

Commonwealth of Massachusetts

Executive Office of Environmental Affairs ■ MEPA Office

ENF

Environmental Notification Form

For Office Use Only
 Executive Office of Environmental Affairs
 EOEA No.: 12780
 MEPA Analyst: Nick ZAVOLOS
 Phone: 617-626-1030

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: Repairs and Improvements to Upper and Lower Root Reservoir Dams			
Street: Reservoir Road			
Municipality: Lenox, MA	Watershed: Lenox Mountain Brook		
Universal Transverse Mercator Coordinates: 15392458.47549 N 2092258.06754 E		Latitude: 42.3666 N	
		Longitude: - 73.3275 W	
Estimated commencement date: 9/1/03		Estimated completion date: 12/15/03	
Approximate cost: \$ 2.4 – 2.7 million		Status of project design: 75 %complete	
Proponent: Town of Lenox			
Street: 6 Walker Street			
Municipality: Lenox	State: MA	Zip Code: 01240	
Name of Contact Person From Whom Copies of this ENF May Be Obtained: Mr. Christopher D. Haker			
Firm/Agency: GZA GeoEnvironmental, Inc	Street: One Edgewater Drive		
Municipality: Norwood	State: MA	Zip Code: 02062	
Phone: (781) 278-5791	Fax: (781) 278-5701	E-mail: chaker@gza.com	

- Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
 Yes No
- 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 (Specify _____ see agencies listed below _____) No

List Local or Federal Permits and Approvals
 Town of Lenox Conservation Commission Notice of Intent

Date application submitted
 4/18/02

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

- | | | |
|---------------------------------|---------------------------------------|--|
| <input type="checkbox"/> Land | <input type="checkbox"/> Rare Species | <input checked="" type="checkbox"/> Wetlands, Waterways, & Tidelands |
| <input type="checkbox"/> Water | <input type="checkbox"/> Wastewater | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Air | <input type="checkbox"/> Solid & Hazardous Waste |
| <input type="checkbox"/> ACEC | <input type="checkbox"/> Regulations | <input type="checkbox"/> Historical & Archaeological Resources |

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
LAND				<input checked="" type="checkbox"/> Order of Conditions <input type="checkbox"/> Superseding Order of Conditions <input type="checkbox"/> Chapter 91 License <input checked="" type="checkbox"/> 401 Water Quality Certification <input type="checkbox"/> MHD or MDC Access Permit <input type="checkbox"/> Water Management Act Permit <input type="checkbox"/> New Source Approval <input type="checkbox"/> DEP or MWRA Sewer Connection/Extension Permit <input checked="" type="checkbox"/> Other Permits <i>(including Legislative Approvals) – Specify:</i>
Total site acreage	33 (approx.) inc. area of both reservoirs and BVW			
New acres of land altered		0.6		
Acres of impervious area	Less than 0.5	None	Less than 0.5	
Square feet of new bordering vegetated wetlands alteration		None		
Square feet of new other wetland alteration		11,800		
Acres of new non-water dependent use of tidelands or waterways		None		
STRUCTURES				<u>Massachusetts Historical Commission Project Notification Form</u> <u>404 Individual Permit</u>
Gross square footage (spillway and gatehouse)	12,000	5,000	17,000	
Number of housing units	None	None	None	
Maximum height (in feet)	None	None	None	
TRANSPORTATION				
Vehicle trips per day	None	None	None	
Parking spaces	None	None	None	
WATER/WASTEWATER				
Gallons/day (GPD) of water use	None	None	None	
GPD water withdrawal	None	None	None	
GPD wastewater generation/treatment	None	None	None	
Length of water/sewer mains (in miles)	None	None	None	

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 (You may attach one additional page, if necessary.)

A. Project Site Description

The Upper and Lower Root Reservoirs are the primary water supply sources for the Town of Lenox. The Reservoirs are located on Reservoir Road. Below is a brief description of each dam.

The Upper Root Reservoir Dam

The Upper Root Reservoir Dam is a homogenous fill earthen embankment dam with a concrete core constructed in 1959. The dam is approximately 840 feet long, 39.5 feet high and the dam crest is 10 feet wide. The elevation of the top of the dam is 1493.5 NGVD. The dam's hydraulic height is 34 feet without flashboards. The upstream and downstream face slopes are 2.5:1 (horizontal to vertical) respectively. The dam retains approximately 242 acre-feet of water at the spillway crest. The broad-crested weir located on the left side of the dam (looking downstream) is 30 feet long and 6.5 feet below the top of dam. The spillway crest elevation is 1487 without flashboards and 1489.7 with flashboards installed (normal operating level). The spillway channel leading from the reservoir is approximately 370 feet long with a 10% slope. It is constructed of concrete with training walls approximately 6.5 feet high at the top of the spillway and 3.5 feet high at the bottom of the spillway channel. At the bottom of the channel, water is discharged into a small detention pond (see Figure 2). From the detention pond, two 36 inch diameter culverts (upstream invert elevations 1452.83 and 1452.96) convey water under Reservoir Road and into the Lower Root Reservoir (downstream invert elevations 1452.59 and 1452.76). The dam has been classified as an "intermediate" sized "high" hazard dam by the Massachusetts Department of Environmental Management (DEM) based on a storage capacity of approximately 350 acre-feet at Spillway Design Flood (SDF) elevation. The Massachusetts Department of Environmental Management ID No. for the Upper Root Reservoir Dam is 1-2-152-4. The Dam is identified by the USACE National Inventory of Dams with the ID No. MA00019.

The Lower Root Reservoir Dam

The Lower Root Reservoir Dam is an earthen dam approximately 600 feet long and 28 feet high from the invert of the

stream. The dam has a crest width of 10 feet and a hydraulic height of approximately 24 feet. The upstream and downstream face slopes are approximately 2:1 (horizontal to vertical). The elevation of the top of the dam is 1460, and the spillway crest elevation is 1456.3 without flashboards and 1457.1 with flashboards installed (normal operating level). The top of dam elevation to the right of the spillway (looking downstream) is 1458.3. The dam retains approximately 218 acre-feet of water at spillway crest elevation. The ogee-type weir is 56 feet long and 3.7 feet below the top of dam. It is located on the right side of the dam (looking downstream). The weir and the spillway channel are constructed of stone and concrete. The height of the spillway channel training walls range from approximately 9 feet at the base of the ogee to approximately 2 feet at the bottom of the concrete channel. The length of the channel is approximately 155 feet and it discharges directly into Lenox Mountain Brook. The dam has been classified as an "intermediate" sized "high" hazard dam by the Massachusetts Department of Environmental Management (DEM) based on a storage capacity of approximately 275 acre-feet at Spillway Design Flood (SDF) elevation. The Massachusetts Department of Environmental Management ID No. for the Lower Root Reservoir Dam is 1-2-152-2. The Dam is identified by the USACE National Inventory of Dams with the ID No. MA00018.

B. Proposed Work Description

To develop alternatives and cost estimates for spillway and dam improvements, GZA conducted hydrologic and hydraulic analyses to evaluate the current spillway and dam configuration. GZA concluded that the existing spillway at both the Upper and Lower Root Dams will not safely pass the Spillway Design Flood (SDF) of $\frac{1}{2}$ the Probable Maximum Flood ($\frac{1}{2}$ PMF) without overtopping the dam, at current operating levels. The SDF of $\frac{1}{2}$ PMF is mandated by Massachusetts Dam Safety Regulations 310 CMR 10.14. Therefore, the alternatives GZA considered were designed to safely pass the SDF while providing at least two feet of freeboard (distance from dam crest above the maximum reservoir level during the SDF) for wave action protection.

While the Upper and Lower Root Reservoir Dams have historically and continue to provide good water supply service, certain features of the Dams and their appurtenant structures are in need of repair and improvement, due in part to the ages of the structures. Other necessary improvements are a consequence of the state-of-the-practice technical standards required by regulatory agencies. More detailed information about the work description is provided as Appendix A.

SEQUENCE OF CONSTRUCTION

Note that under Phase 1 of this project work will be done to repair the Lower Root Reservoir gatehouse and the existing spillway. In addition, the spillway crest will be permanently raised to flashboard elevation, and a new 30-foot wide emergency spillway and access road will be constructed across the toe of the dam. The proposed work under Phase 1 does not exceed ENF thresholds. Therefore, an ENF was not required for Phase 1.

Phase 2 (2003): Upper Root Reservoir Dam

- Draw down Upper Root Reservoir levels
- Excavate Material from East Rim of Upper Root Reservoir
- Replace Existing Spillway; Raise Spillway Crest to Elevation 1489.7
- Relocate Outlet Pipe Valves to Upstream End
- Construct New Culvert on East Side of Upper Reservoir
- Raise height of Dam to Elevation 1496 and flatten downstream slope
- Construct Permanent Access Road Across Toe of Dam
- Install limited Rip Rap at Base of Spillway Channel Located in Existing Stilling Basin

Also: For Lower Root Reservoir Dam (Phase 2)

- Raise height of Lower Root Reservoir Dam to 1462 and flatten downstream slope
- Place Rip-Rap around Detention Pond Downstream of Spillway
- Place Rip-Rap around gatehouse and toe drain outlets at Toe of Dam
- Construct Permanent Access Road Across Toe of Dam