Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA Office

For Office Use Only Executive Office of Environmental Affairs	
EOEA No.:	12849
MEPA Analyst:	NICK ZAVOLAS
Phone: 617-626-	1030

ENF Environmental Notification Form

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Mill Pond Dam Breach		
Street: Mill Street and South Street		
Municipality: Hanover/Norwell	Watershed: South Coastal (North River)	
Universal Tranverse Mercator Coordinates: 348284 E 4666691 N	Latitude: 42.1395 degrees Longitude: -70.8358 degrees	
Estimated commencement date: 3/01/2002	Estimated completion date: 10/30/2002	
Approximate cost: $170,000	Status of project design: 50 %complete	
Proponent: South Shore YMCA		
Street: 79 Coddington Street		
Municipality: Quincy	State: MA	Zip Code: 02169
Name of Contact Person From Whom Copies of this ENF May Be Obtained: William H. Hover		
Firm/Agency: GZA GeoEnvironmental, Inc.	Street: One Edgewater Drive	
Municipality: Norwood	State: MA	Zip Code: 02062
Phone: (781) 278-3700	Fax: (781) 278-3701	E-mail: whover@gza.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? ☒Yes ☐No

The project exceeds the mandatory EIR threshold for Wetlands, Waterways and Tidelands as it involves a structural alteration of a dam that will cause a decrease in the impoundment capacity. However, we are requesting a waiver of an EIR for this project on the grounds that the dam has already failed and, in its existing condition, remains unsafe, that this is a restoration of a natural brook, and that significant stabilization and wetland growth within the lowered impoundment has already occurred (see photos attached as Appendix A). In addition, the cost of an EIR would be a financial burden on the SSYMCA, which is a non-profit organization. Members of the River Restore Triage Team and the Dam Decommissioning Task Force concur with an EIR waiver request.

Has this project been filed with MEPA before? ☐Yes (EOEA No._____) ☒No

Has any project on this site been filed with MEPA before? ☐Yes (EOEA No._____) ☒No

Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:

a Single EIR? (see 301 CMR 11.06(8))	☐Yes	☒No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes	☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☒Yes	☐No
a Phase I Waiver? (see 301 CMR 11.11)	☐Yes	☒No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres):___

none

Are you requesting coordinated review with any other federal, state, regional, or local agency? ☒Yes(See Permitting Agencies below) ☐No

List Local or Federal Permits and Approvals:

- Order of Conditions – Hanover/Norwell Conservation Commission;
- Section 404 Proactive Restoration Category II Permit – U.S. Army Corps of Engineers;
- NPDES Notice of Intent
- Please note that a 401 Water Quality Certification may also be necessary if it is determined that an individual Section 404 permit is required by the Army Corps of Engineers.

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- ☐ Land
- ☐ Water
- ☐ Energy
- ☐ ACEC
- ☐ Rare Species
- ☐ Wastewater
- ☐ Air
- ☐ Regulations
- ☒ Wetlands, Waterways, & Tidelands
- ☐ Transportation
- ☐ Solid & Hazardous Waste
- ☐ Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	5		
New acres of land altered		Less than 0.5 acres actually disturbed during breach. Approximately 4 acre previous impoundment will be lowered.	
Acres of impervious area	0	0	0
Square feet of new bordering vegetated wetlands alteration		Increase of about 4 acres	
Square feet of new other wetland alteration		0	
Acres of new non-water dependent use of tidelands or waterways		0	
STRUCTURES			
Gross square footage	N/A	N/A	N/A
Number of housing units	N/A	N/A	N/A
Maximum height (in feet)	N/A	N/A	N/A
TRANSPORTATION			
Vehicle trips per day	N/A	N/A	N/A
Parking spaces	N/A	N/A	N/A
WATER/WASTEWATER			
Gallons/day (GPD) of water use	N/A	N/A	N/A
GPD water withdrawal	N/A	N/A	N/A
GPD wastewater generation/ treatment	N/A	N/A	N/A
Length of water/sewer mains (in miles)	N/A	N/A	N/A

State Permits & Approvals

- ☒ Order of Conditions
- ☐ Superseding Order of Conditions
- ☐ Chapter 91 License
- ☐ 401 Water Quality Certification
- ☐ MHD or MDC Access Permit
- ☐ Water Management Act Permit
- ☐ New Source Approval
- ☐ DEP or MWRA Sewer Connection/ Extension Permit
- ☒ Other Permits (*including Legislative Approvals*) – Specify:

Chapter 91 Waiver

Chapter 253 Dam Safety Permit

MHC Project Notification Form

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐Yes (Specify_____) ☒No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐Yes (Specify_____) ☒No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☐Yes (Specify_____) ☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☐Yes (Specify_____) ☒No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐Yes (Specify_____) ☒No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒No

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative

A. Project Site Description

The dam is located on Third Herring Brook in Hanover and Norwell, Massachusetts. The dam consists of two earth embankments about 5 to 9 feet high, divided by a six-foot wide concrete sluiceway. A stone auxiliary spillway with a concrete weir is located on the west side of the dam near the right abutment (looking downstream). The right embankment, which constitutes the majority of the dam, comprises upstream and downstream stone walls, spaced approximately 15 feet apart, with earth fill between the walls. A locus plan is provided as Figure 1. A plan view of the dam showing existing conditions is provided as Figure 2. Proposed breach alternatives are provided in Figures 3 through 6. Photographs of the site are provided in Appendix A.

Previous inspection reports and GZA site visits show the condition of Mill Pond Dam to be poor with recent potential failing conditions, with a portion of the left sluiceway training wall already collapsed. Based on an emergency authorization issued by the Department of Environmental Management (DEM) Office of Dam Safety, the YMCA removed the flashboards from the sluiceway and lowered the water level on February 9, 2001. In GZA GeoEnvironmental, Inc.'s (GZA's) opinion, continued heavy water flows through the collapsed portion of the training wall and the adjacent dam embankment fill would have led to breaching failure of the dam, had these measures not been taken. Since removal of the flashboards, the former impoundment has become revegetated and the flow is stabilizing within its former channel.

B. Alternatives

As a result of this event, DEM requested further investigations to evaluate the feasibility of repairing the Dam versus permanently breaching it, in a manner consistent with currently accepted dam engineering practice and Commonwealth of Massachusetts Dam Safety Regulations. GZA performed a feasibility study of dam repair versus breach and, based on environmental benefits, financial considerations, and both short- and long-term dam safety risks, the YMCA chose to pursue a dam breach. At a minimum, the breach would include very limited local removal of sediment immediately upstream of the dam, removal of the existing sluiceway, and partial excavation of the existing embankments. Limited sediment "headcutting" (estimated to be approximately 50 cubic yards) is expected immediately upstream of the breach primarily during restoration. A sediment evaluation is provided as Appendix B.

GZA evaluated the following four (4) breach alternatives:

1. No Action Alternative

Leaving the structure in its present condition would be in violation of Massachusetts Dam Safety Regulations due to its current failing condition. Moreover, in its current condition, the dam would likely overtop during

peak flows as shown on Figure 3 and cause downstream property damage. The potential risk of a breach would remain under this scenario, therefore, this option was not further pursued.

2. Wide Breach Alternative

GZA conducted hydraulic and hydrologic analyses to determine the likely effect of constructing a relatively wide breach at the location of the existing sluiceway, with a shallow notch to allow fish migration during low flows. This would allow the stream to develop a natural course which existed before the construction of the dam. Figure 4 shows the approximate flood levels within the former impoundment during different storm events. Although, a relatively small area of the impoundment would be periodically flooded, existing bordering vegetated wetlands (BVW) within the former impoundment area will likely be sustained by high groundwater levels. Therefore, there will likely be sufficient water available without periodic inundation to support the BVW. See Appendix C for an evaluation of fisheries and wildlife impacts and Appendix D for an evaluation on wetland impacts. This alternative will likely result in up to 3 feet of sediment "head cutting" and the channel bottom requires "hard" engineering to create the low-flow notch. Due to the extent of head cutting and the "unnatural" appearance of the channel bottom, this alternative was not further pursued.

3. High Breach Alternative

GZA conducted hydraulic and hydrologic analyses to determine the likely effect of constructing a relatively high breach at the location of the existing sluiceway, with a deep notch to allow fish migration during low flows. This was done to inundate the former impoundment more frequently for improved support of the proposed BVW. Figure 5 shows the approximate flood levels within the former impoundment during different storm events. This shows that a substantial area of the former impoundment will be periodically flooded to help sustain BVW. However, the remaining structure will likely be considered a dam as it would still retain significant volumes of water during large storm events. Also, high velocities of water passing through the narrow slot or the slot becoming clogged may ultimately prevent fish passage. A concrete structure will be required to construct the slot, which will require maintenance. The structure does not meet the Owner's goal of eliminating maintenance responsibility or the environment benefit of restoring the brook to its original state. Therefore, this alternative was not further pursued. See Appendix C for additional discussion of fisheries and wildlife impacts and Appendix E for additional discussion on wetland impacts.

4. "Natural" Breach Alternative

GZA conducted hydraulic and hydrologic analyses to determine the likely effect of constructing a more "natural" looking breach at the location of the existing sluiceway. "Soft" engineering techniques such as boulders will be used so the restoration develops a natural look and the proposed channel will have a cobble, gravel and sand bottom. A concaved bottom and strategically placed boulders (actual locations to be determined during construction) will allow fish migration upstream during low flows. This was done to approximate the width and characteristics of the natural channel immediately upstream and downstream of the existing dam, and to also keep the height of water in the impoundment to less than 4 feet during the 100-year flood. The design of this alternative will help ensure that the structure does not act as a dam under Massachusetts Dam Safety Regulations (310 CMR 10.14), but will maintain sufficient water in the impoundment area to facilitate the development of wetlands. Local sediment headcutting is expected to be approximately 1 foot deep immediately upstream of the breach. Figure 6 shows the approximate flood levels within the former impoundment during different storm events under this alternative. Figure 7 shows the proposed channel grading. This is the preferred alternative.

C. Design Goals

The design goals for the dam breach are as follows:

1. Construct the breach such that the remaining portion of the embankment will not be considered a "dam" under current state dam safety regulations.
2. Protect the existing mill foundation remnants located east and immediately downstream of the dam by placement of rip rap at a 1:1 slope to limit erosion which would otherwise impact mill foundation remnants.
3. Limit downstream sediment migration.
4. Stabilize the proposed channel through the dam breach through the use of "soft" engineering techniques.
5. Construct the breach to allow continued flow through the proposed channel during dry periods to support cold water fish migration, particularly alewive and herring.

The River Restore Triage Team Report from November 2001 is attached as Appendix F. The report indicates their support of the project, but also highlights concerns/questions that arose during the conceptual design phase, particularly with respect to environmental issues. These issues have been addressed through discussion at periodic meetings between the agencies involved in the project, and are intended to have been reflected in this EENF.