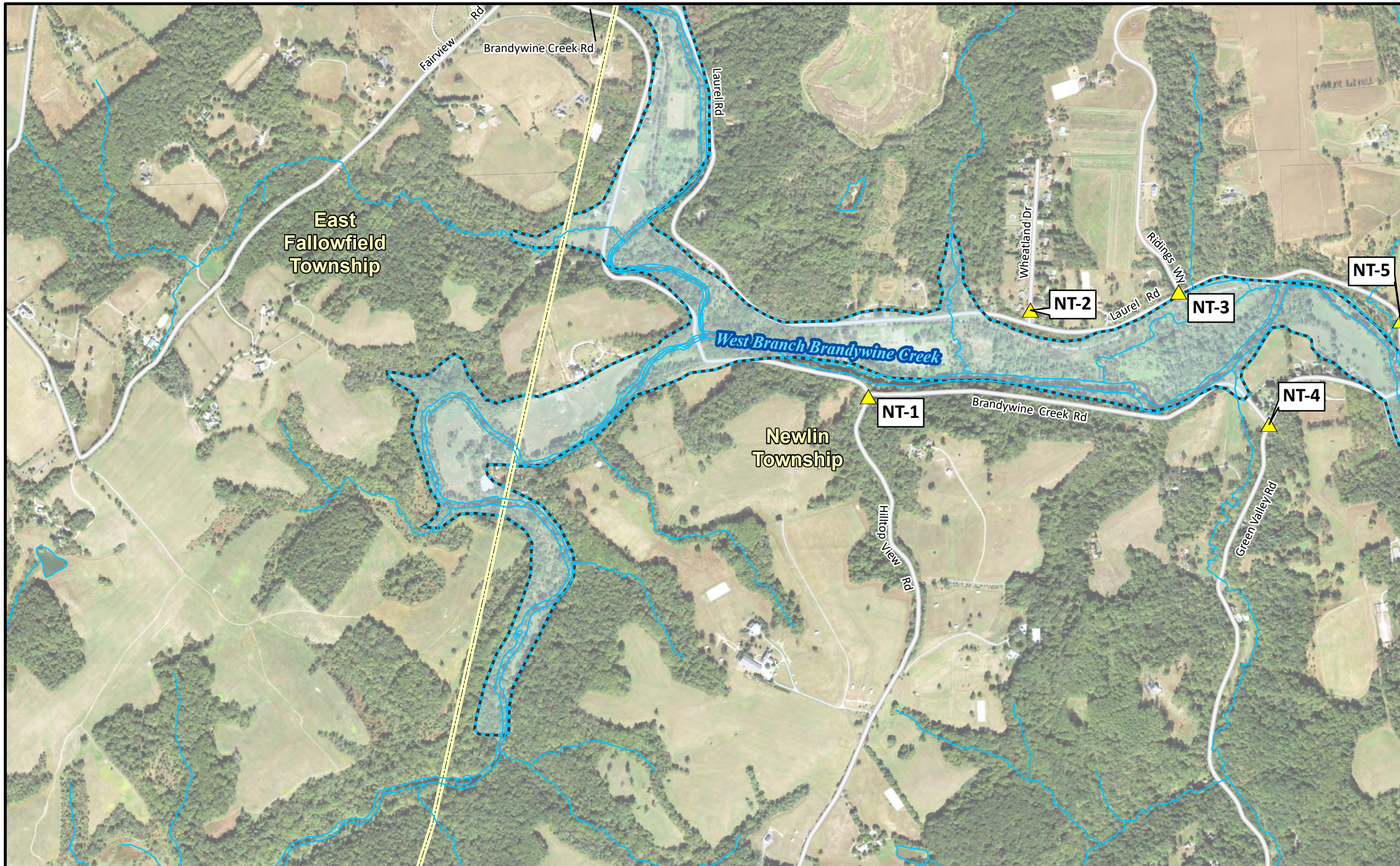
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Traffic Control Points (TCP #)

ID#	Location	Municipality
NT-1	Hilltop View Road at Brandywine Creek Road	Newlin Twp
NT-2	Wheatland Drive at Laurel Road	Newlin Twp
NT-3	Laurel Road at Ridings Way	Newlin Twp
NT-4	Green Valley Road at Brandywine Creek Road	Newlin Twp
NT-5	Youngs Road at Laurel Road	Newlin Twp

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

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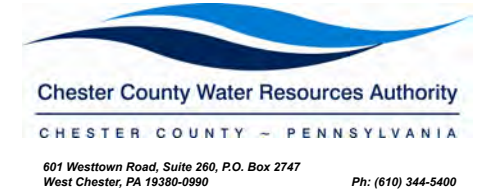
Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



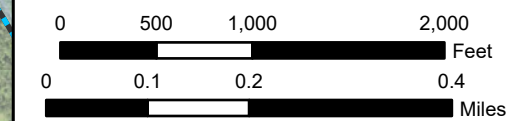
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Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

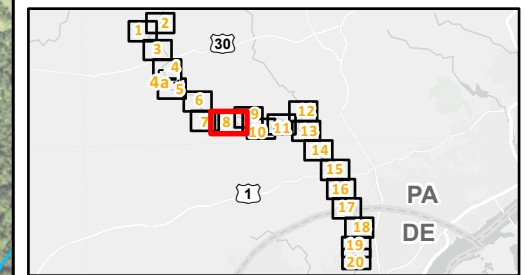


### Legend

- Traffic Control Point
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- Municipal Boundary
- Stream



### Location Map



### Disclaimers

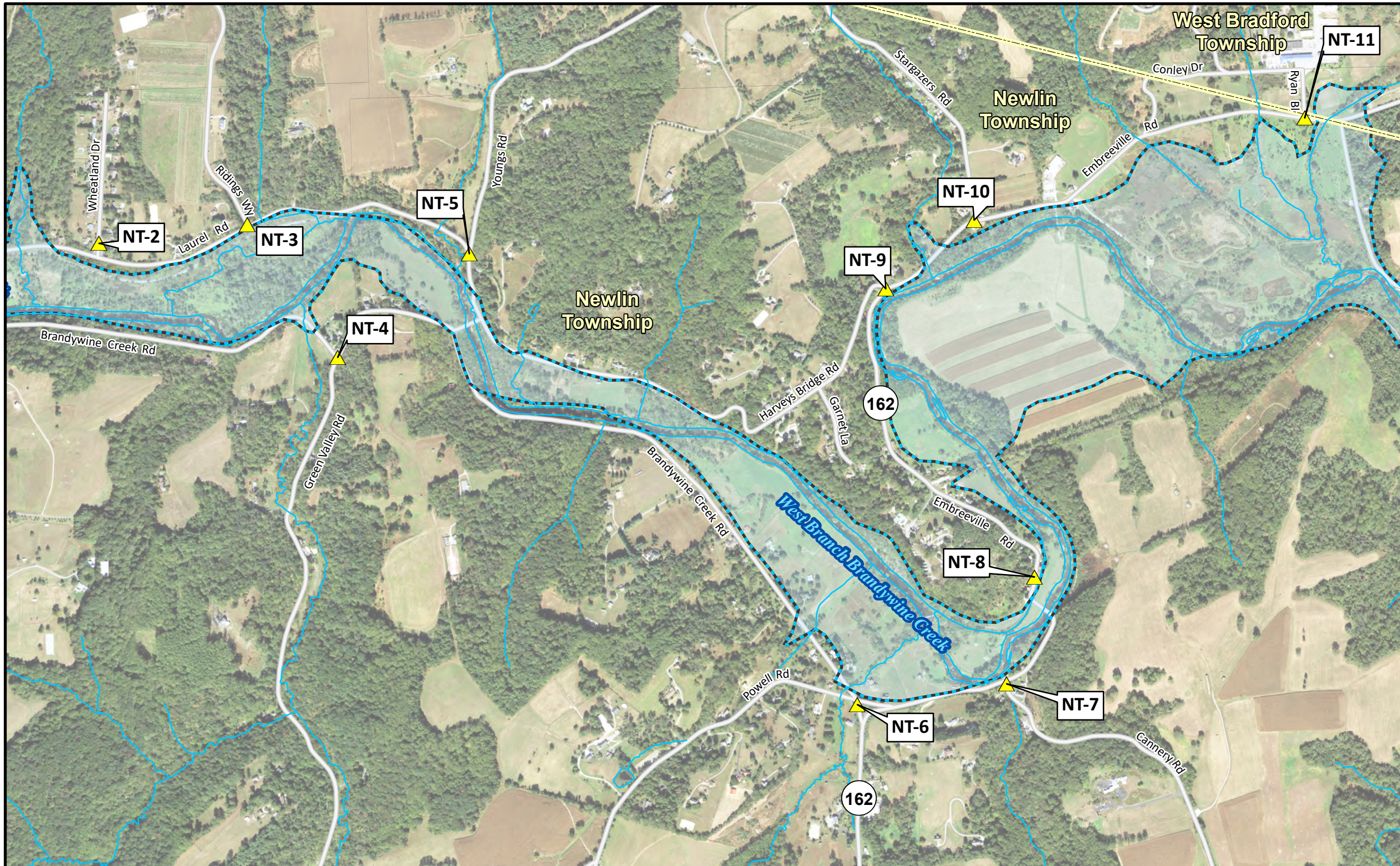
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Traffic Control Points (TCP #)

ID#	Location	Municipality	ID#	Location	Municipality
NT-2	Wheatland Drive at Laurel Road	Newlin Twp	NT-7	Cannery Road at Embreeville Road (Rt. 162)	Newlin Twp
NT-3	Laurel Road at Ridings Way	Newlin Twp	NT-8	Embreeville Road (Rt. 162) 400 feet north of Embreeville Bridge	Newlin Twp
NT-4	Green Valley Road at Brandywine Creek Road	Newlin Twp	NT-9	Embreeville Road (Rt. 162) at Harveys Bridge Road	Newlin Twp
NT-5	Youngs Road at Laurel Road	Newlin Twp	NT-10	Stargazers Road at Embreeville Road (Rt. 162)	Newlin Twp
NT-6	Powell Road at Brandywine Creek Road	Newlin Twp	NT-11	Ryan Blvd at Embreeville Road	Newlin Twp

### Sources

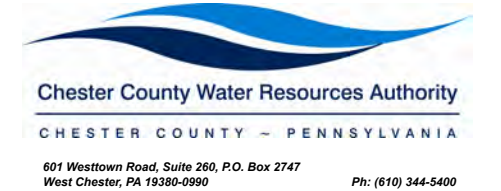
- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
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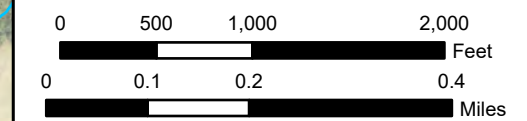
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Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

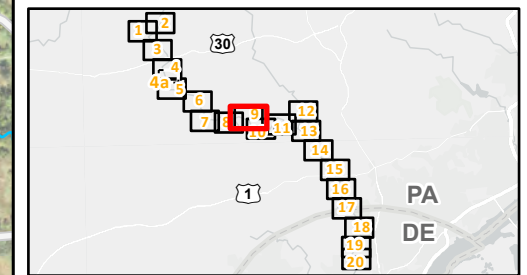


### Legend

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- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

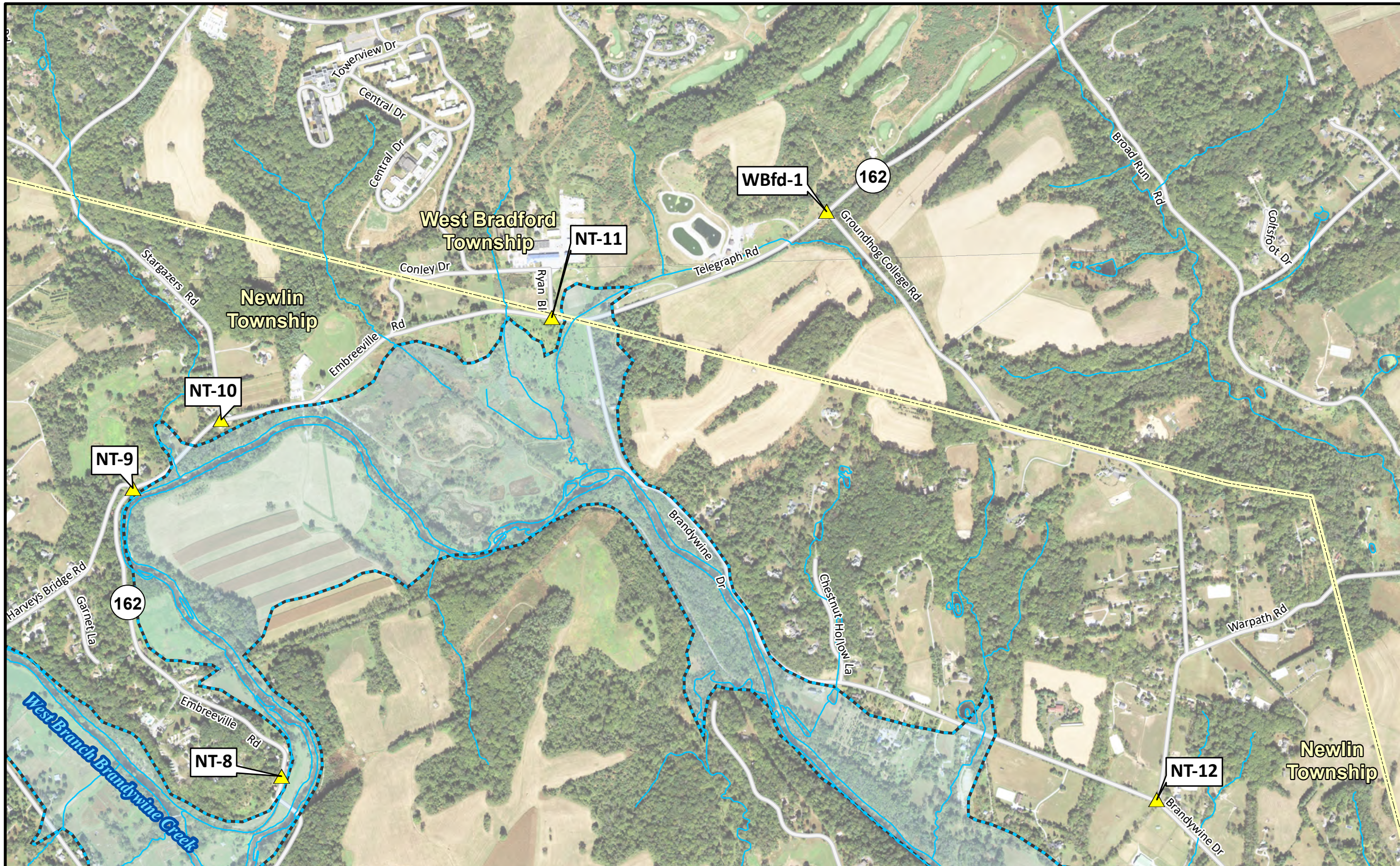
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Traffic Control Points (TCP #)

ID#	Location	Municipality
NT-8	Embreeville Road (Rt. 162) 400 feet north of Embreeville Bridge	Newlin Twp
NT-9	Embreeville Road (Rt. 162) at Harveys Bridge Road	Newlin Twp
NT-10	Stargazers Road at Embreeville Road (Rt. 162)	Newlin Twp
NT-11	Ryan Blvd at Embreeville Road	Newlin Twp
WBfd-1	Telegraph Road (Rt. 162) at Groundhog College Road	West Bradford Twp
NT-12	Warpath Road at Brandywine Drive	Newlin Twp

### Sources

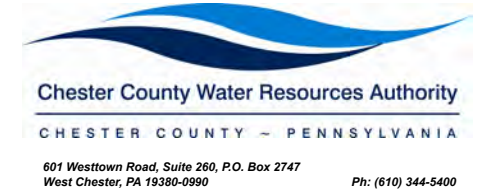
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January 2021



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Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

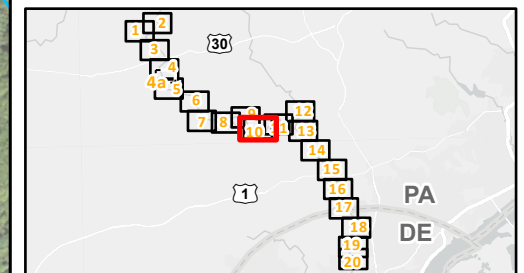


### Legend

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- Stream



### Location Map



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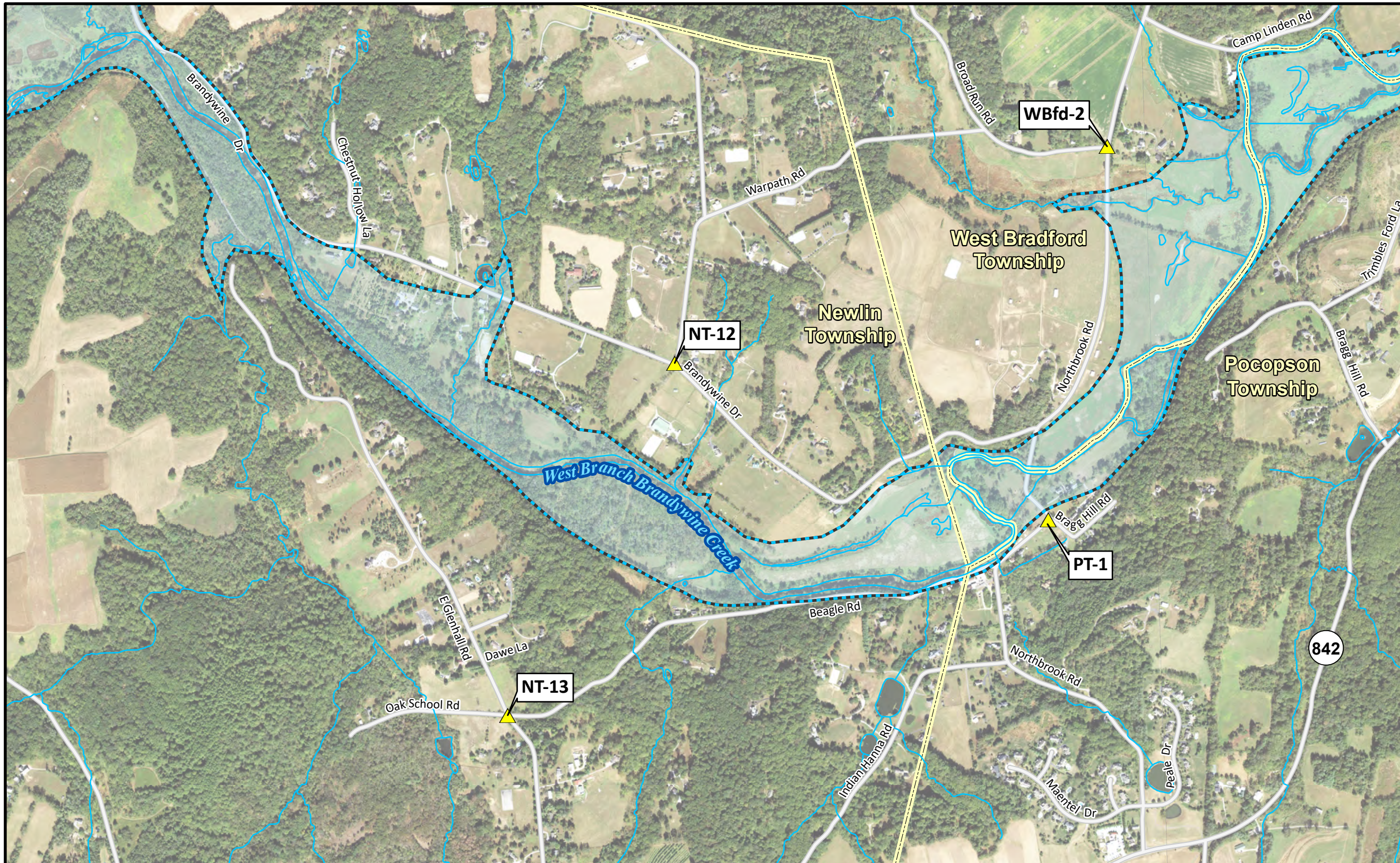
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Traffic Control Points (TCP #)

ID#	Location	Municipality
NT-12	Warpath Road at Brandywine Drive	Newlin Twp
NT-13	Oak School Road at East Glenhall Road	Newlin Twp
PT-1	Northbrook Road at Bragg Hill Road	Pocopson Twp
WBfd-2	Broad Run Road at Northbrook Road	West Bradford Twp

**Sources**  
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January 2021  
Gannett Fleming

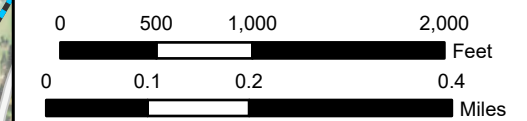
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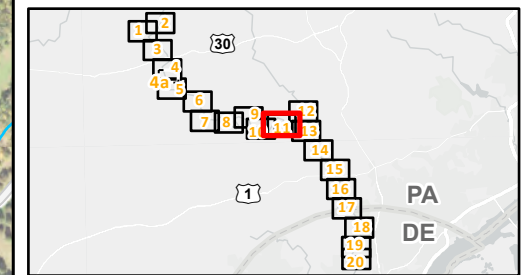


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### Location Map



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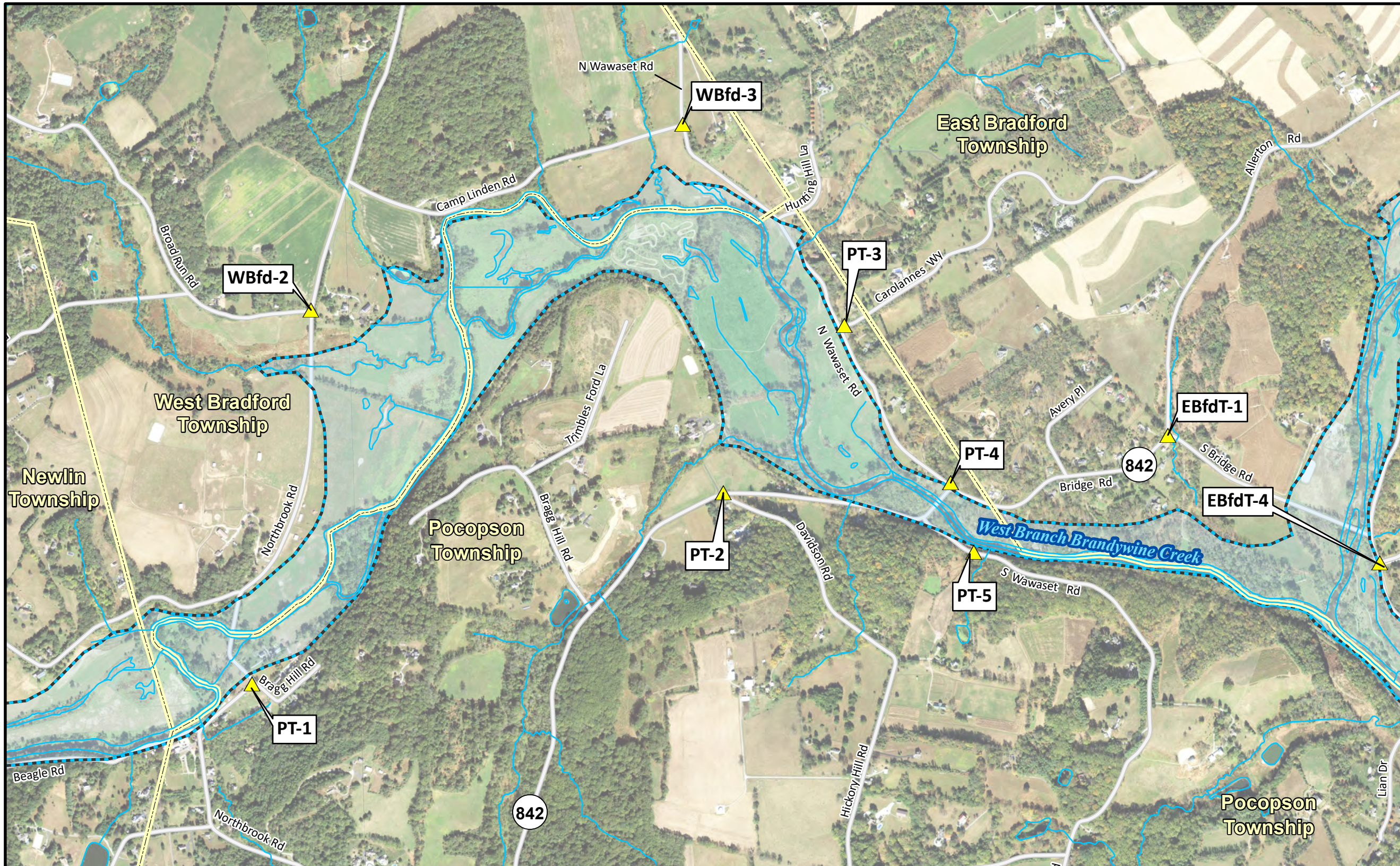
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Traffic Control Points (TCP #)

ID#	Location	Municipality	ID#	Location	Municipality
PT-1	Northbrook Road at Bragg Hill Road	Pocopson Twp	PT-4	Bridge Road (Rt. 842) at North Wawaset Road	Pocopson Twp
WBfd-2	Broad Run Road at Northbrook Road	West Bradford Twp	PT-5	South Wawaset Road 800 feet south of Unionville Wawaset Road	Pocopson Twp
WBfd-3	Camp Linden Road at North Wawaset Road	West Bradford Twp	EBfdT-1	Allerton Road at S. Bridge Road	East Bradford Twp
PT-2	Unionville Wawaset Road (Rt. 842) at Davidson Road	Pocopson Twp	EBfdT-4	Withers Way at S. Creek Road	East Bradford Twp
PT-3	Carolannes Way at North Wawaset Road	Pocopson Twp			

**Sources**  
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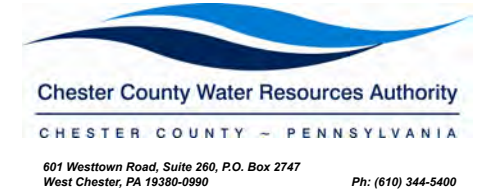
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**Gannett Fleming**

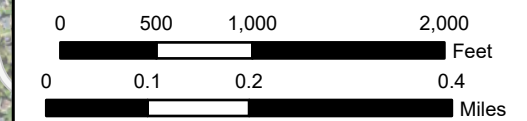
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SDF with Breach  
West Cain Township, Chester County

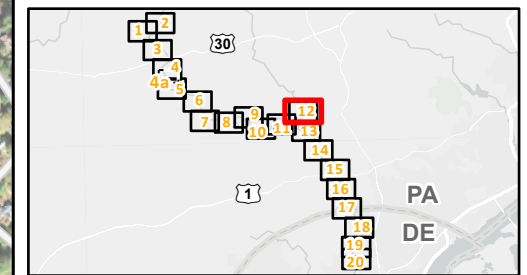


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

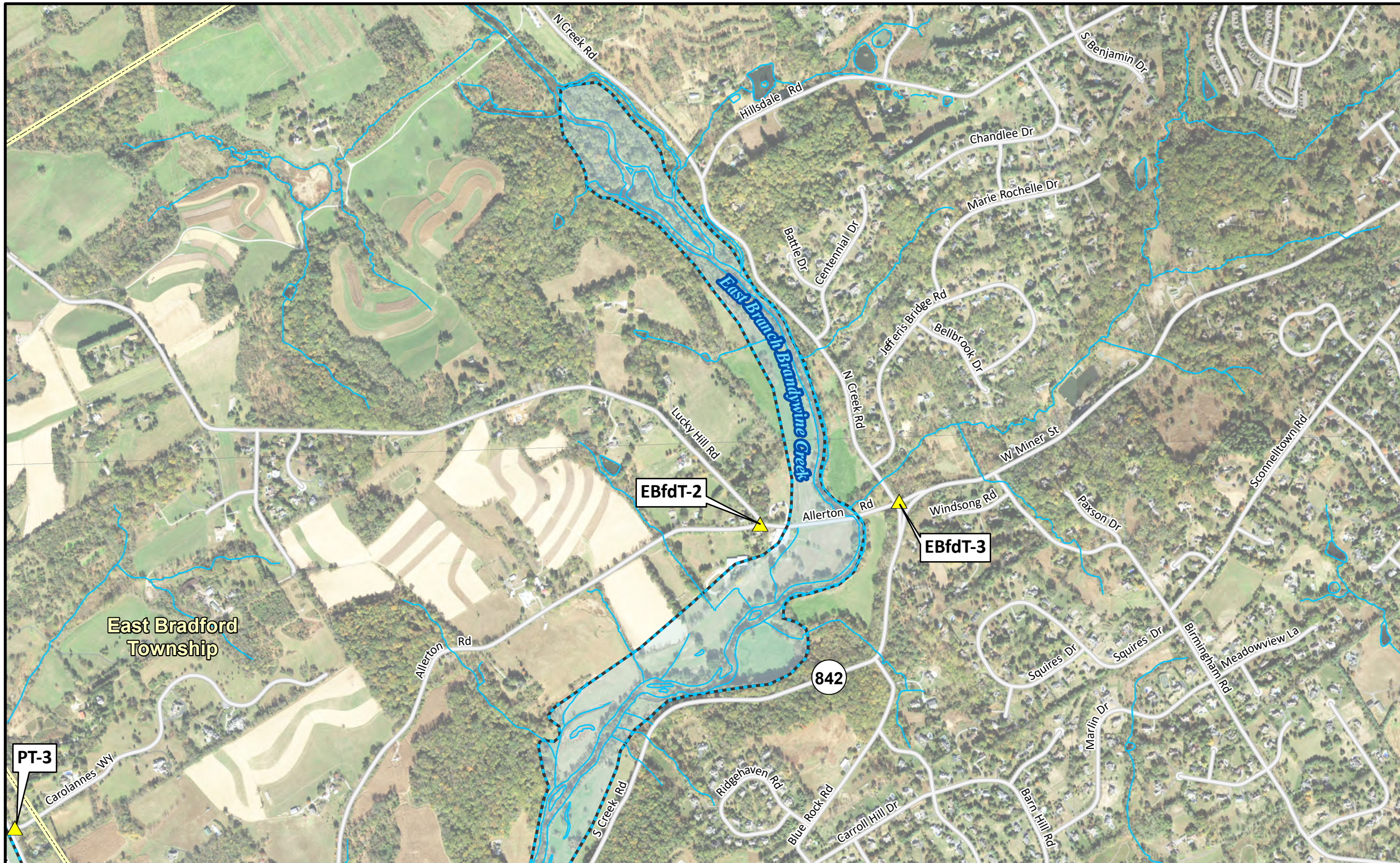
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Traffic Control Points (TCP #)

ID#	Location	Municipality
EBfdT-2	Allerton Road at Lucky Hill Road	East Bradford Twp
EBfdT-3	N. Creek Road at W. Miner Street (Rt. 842)	East Bradford Twp
PT-3	Carolannes Way at North Wawaset Road	Pocopson Twp

### Sources

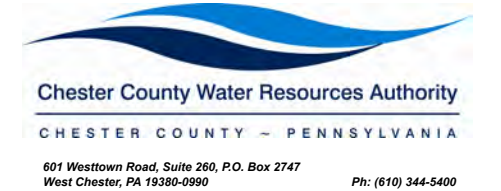
- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
- Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



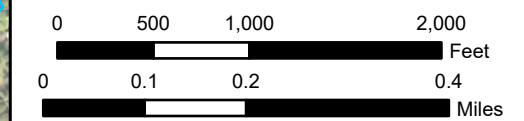
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

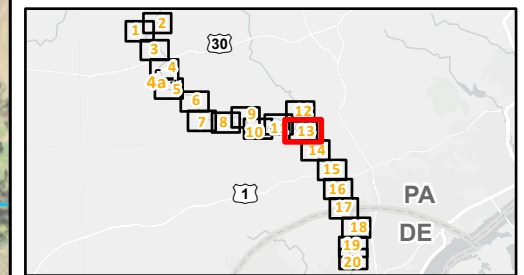


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

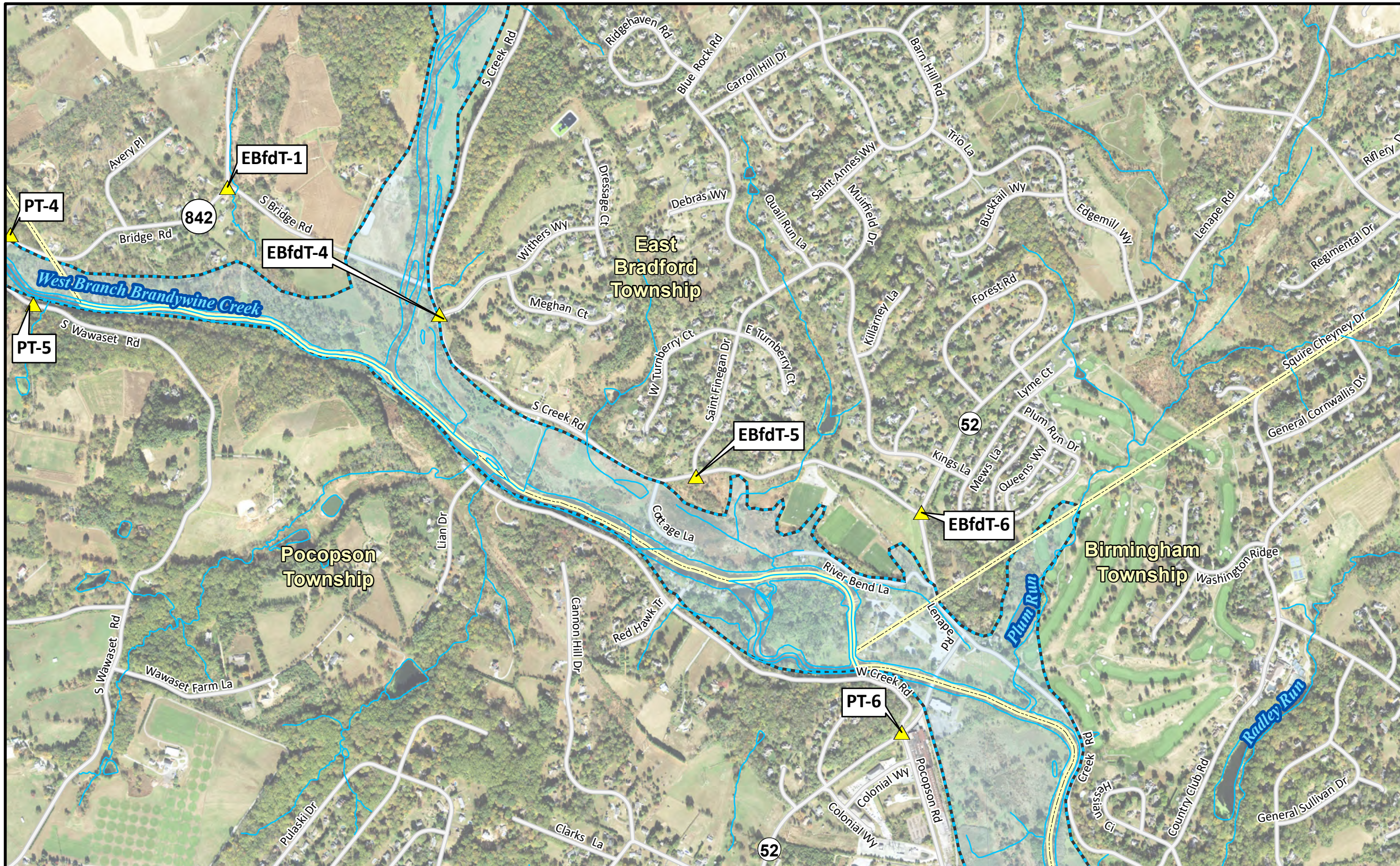
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Traffic Control Points (TCP #)

ID#	Location	Municipality
PT-4	Bridge Road (Rt. 842) at North Wawaset Road	Pocopson Twp
PT-5	South Wawaset Road 800 feet south of Unionville Wawaset Road	Pocopson Twp
EBfdT-1	Allerton Road at S. Bridge Road	East Bradford Twp
EBfdT-4	Withers Way at S. Creek Road	East Bradford Twp
EBfdT-5	Saint Finegan Drive at S. Creek Road	East Bradford Twp
EBfdT-6	Lenape Road (Route 52) at S. Creek Road	East Bradford Twp
PT-6	Lenape Road (Rt. 52) at Pocopson Road	Pocopson Twp

### Sources

- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
- Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



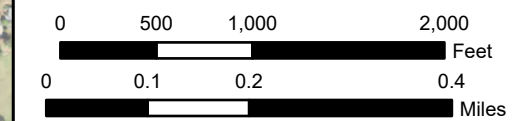
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Cain Township, Chester County

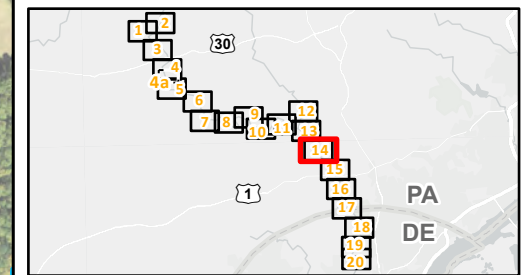


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

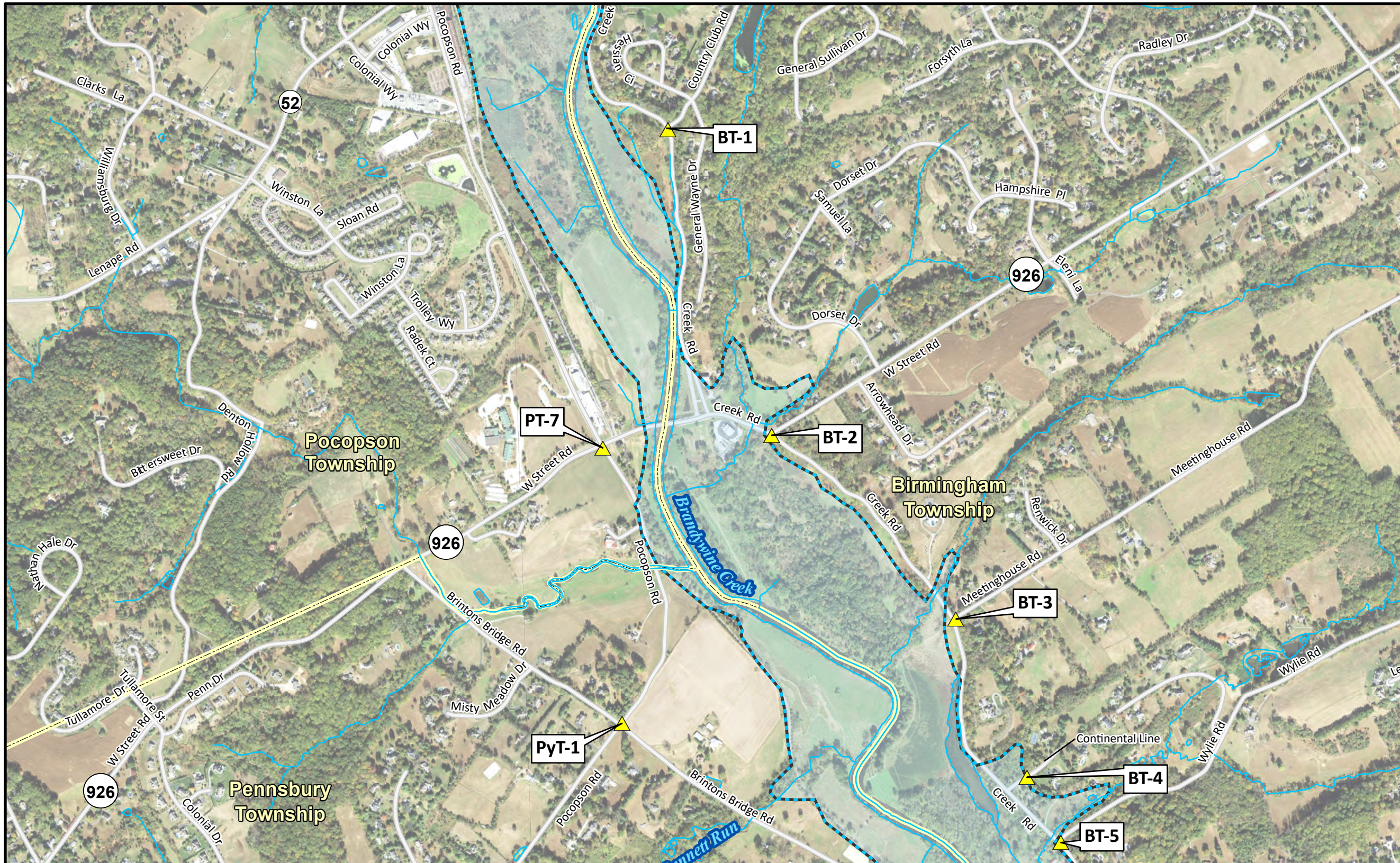
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Traffic Control Points (TCP #)

ID#	Location	Municipality
BT-1	Country Club Road at Creek Road	Birmingham Twp
PT-7	Street Road (Rt. 926) at Pocopson Road	Pocopson Twp
BT-2	West Street Road (Rt. 926) at Creek Road	Birmingham Twp
BT-3	Meetinghouse Road at Creek Road	Birmingham Twp
BT-4	Continental Line Lane 200 feet east of Creek Road	Birmingham Twp
BT-5	Wylie Road at Creek Road	Birmingham Twp
PyT-1	Pocopson Road at Brintons Bridge Road	Pennsbury Twp

### Sources

- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
- Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

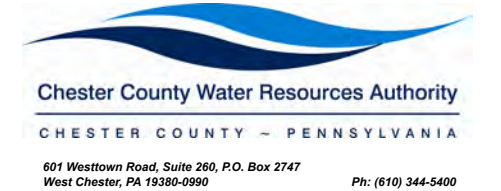
January 2021





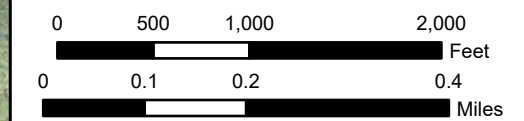
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

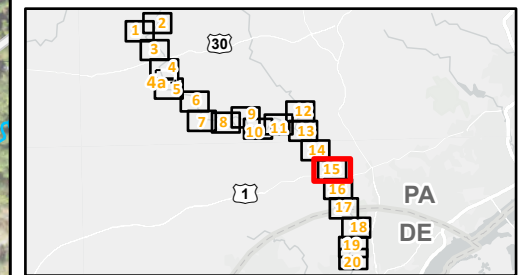


### Legend

- Traffic Control Point
- Evacuation Site
- Stream
- Hibernia Dam Inundation Zone
- Municipal Boundary



### Location Map



### Disclaimers

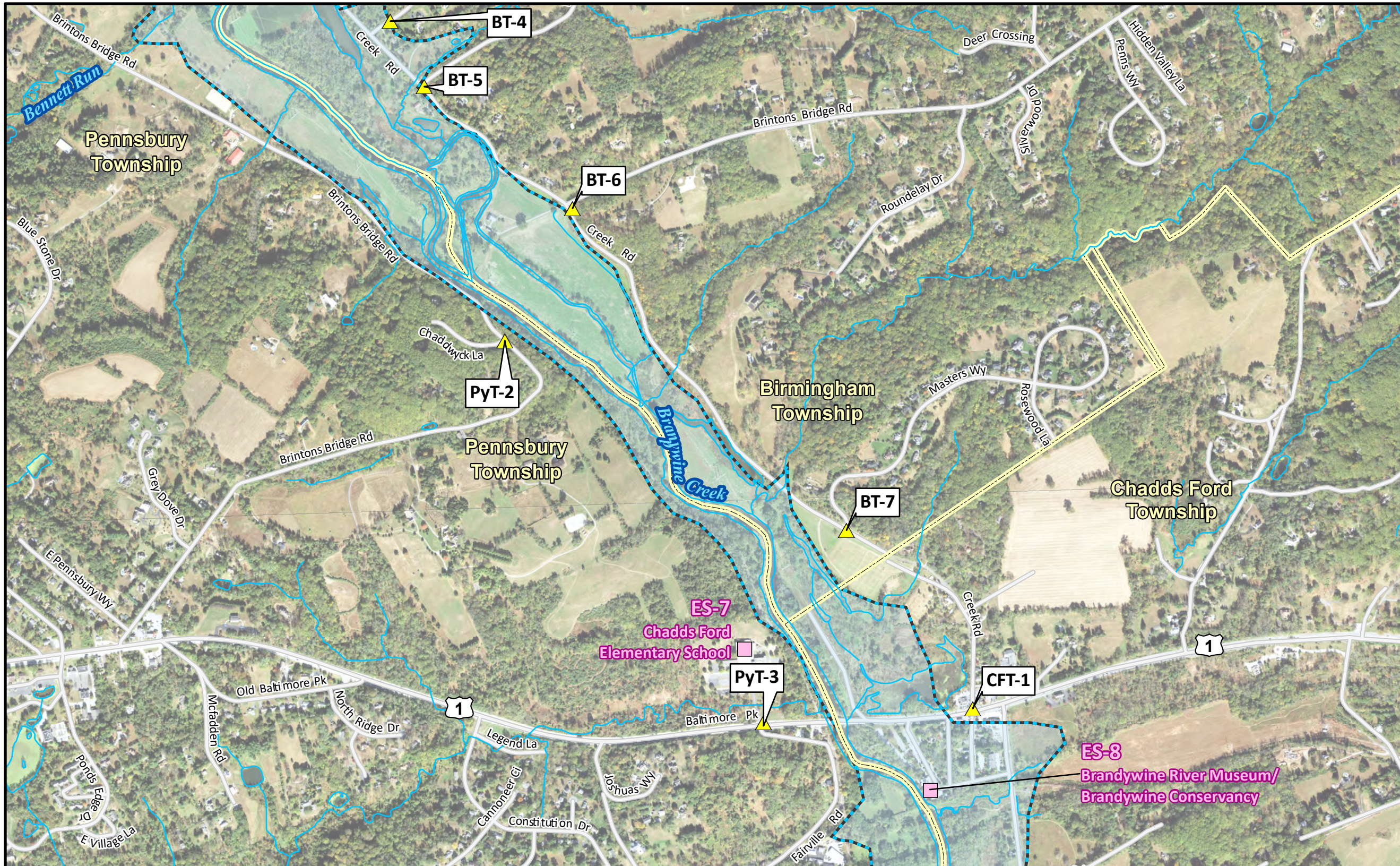
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### Traffic Control Points (TCP #)

ID#	Location	Municipality
BT-4	Continental Line Lane 200 feet east of Creek Road	Birmingham Twp
BT-5	Wylie Road at Creek Road	Birmingham Twp
BT-6	Brintons Bridge Road at Creek Road	Birmingham Twp
PyT-2	Brintons Bridge Road at Chaddwyck Lane	Pennsbury Twp
BT-7	Master Way at Creek Road	Birmingham Twp
PyT-3	Baltimore Pike (Rt 1) at Fairville Road	Pennsbury Twp
CFT-1	Baltimore Pike (Rt. 1) at Creek Road	Chadds Ford Twp

### Sources

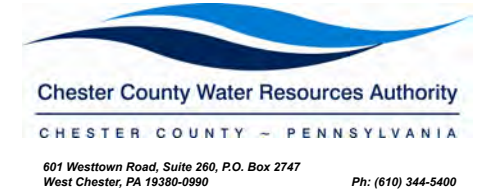
- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
- Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)
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January 2021



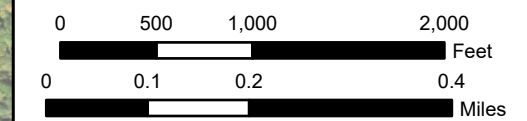
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

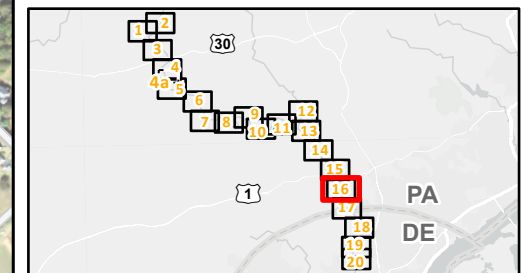


### Legend

- Traffic Control Point
- Evacuation Site
- Hibernia Dam Inundation Zone
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

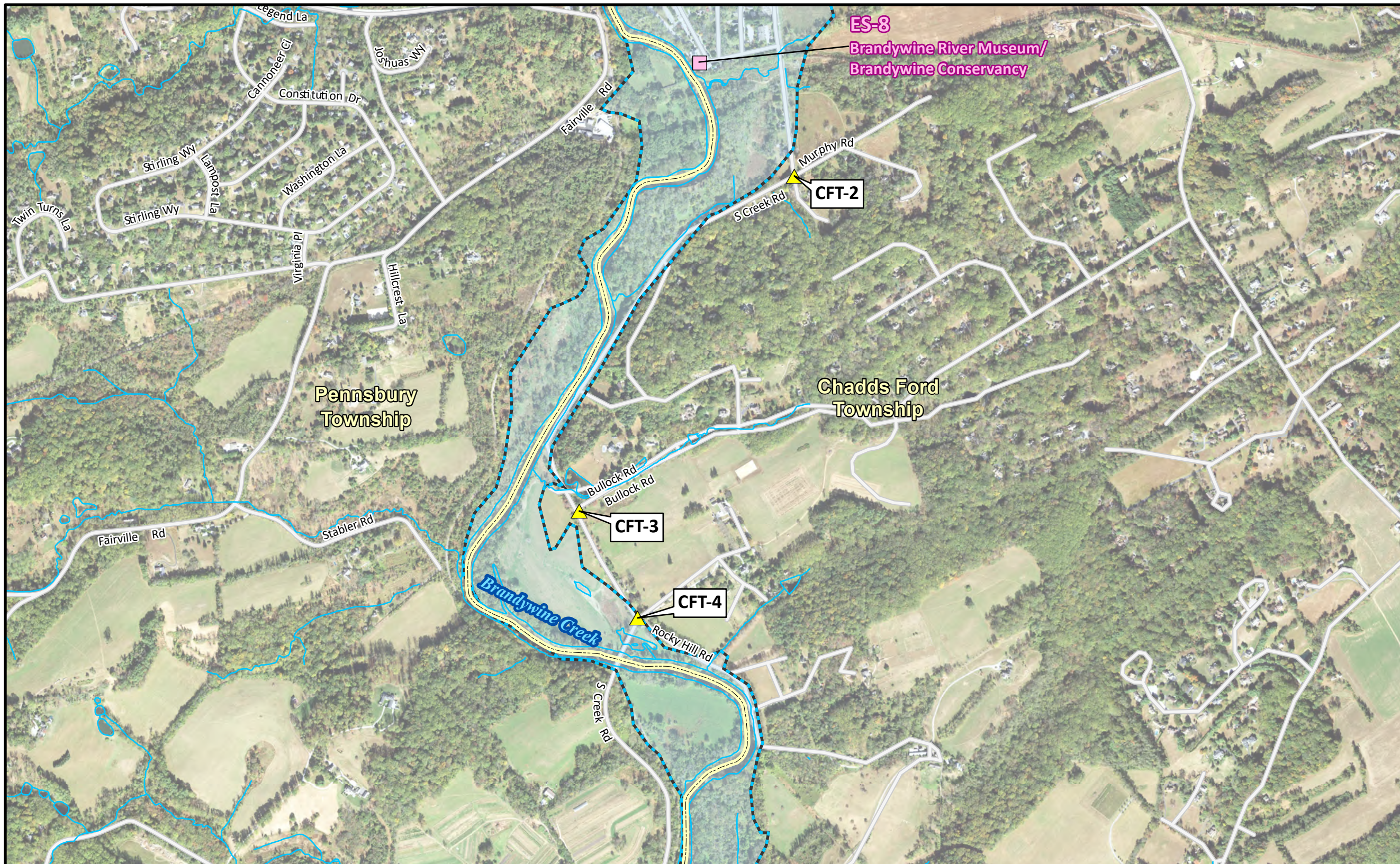
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Traffic Control Points (TCP #)

ID#	Location	Municipality
CFT-2	S Creek Rd at Murphy Road	Chadds Ford Twp
CFT-3	S Creek Rd at Bullock Road	Chadds Ford Twp
CFT-4	Rocky Hill Road at S Creek Road	Chadds Ford Twp

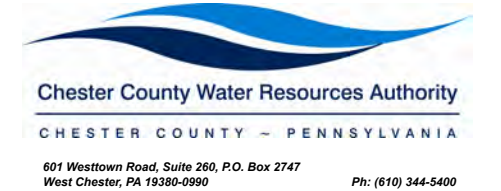
### Sources

- Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)
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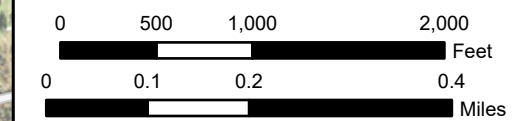
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Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

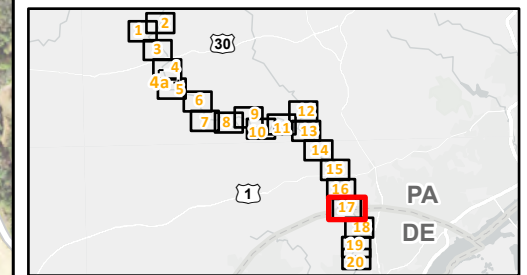


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

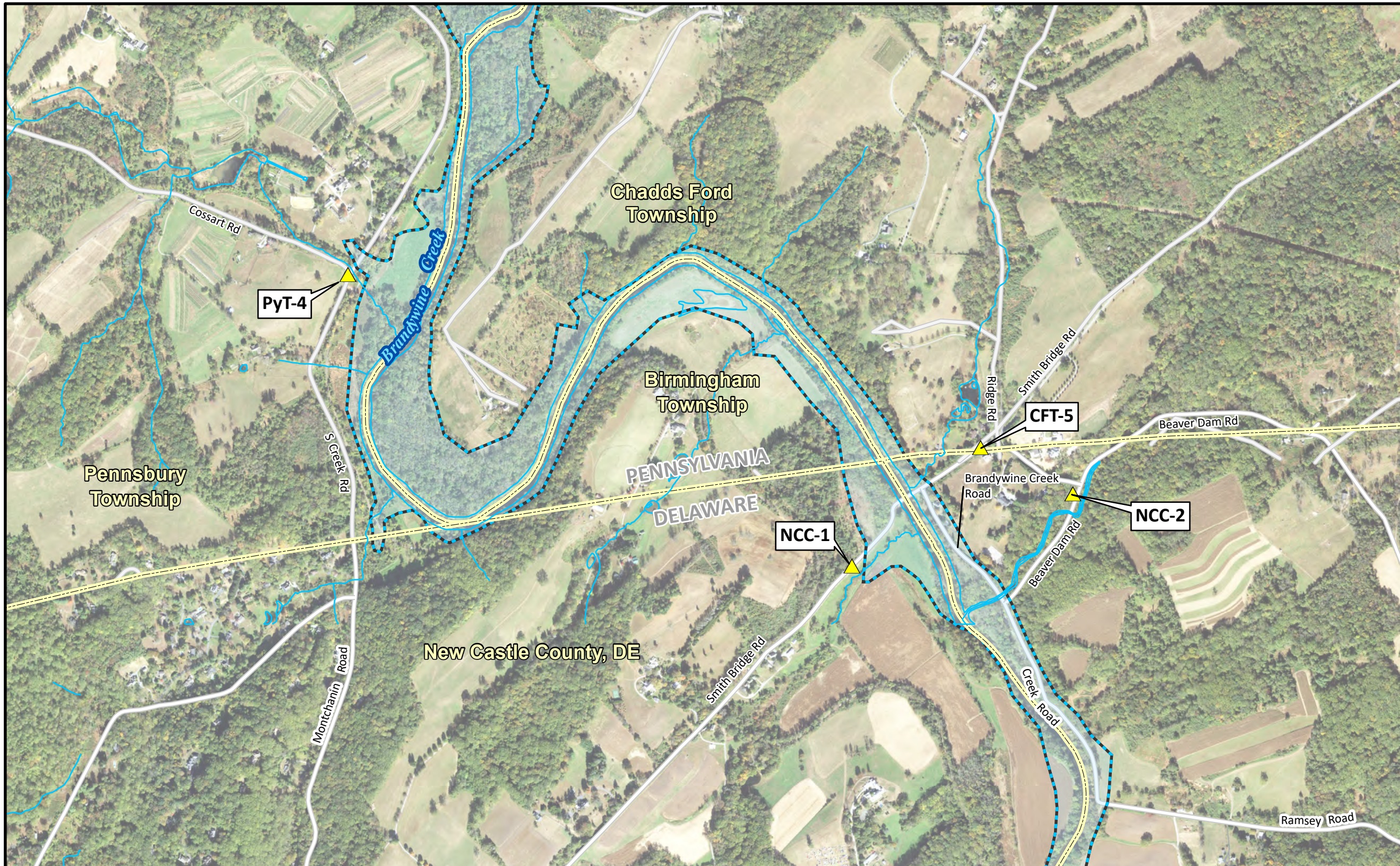
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Traffic Control Points (TCP #)

ID#	Location	Municipality
PyT-4	S Creek Road at Cossart Road	Pennsbury Twp
NCC-1	Smith Bridge Road 800 feet west of Brandywine Creek	New Castle County, Delaware
CFT-5	Smith Bridge Road at Ridge Road	Chadds Ford Twp
NCC-2	Beaver Dam Road at Ridge Road	New Castle County, Delaware

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

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January 2021



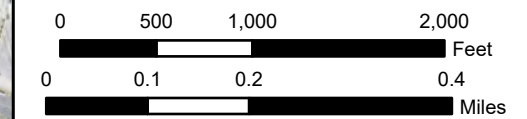
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SDF with Breach  
West Caln Township, Chester County

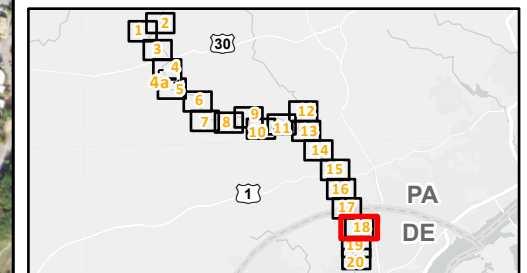


### Legend

- Traffic Control Point
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- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



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Traffic Control Points (TCP #)

ID#	Location	Municipality
NCC-3	Ramsey Road at Thompson Bridge Road	New Castle County, Delaware
NCC-4	Thompson Bridge Road 600 feet east of Brandywine Creek	New Castle County, Delaware
NCC-5	Thompson Bridge Road 600 feet west of Brandywine Creek	New Castle County, Delaware

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)

Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



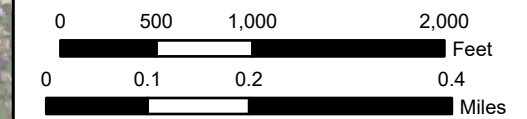
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

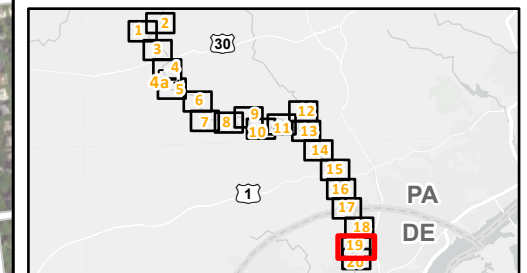


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

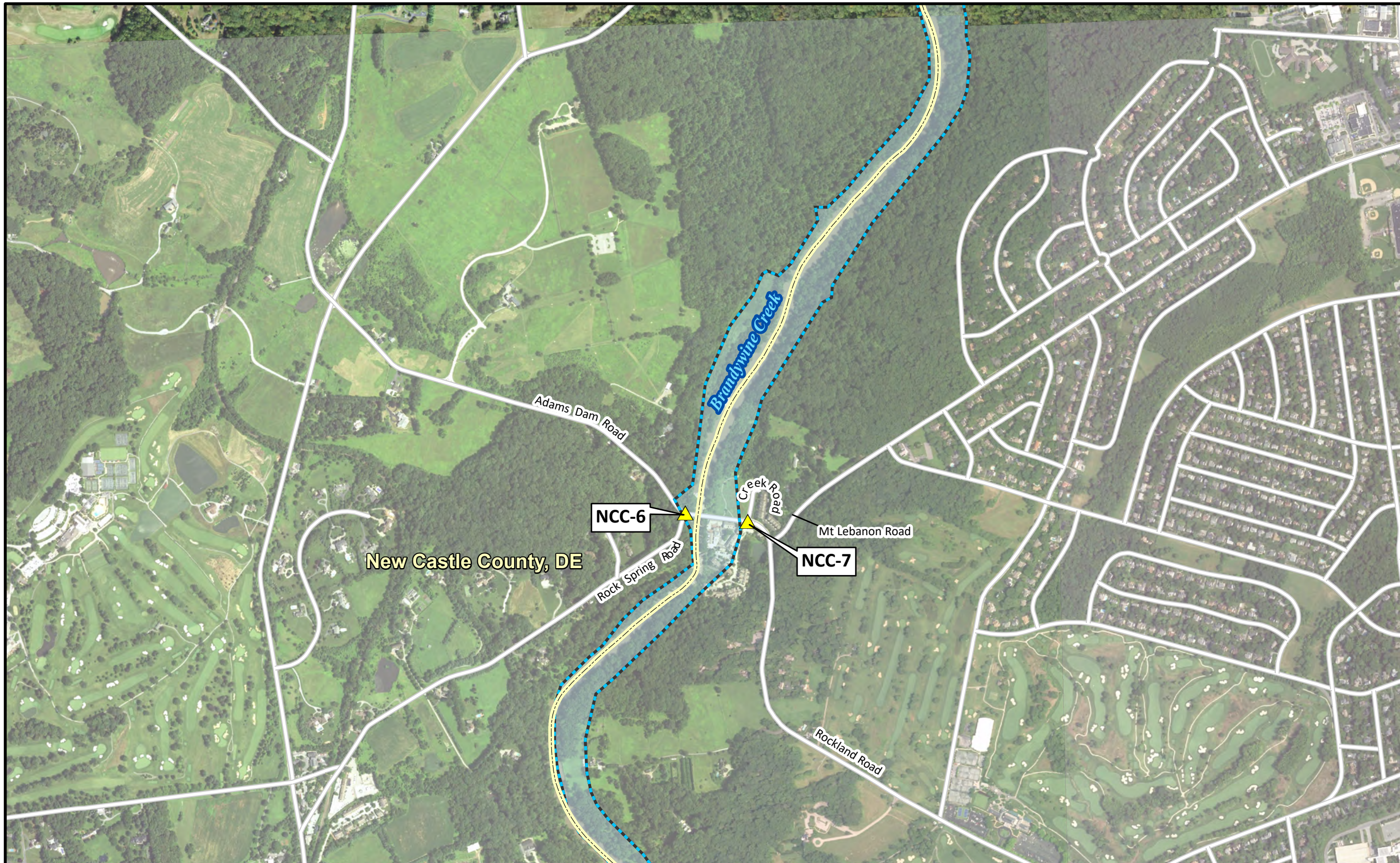
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Traffic Control Points (TCP #)	ID#	Location	Municipality
	NCC-6	Adams Dam Road at Rockland Road	New Castle County, Delaware
	NCC-7	Creek Road at Rockland Road	New Castle County, Delaware

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)

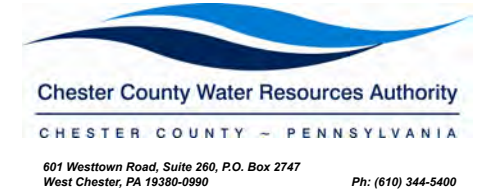
Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



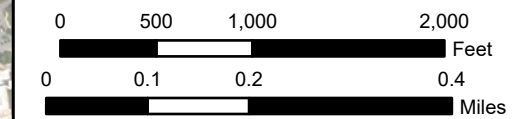
# HIBERNIA DAM EMERGENCY ACTION PLAN

Dam Breach Inundation Mapping  
SDF with Breach  
West Caln Township, Chester County

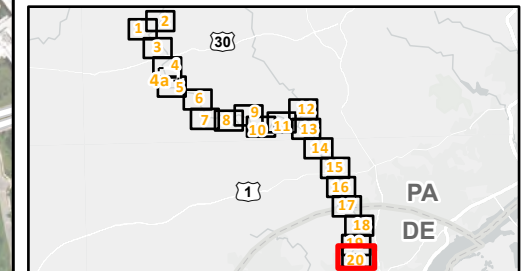


### Legend

- Traffic Control Point
- Hibernia Dam Inundation Zone
- Evacuation Site
- Municipal Boundary
- Stream



### Location Map



### Disclaimers

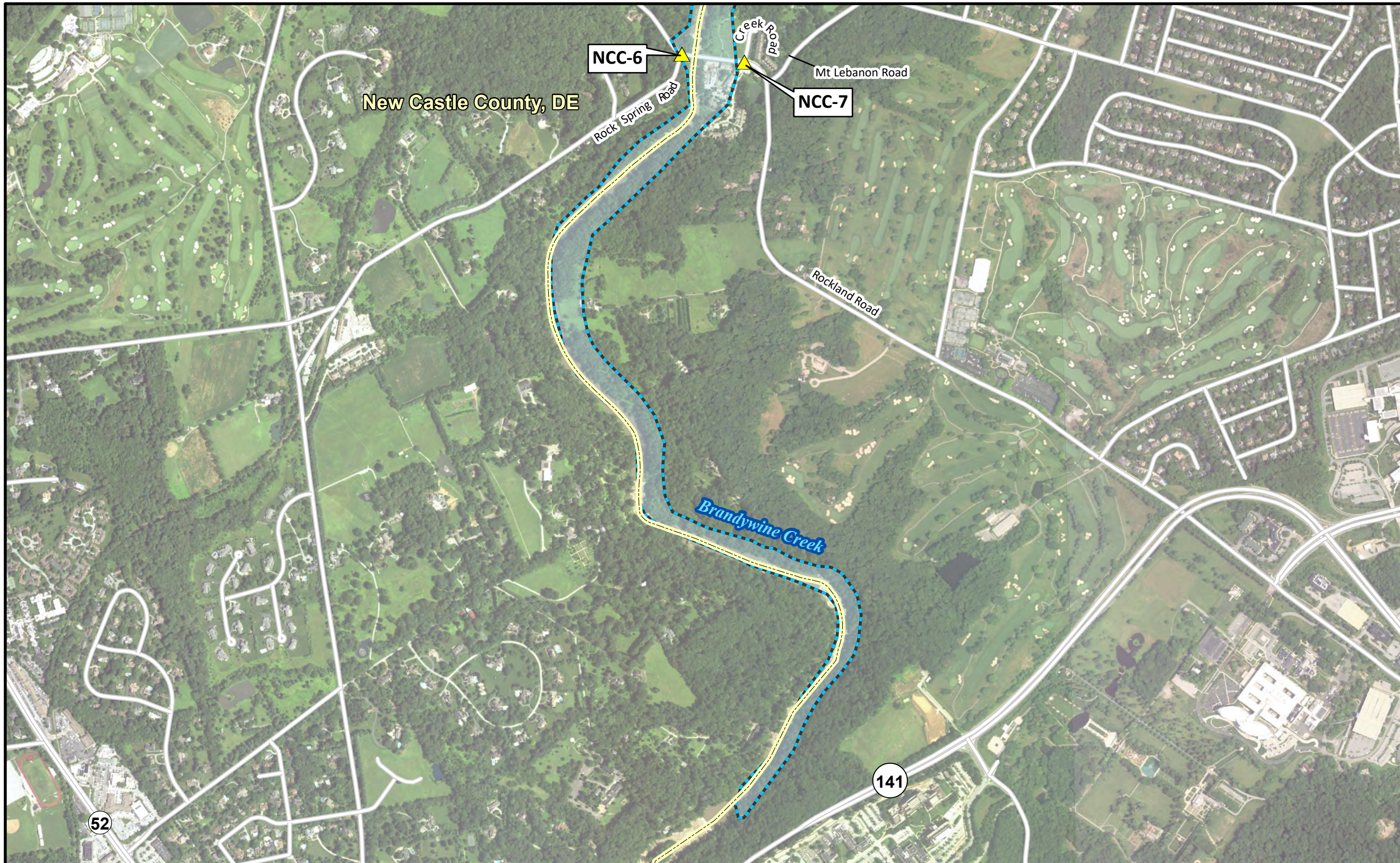
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Traffic Control Points (TCP #)	ID#	Location	Municipality
52	NCC-6	Adams Dam Road at Rockland Road	New Castle County, Delaware
	NCC-7	Creek Road at Rockland Road	New Castle County, Delaware

### Sources

Hibernia Dam Inundation Zone - Hibernia Dam Breach Analysis, Inundation Map, prepared by Gannett Fleming, Inc. (February 1999)

Roads, Hydrography, Municipal Boundaries - Chester County Bureau of Land Records (2020)

Orthoimagery - United States Department of Agriculture (USDA) (PA 2019 and DE 2015)

January 2021



## ATTACHMENT B - TRAFFIC CONTROL POINTS (TCP)

TCP #	LOCATION	MUNICIPALITY	RESPONSIBLE AGENCY
WCT-1	Reid Road 300 feet west of West Branch Brandywine Creek	West Caln Twp	West Caln Township Police
WCT-2	Cedar Knoll Road at Park Road	West Caln Twp	West Caln Township Police
WCT-2A	Lions Head Dr at Old Dam Rd	West Caln Twp	West Caln Township Police
WCT-3	Wagontown Road 100 feet west of Lions Head Drive	West Caln Twp	West Caln Township Police
WCT-3A	Wagontown Road 2,000 feet east of Mallard Dr southeast of Chambers Lake	West Caln Twp	West Caln Township Police
WCT-4	Sugarman Road 550 feet west of Camp Stewart Road	West Caln Twp	West Caln Township Police
WCT-5	Hatfield Road at Wagontown Road	West Caln Twp	West Caln Township Police
WCT-6	West Kings Highway (Rt. 340) at Siousca Station	West Caln Twp	West Caln Township Police
WBT-1	Lafayette Road 300 feet west of West Branch Brandywine Creek	West Brandywine Twp	West Brandywine Township Police
WBT-2	Lafayette Road at Hibernia Road	West Brandywine Twp	West Brandywine Township Police
WBT-3	Reid Road at Hibernia Road	West Brandywine Twp	West Brandywine Township Police
WBT-4	Cedar Knoll Road at Hibernia Road	West Brandywine Twp	West Brandywine Township Police
WBT-5	Hibernia Road at Wagontown Road	West Brandywine Twp	West Brandywine Township Police
WBT-6	Pratts Dam Road at Landover Road	West Brandywine Twp	West Brandywine Township Police
VT-1	East Kings Highway (Rt. 340) at Manor Road (Rt. 82)	Valley Twp	Valley Township Police
VT-4	Wagontown Road at Irish Lane	Valley Twp	Valley Township Police
VT-4A	Entrance ramp to Route 30 Bypass at Airport Road	Valley Twp	Valley Township Police
VT-5	Glencrest Rd and Brick St	Valley Twp	Valley Township Police
VT-6	Butterworth Road at Manor Road (Rt. 82)	Valley Twp	Valley Township Police
VT-7	Finishing Drive 1,500 feet west of Strode Avenue	Valley Twp	Valley Township Police
ST-1	Route 30 Bypass at Intersection with Lincoln Hghwy (Bus. Rt. 30)	Sadsbury Twp	Sadsbury Township Police
CT-1	Entrance ramp to Route 30 Bypass at Fisherville Road	Caln Twp	Caln Township Police
CT-2	Route 30 Bypass at exit ramp to Fisherville Road	Caln Twp	Caln Township Police
CC-1	Manor Rd at Wagontown Rd	Coatesville City	Coatesville City Police
CC-1A	West Lincoln Highway (Business Rt. 30) at South Church Street	Coatesville City	Coatesville City Police
CC-2	North First Avenue (Rt. 82) at E. Chestnut Street	Coatesville City	Coatesville City Police
CC-3	East Lincoln Highway (Business Rt. 30) at North Second Avenue	Coatesville City	Coatesville City Police
CC-4	Harmony Street at South 3rd Avenue	Coatesville City	Coatesville City Police
CC-5	Harmony Street at South 4th Avenue	Coatesville City	Coatesville City Police
CC-6	Harmony Street at South 5th Avenue	Coatesville City	Coatesville City Police
CC-7	Harmony Street at South 6th Avenue	Coatesville City	Coatesville City Police
CC-8	Olive Street at Virginia Avenue	Coatesville City	Coatesville City Police
CC-9	Walnut Street at Woodland Avenue	Coatesville City	Coatesville City Police
CC-10	Walnut Street at South 5th Avenue	Coatesville City	Coatesville City Police
CC-11	Walnut Street at South 4th Avenue	Coatesville City	Coatesville City Police
CC-12	South First Avenue at Oak Street	Coatesville City	Coatesville City Police
CC-13	Valley Road (Rt. 372) at Strode Avenue	Coatesville City	Coatesville City Police

## ATTACHMENT B - TRAFFIC CONTROL POINTS (TCP)

TCP #	LOCATION	MUNICIPALITY	RESPONSIBLE AGENCY
SCB-1	South First Avenue 1,000 feet south of Modena Road	South Coatesville Borough	South Coatesville Borough Police
SCB-2	Newlinville Road at South First Avenue	South Coatesville Borough	South Coatesville Borough Police
MB-1	Baker Street at North Brandywine Avenue	Modena Borough	South Coatesville Borough Police
MB-2	Woodland Avenue at Mary Street	Modena Borough	South Coatesville Borough Police
MB-3	Union Street at Modena Road	Modena Borough	South Coatesville Borough Police
MB-4	Hephzibah Hill Road at Rays Way	Modena Borough	South Coatesville Borough Police
EFT-1	Doe Run Road (Rt. 82) at Newlinville Road	East Fallowfield Twp	East Fallowfield Twp Police Dept
EFT-2	Misty Patch Road 850 feet west of S. Caln Road	East Fallowfield Twp	East Fallowfield Twp Police Dept
EFT-2A	S Caln Rd 1,100 feet east of Misty Patch Road	East Fallowfield Twp	East Fallowfield Twp Police Dept
EFT-3	Mortonville Road at Sawmill Road	East Fallowfield Twp	East Fallowfield Twp Police Dept
EFT-4	Strasburg Road at Brandywine Creek Road	East Fallowfield Twp	East Fallowfield Twp Police Dept
EFT-5	Strasburg Road 100 feet east of Laurel Road	East Fallowfield Twp	East Fallowfield Twp Police Dept
NT-1	Hilltop View Road at Brandywine Creek Road	Newlin Twp	PA State Police - Embreeville
NT-2	Wheatland Drive at Laurel Road	Newlin Twp	PA State Police - Embreeville
NT-3	Laurel Road at Ridings Way	Newlin Twp	PA State Police - Embreeville
NT-4	Green Valley Road at Brandywine Creek Road	Newlin Twp	PA State Police - Embreeville
NT-5	Youngs Road at Laurel Road	Newlin Twp	PA State Police - Embreeville
NT-6	Powell Road at Brandywine Creek Road	Newlin Twp	PA State Police - Embreeville
NT-7	Cannery Road at Embreeville Road (Rt. 162)	Newlin Twp	PA State Police - Embreeville
NT-8	Embreeville Road (Rt. 162) 400 feet north of Embreeville Bridge	Newlin Twp	PA State Police - Embreeville
NT-9	Embreeville Road (Rt. 162) at Harveys Bridge Road	Newlin Twp	PA State Police - Embreeville
NT-10	Stargazers Road at Embreeville Road (Rt. 162)	Newlin Twp	PA State Police - Embreeville
NT-11	Ryan Blvd at Embreeville Road	Newlin Twp	PA State Police - Embreeville
NT-12	Warpath Road at Brandywine Drive	Newlin Twp	PA State Police - Embreeville
NT-13	Oak School Road at East Glenhall Road	Newlin Twp	PA State Police - Embreeville
WBfd-1	Telegraph Road (Rt. 162) at Groundhog College Road	West Bradford Twp	PA State Police - Embreeville
WBfd-2	Broad Run Road at Northbrook Road	West Bradford Twp	PA State Police - Embreeville
WBfd-3	Camp Linden Road at North Wawaset Road	West Bradford Twp	PA State Police - Embreeville
PT-1	Northbrook Road at Bragg Hill Road	Pocopson Twp	PA State Police - Avondale
PT-2	Unionville Wawaset Road (Rt. 842) at Davidson Road	Pocopson Twp	PA State Police - Avondale
PT-3	Carolannes Way at North Wawaset Road	Pocopson Twp	PA State Police - Avondale
PT-4	Bridge Road (Rt. 842) at North Wawaset Road	Pocopson Twp	PA State Police - Avondale
PT-5	South Wawaset Road 800 feet south of Unionville Wawaset Road	Pocopson Twp	PA State Police - Avondale
PT-6	Lenape Road (Rt. 52) at Pocopson Road	Pocopson Twp	PA State Police - Avondale
PT-7	Street Road (Rt. 926) at Pocopson Road	Pocopson Twp	PA State Police - Avondale
EBfdT-1	Allerton Road at S. Bridge Road	East Bradford Twp	West Chester Borough Police Dept
EBfdT-2	Allerton Road at Lucky Hill Road	East Bradford Twp	West Chester Borough Police Dept
EBfdT-3	N. Creek Road at W. Miner Street (Rt. 842)	East Bradford Twp	West Chester Borough Police Dept
EBfdT-4	Withers Way at S. Creek Road	East Bradford Twp	West Chester Borough Police Dept
EBfdT-5	Saint Finegan Drive at S. Creek Road	East Bradford Twp	West Chester Borough Police Dept
EBfdT-6	Lenape Road (Route 52) at S. Creek Road	East Bradford Twp	West Chester Borough Police Dept
BT-1	Country Club Road at Creek Road	Birmingham Twp	Birmingham Township Police Dept
BT-2	West Street Road (Rt. 926) at Creek Road	Birmingham Twp	Birmingham Township Police Dept



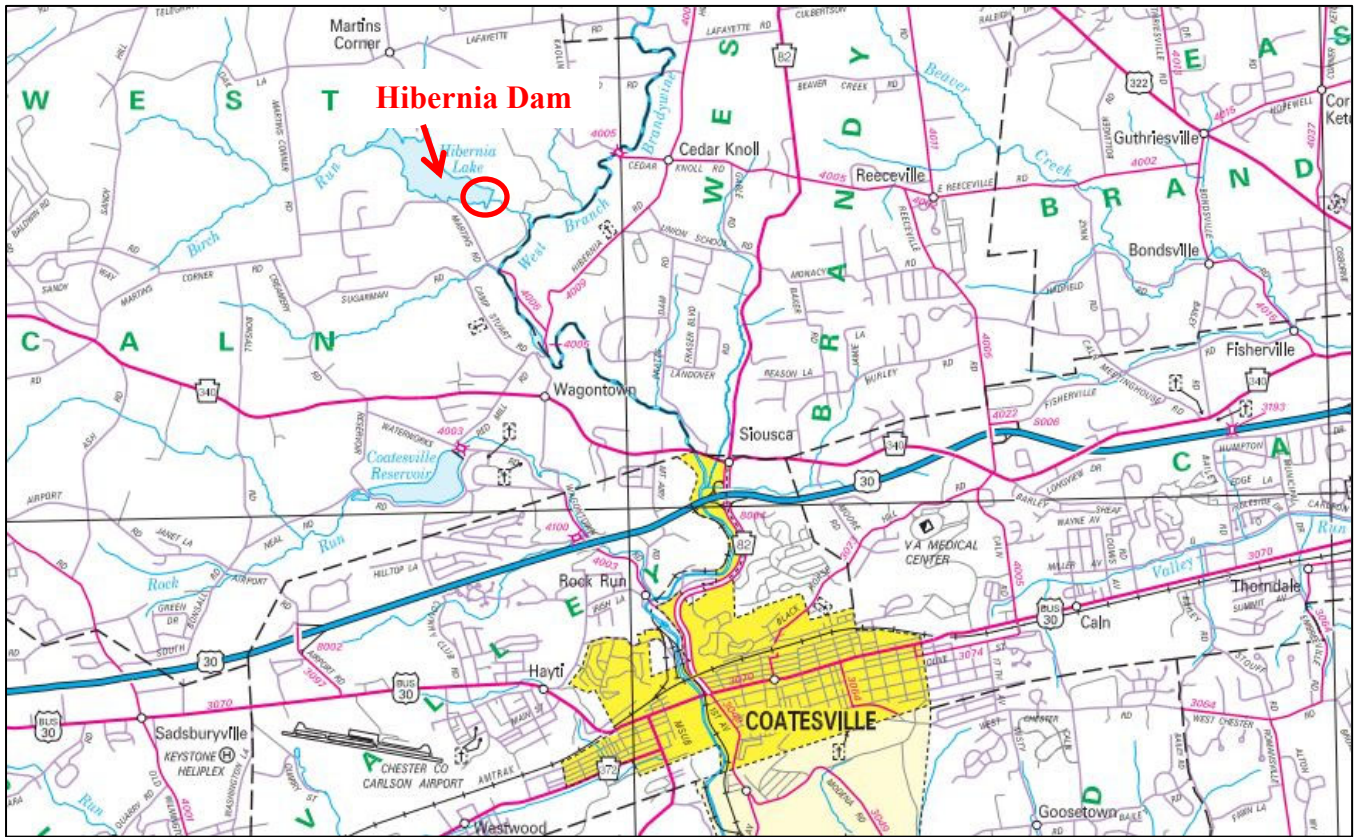
## ATTACHMENT B - TRAFFIC CONTROL POINTS (TCP)

TCP #	LOCATION	MUNICIPALITY	RESPONSIBLE AGENCY
BT-3	Meetinghouse Road at Creek Road	Birmingham Twp	Birmingham Township Police Dept
BT-4	Continental Line Lane 200 feet east of Creek Road	Birmingham Twp	Birmingham Township Police Dept
BT-5	Wylie Road at Creek Road	Birmingham Twp	Birmingham Township Police Dept
BT-6	Brintons Bridge Road at Creek Road	Birmingham Twp	Birmingham Township Police Dept
BT-7	Master Way at Creek Road	Birmingham Twp	Birmingham Township Police Dept
PyT-1	Pocopson Road at Brintons Bridge Road	Pennsbury Twp	PA State Police - Avondale
PyT-2	Brintons Bridge Road at Chaddwyck Lane	Pennsbury Twp	PA State Police - Avondale
PyT-3	Baltimore Pike (Rt 1) at Fairville Road	Pennsbury Twp	PA State Police - Avondale
PyT-4	S Creek Road at Cossart Road	Pennsbury Twp	PA State Police - Avondale
CFT-1	Baltimore Pike (Rt. 1) at Creek Road	Chadds Ford Twp	PA State Police - Media
CFT-2	S Creek Rd at Murphy Road	Chadds Ford Twp	PA State Police - Media
CFT-3	S Creek Rd at Bullock Road	Chadds Ford Twp	PA State Police - Media
CFT-4	Rocky Hill Road at S Creek Road	Chadds Ford Twp	PA State Police - Media
CFT-5	Smith Bridge Road at Ridge Road	Chadds Ford Twp	PA State Police - Media
NCC-1	Smith Bridge Road 800 feet west of Brandywine Creek	New Castle County, Delaware	New Castle County Police Dept
NCC-2	Beaver Dam Road at Ridge Road	New Castle County, Delaware	New Castle County Police Dept
NCC-3	Ramsey Road at Thompson Bridge Road	New Castle County, Delaware	New Castle County Police Dept
NCC-4	Thompson Bridge Road 600 feet east of Brandywine Creek	New Castle County, Delaware	New Castle County Police Dept
NCC-5	Thompson Bridge Road 600 feet west of Brandywine Creek	New Castle County, Delaware	New Castle County Police Dept
NCC-6	Adams Dam Road at Rockland Road	New Castle County, Delaware	New Castle County Police Dept
NCC-7	Creek Road at Rockland Road	New Castle County, Delaware	New Castle County Police Dept

# ATTACHMENT C – LOCATION MAP

## Hibernia Dam

West Caln Township, Chester County, PA



2014

GENERAL HIGHWAY MAP

## CHESTER COUNTY PENNSYLVANIA

PREPARED BY THE  
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION  
BUREAU OF PLANNING AND RESEARCH  
GEOGRAPHIC INFORMATION DIVISION  
IN COOPERATION WITH THE  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

Scale 1:65,000  
0 0.5 1 2 3 Miles  
0 0.5 1 2 3 4 5 Kilometers



### HIBERNIA DAM DIRECTIONS FROM BUSINESS US ROUTE 30 IN COATESVILLE:

- #1 – North on SR 82 (Manor Road) for approx. 2.25 miles to Route 340 (Kings Highway);
- #2 – West (left) on Route 340 Cedar Knoll Road for approx. 2.4 miles to Creamery Road;
- #3 – North (right) on Creamery Road for approx. 1.1 miles to Martins Corner Road
- #4 – East (right) on Martins Corner Road to Wagontown Road;
- #5 – East (right) on Wagontown Road for approx. 1.0 miles to parking lot entrance on left, then 200 feet to dam access road on right.
- #6 – East (right) onto gravel dam access road for approx. 0.25 miles to gate at dam.

## ATTACHMENT D – TELEPHONE ROSTER

### Dam Owner and County Emergency Services

Agency	Phone Number	24-Hour Phone Number
Chester County Water Resources Authority Executive Director	610-344-5400	911 (610) 396-7403 (Cell)
Chester County 9-1-1 Communications Center	911	911
Chester County Department of Emergency Services	610-344-5000	610-344-5000
Delaware County Emergency Services Dept.	610-565-8700	610-565-8700
New Castle County (DE) Office of Emergency Management	302-395-2700	302-395-2700

### Municipal Emergency Management Coordinators

Agency	Phone Number	24-Hour Phone Number
West Caln Twp EMC	610-384-5643 Township #	**
West Brandywine Twp EMC	610-380-8200 Township #	**
Valley Twp EMC	610-384-5751 Township #	**
Coatesville City EMC	610-384-0300 City #	**
South Coatesville Borough EMC	610-384-1700 Borough #	**
Modena Borough EMC	610-384-6777 Borough #	**
East Fallowfield Twp EMC	610-384-7144 Township #	**
Newlin Twp EMC	610-436-1141 Township #	**
West Bradford Twp EMC	610-269-4174 Township #	**
Pocopson Twp EMC	610-793-2151 Township #	**
East Bradford Twp EMC	610-436-5108 Township #	**
Birmingham Twp EMC	610-793-2600 Township #	**
Pennsbury Twp EMC	610-388-7323 Township #	**
Chadds Ford Twp EMC	610-388-6368 Township #	**

\*\* Notification is by Chester County 9-1-1, pager, radio or notification system.

## ATTACHMENT D – TELEPHONE ROSTER

### Other Agencies to be Notified

Agency	Phone Number	24-Hour Phone Number
PADEP Southeast Regional Office, Norristown	484-250-5900 (24-Hour)	484-250-5900 (24-Hour)
PADEP Dam Safety, Harrisburg	717-787-8568	717-787-4343 800-541-2050 717-805-3057
PA Emergency Management Agency	717-651-2001 800-424-7362	717-651-2001 800-424-7362
American Red Cross, Delaware Valley PA Chapter	215-299-4000 (24-Hour)	833-583-3111 (24-Hour)
American Red Cross, Delmarva Chapter	302-656-6620	Via New Castle County Office of Emergency Management

# ATTACHMENT E

## MEDIA ANNOUNCEMENT

### **EARLY WARNING MESSAGE:**

The Chester County Department of Emergency Services advises that due to conditions at Hibernia Dam in West Caln Township, the public should avoid the area downstream of the dam adjacent to Birch Run and West Branch Brandywine Creek and Brandywine Creek through West Caln Township, West Brandywine Township, Valley Township, City of Coatesville, South Coatesville Borough, Modena Borough, East Fallowfield Township, Newlin Township, West Bradford Township, East Bradford Township, Pocopson Township, Pennsbury Township, Birmingham Township and Chadds Ford Township in Pennsylvania; and New Castle County in Delaware. Stay tuned for further information.

\*\*\*REPEAT PERIODICALLY\*\*\*

### **WARNING AND EVACUATION MESSAGE:**

The Chester County Department of Emergency Services is advising all residents living downstream of Hibernia Dam in West Caln Township to evacuate the area immediately. Evacuate the area adjacent to Birch Run, the West Branch Brandywine Creek and Brandywine Creek through West Caln Township, West Brandywine Township, Valley Township, City of Coatesville, South Coatesville Borough, Modena Borough, East Fallowfield Township, Newlin Township, West Bradford Township, East Bradford Township, Pocopson Township, Pennsbury Township, Birmingham Township and Chadds Ford Township in Pennsylvania; and New Castle County in Delaware. 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 Chester County Department of Emergency Services is advising residents of the area downstream of Hibernia Dam in West Caln Township that the problem at the dam has been resolved and that residents may return to their homes. This may apply to residents adjacent to Birch Run, West Branch Brandywine Creek and Brandywine Creek through West Caln Township, West Brandywine Township, Valley Township, City of Coatesville, South Coatesville Borough, Modena Borough, East Fallowfield Township, Newlin Township, West Bradford Township, East Bradford Township, Pocopson Township, Pennsbury Township, Birmingham Township and Chadds Ford Township in Pennsylvania; and New Castle County in Delaware.

**\*\*\*REPEAT PERIODICALLY\*\*\***

**NOTE:** The above messages should be modified as necessary to fit the situation.

**ATTACHMENT F**

**POSTING NOTICE**

# NOTICE

**HIBERNIA DAM** HAS BEEN CLASSIFIED BY THE  
PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION,  
DIVISION OF DAM SAFETY,  
**AS A HIGH HAZARD DAM.** THIS IS A DAM SO LOCATED AS TO  
ENDANGER POPULATED AREAS DOWNSTREAM BY ITS FAILURE.

An Emergency Action Plan has been developed for **Hibernia Dam**. A copy of this plan, including an inundation map noting areas in West Caln Township, West Brandywine Township, Valley Township, the City of Coatesville, South Coatesville Borough, Modena Borough, East Fallowfield Township, Newlin Township, West Bradford Township, Pocopson Township, East Bradford Township, Birmingham Township, Pennsbury Township, and Chadds Ford Township in Pennsylvania, and New Castle County in Delaware, subject to flooding in the event of failure, is available for public inspection at the following locations:

Chester County Water Resources Authority	601 Westtown Rd, Suite 260, West Chester, PA 19382
Chester County Dept. of Emergency Services	601 Westtown Rd, Suite 012, West Chester, PA 19382
Delaware County Dept. of Emergency Services	360 N. Middletown Road, Lima, PA 19063
West Caln Township Office	721 W. Kings Highway, Wagontown, PA 19376
West Brandywine Township Office	198 Lafayette Road, Coatesville, PA 19320
Valley Township Office	890 West Lincoln Highway, Coatesville, PA 19320
Coatesville City Hall	1 City Hall Place, Coatesville, PA 19320
South Coatesville Borough Office	136 Modena Road, South Coatesville, PA 19320
Modena Borough Office	5 Woodland Avenue, Modena, PA 19358
East Fallowfield Township Office	2264 Strasburg Road, East Fallowfield, PA 19320
Newlin Township Office	1751 Embreeville Road, Coatesville, PA 19320
West Bradford Township Office	1385 Campus Drive, Downingtown, PA 19335
Pocopson Township Office	740 Denton Hollow Road, West Chester, PA 19382
East Bradford Township Office	676 Copeland School Road, West Chester, PA 19380
Birmingham Township Office	1040 W. Street Rd (Rt. 926), West Chester, PA 19382-8012
Pennsbury Township Office	702 Baltimore Pike, Chadds Ford, PA 19317
Chadds Ford Township Office	10 Ring Road, Chadds Ford, PA 19317
New Castle County Office of Emergency Preparedness	3601 N. Dupont Highway, New Castle, DE 19720



**Chester County Water Resources Authority**

CHESTER COUNTY ~ PENNSYLVANIA

610-344-5400

[www.chesco.org/water](http://www.chesco.org/water)

This NOTICE is posted per Pennsylvania Department of Environmental Protection's  
Chapter 105 (PA Code of Regulation) Dam Safety and Water Management §105.134(c).

**AUG 2022**



# **ATTACHMENT G**

## **CCWRA HIBERNIA DAM EMERGENCY THREAT LEVEL/ ACTION SHEET**

# ATTACHMENT G - EMERGENCY THREAT LEVEL ACTION SHEET

Physical Feature	Flood Water Elevation (NGVD 29)	Dam Emergency Threat Level	Action by CCWRA	Flood Storage (Mgals)	Approximate Percent of Flood Storage (relative to Emergency Spillway)
Top of Dam	596.5'			684	266%
2.5 feet below Top of Dam	594.0'	<b>Level 1</b>	CALL 911 AND PADEP AND NOTIFY TO BEGIN <b>EVACUATION</b> PER Section III.D of the EAP and that overtopping of the dam is likely and/or failure of the dam is possible or imminent.	554	216%
Top of Rail on Riser	588.0'			277	108%
Crest of Emergency Spillway	587.5'		CALL 911 AND ADVISE THAT WATER HAS BEGUN TO FLOW THROUGH THE EMERGENCY SPILLWAY	257	100%
1 foot below Crest of Emergency Spillway	586.5'	<b>Level 2</b>	CALL 911 & PADEP AND <b>NOTIFY EARLY WARNING NOTIFICATION</b> PER SECTION III.C. AND <b>EARLY EVACUATION OF THREE (3) NEARBY RESIDENCES</b> PER SECTION III.D of the EAP; alert that water may crest the emergency spillway - downstream flooding may occur.	217	84%
Maximum observed flood level (5/1/14)	585.55'			180	70%
Top of Riser platform	584.5'			141	55%
	584.0'	<b>Level 3</b>	BEGIN continuous 24-hour monitoring of dam PER SECTION III.B. of the EAP.	125	49%
	583.5'		END 24-hour monitoring of the dam (post-event). (CALL 911 IF EAP WAS ACTIVATED - notify incident resolved.)	108	42%
	582.0'	<b>Level 4</b>	BEGIN periodic monitoring of dam.	59	23%
	581.0'		END periodic monitoring of the dam (post-event).	29	11%
Normal Pool	580.0'			0	0%
Invert of Reservoir Drain/Inlet	533.1'				
		<b>Level 5</b>	Precipitation/runoff accumulation and/or predictions warrant PREPARATION for initiating periodic inspections.		

**Dam Emergency Threat Level** has been developed by CCWRA to assist field staff in the implementation of the Hibernia Dam EAP. Actions consistent with **Level 1**, the most critical threat level, would include full implementation of the EAP, i.e. initiation of evacuation, setting up Traffic Control Points (TCPs), etc. **Level 1** would occur when water is at or very near the top the dam and could potentially to flow over the top of the dam within approximately 1 hour, or if any other condition in Section III.D.1.c. (page 3) were to occur. Actions consistent with **Level 2**, would include implementation of Early Warning Notification of EAP to inform emergency responders of expected flooding. **Level 2** would occur when water is very near the crest of emergency grass lined spillway, or occurrence of an earthquake in the general region of the dam.

## **ATTACHMENT H - WARNING AND EARLY EVACUATION - THREE (3) NEARBY RESIDENCES**

When flood waters rise to within 1 foot below the crest of the auxiliary spillway (elevation 586.5 feet), the three (3) residences within Hibernia County Park that are directly downstream of Hibernia Dam should be evacuated. These three residences (Cottages 1, 3, & 5) are listed below and may be impacted by elevated water levels in Birch Run and the West Branch Brandywine Creek when water is flowing through the auxiliary spillway.

### **Three (3) Nearby Residences at Hibernia Dam**

1. 5 Lions Head Road, Coatesville, PA 19320 – Cottage 5 (Evacuation Site - 1)
2. 3 Lions Head Road, Coatesville, PA 19320 – Cottage 3 (Evacuation Site - 2)
3. 1 Lions Head Road, Coatesville, PA 19320 – Cottage 1 (Evacuation Site - 3)

**Locations of these three Evacuation Sites are shown on Page 1 of the Inundation Maps found in *Attachment A*, and are labeled ES-1, ES-2, and ES-3.**