

ENGINEERING,
INC.

ENGINEERS
SURVEYORS

March 29, 2011

Dept. of Conservation and Recreation
Office of Dam Safety – Inspections Unit
180 Beaman Street
West Boylston, MA 01583

Re: Hathaway Pond Dam
Rochester, MA
State Dam ID No. 7-12-250-01
National Dam ID No. MA00368

Madam/Sir:

On Wednesday, March 16, 2011 G.A.F. Engineering, Inc. conducted an inspection of the interiors of the five (5) concrete sluiceways located at the primary spillway of the Hathaway Pond Dam. The water level of the pond had been lowered beyond the level of the concrete weirs identified in Dam Safety Order dated February 22, 2008. The downstream spillway outlets were blocked with large sand bags to prevent a tail water condition. Stop logs remained in place in the upstream face of the sluiceway. Excess water was discharged through the secondary spillway outlet and fish ladder.

The contractor on site (Marine Tech) placed four (4) trash pumps in the sluiceways in an effort to keep the sluiceways free of water in order to facilitate the inspection. The discharge capacity of the pumps was said to be in the order of magnitude of 800-1200 gallons per minute.

Essentially the floors of 3 sluiceways are eroded away to a very significant degree. The floor of sluiceway 1 is basically non-existent and contains a hole a maximum of 52 inches deep. This condition exists for the major portion of the sluiceway section. In sluiceway 2 approximately 75% of the concrete floor is gone and is eroded up to 5 feet below the normal floor level. Sluiceway 3 is missing a 3'x 5' section of floor and is under cut by approximately four feet. Sluiceway 4 has a 4'x 5' section of collapsed floor and is undermined to a significant degree.

The floor of sluiceway 5 is largely intact, however a 6"x 4" hole exists in the floor adjacent to the left most sluiceway wall. This hole was 36" deep and appeared to suggest portions of the floor are undermined. The concrete walls between sluiceway sections are all separated from the deck and or floor slab. Deteriorated concrete of the sluiceway deck, sidewalls, etc are commonplace. This inspection further supports the unsafe condition of the spillway structure.

266 MAIN ST.

WAREHAM, MA

02571

TEL 508.295.6600

FAX 508.295.6634

gaf@gaf-eng.com

Recommendations

Based on this current inspection our recommendations are as follows. .

1. Maintain reduced pond levels; remove stop logs from sluiceways 4 & 5.
2. Utilize sand bags to fill all the depressions in sluiceway sections 1,2, and 3. Place sand bags on collapsed portion of floor in sluiceway 4 to prevent flow through this section.
3. Replace stop logs in sluiceway section 1 to prevent flow through this section.

It is our opinion by implementing these recommendations water levels in the pond will be minimized to the maximum practicable degree. Placement of sand bags will provide temporary protection against undermining of the concrete slabs in the event of excess flows during significant precipitation events.

Also enclosed is a 90-day follow-up inspection report, a sketch indicating damaged sluiceway sections and a Determination of Applicability issued by the Rochester Conservation Commission. I trust the foregoing is sufficient for your immediate needs and trust that your office concurs with these recommendations. Please feel free to contact me with any questions or comments you may have.

Very Truly Yours,
G.A.F. Engineering, Inc.


William F. Madden, P.E.

WFM/lmf

Enclosures

Cc: Susan Hampson

**Commonwealth of Massachusetts
Department of Conservation and Recreation
Office of Dam Safety Poor Condition Dam Follow-up Inspection Form**

Dam Name: Hathaway Pond Dam

Dam Owner: Mrs. Susan Hampson
6385 Marlow Drive
Cumming, GA 30041

National ID Number: MA 00368

Hazards Potential: Significant

Location of Dam: Rochester, MA

Coordinate location: 41°-44''-02''
70°-47'-4''

Date of Inspection: March 16, 2011

Weather: Cloudy, drizzle/rain 40's

Consultant Inspector: G.A.F. Engineering, Inc.
266 Main Street
Wareham, Ma. 02571
William F. Madden, P.E.
1-508-295-6600

Others in Attendance at Field Inspection: Jeff Harper, G.A.F. Engineering, Inc.

ATTACHMENTS

- I. Previous Inspection date/Overall Condition:**
- A. The most recent Phase I Dam Inspection and Evaluation Report was prepared on November 18, 2007.
 - B. Phase I 6-month follow-up inspections dated 5/20/08, 5/7/09 and 2/27/10.
 - C. In general the Hathaway Pond Dam was found to be in unsafe condition.
 - D. Emergency inspection by Pare Corp on 3/16/10.
- II. Previous Inspection Deficiencies:**
- A. Previous deficiencies include:

Recommendations

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William F. Madden, P.E.

WFM/lmf

Enclosures

Cc: Susan Hampson

- Moderately heavy vegetation consisting of trees and under story shrubs on the upstream and downstream.
- Slope protection on the upstream slope is non-existent.
- Ponding was noted on the left end of the dam.
- An excavation exists on the right side of the downstream. Embankment between the primary and secondary spillways.
- Wooden wales at the left side of the primary spillway are deteriorated and require replacement.
- Cracking and spalling of concrete at top right side of down stream headwall.
- Spalling of concrete at base of right sluiceway.
- An increase in number of animal burrow holes.
- A large sinkhole exists adjacent to the spillway in the dam crest.

III. Overall Condition of Dam at Time of Follow-up Inspection:

A. State the current condition

- The current conditions have deteriorated to those, which existed during the Phase I Inspection. The dam has been determined to be structurally deficient and its condition is unsafe.

B. Have conditions changed since the previous inspection? Yes or No

Yes

IV. Comparison of Current Conditions to Condition Listed in Previous Phase I Inspection Report:

A. Have any of the deficiencies listed in the previous Phase I Inspection Report worsened?

Yes

B. If yes, list the changes.

- Cracking and spalling of concrete at the top of the right side of the downstream headwall.
- Spalling of concrete at the base of the bottom right sluiceway.
- The crack and separation of the wall from embankment at the top right headwall has worsened.

C. Are there any additional deficiencies that have been identified in the current inspection?

Yes

D. If yes, list the deficiencies and describe.

- Additional deficiencies were identified during the follow-up inspection of March 16, 2011 and are as follows:
 1. Significant spalling and cracking of the concrete at the right downstream side of the sluiceway headwall is now even

much more significant and is out of plumb at least by 6"-12".

2. A portion of the right downstream sluiceway headwall is pulling away from the earthen embankment material and exhibits potential failure of this section of headwall.
3. Sink hole developed on the dam crest to the right of the spillway.
4. The concrete floors of 4 sluiceways are missing (partially) and undermined from scour.
5. Sluiceway walls are separated from the sluiceway floors and top slap.

V. Dam Safety Orders:

- The most recent amended Dam Safety Order dated August 4, 2010 required:
 1. Follow-up inspections every 90 days.
 2. Conduct a Phase II Inspection and Investigation inclusive of hazard reclassification request.
 3. Bring the dam into compliance and complete all repair, breach or removal work no later than November 30, 2011.

VI. Maintenance:

1. **Indicate if there exists an operation and maintenance plan for the dam.**
 - There is no written Operation and Maintenance (O&M) Plan in place for this dam.
2. **Indicate if it appears the dam is being maintained.**
 - The water levels and placement of flashboards are being maintained on this dam.

VII Recommendations:

- Complete the recommended repairs and maintenance recommendations as indicated on the Phase I Report.
- Remove trees and root systems on the upstream and downstream slopes.
- Provide slope protection for the upstream slope.
- Investigate source of ponding near the left end of the dam.
- Replace wooden wales on left side of primary spillway.
- Repair toe of downstream embankment.
- Investigate, evaluate and repair spalled/cracked concrete on downstream headwall.
- Provide temporary bracing and shoring to secure portion of failing headwall.
- Lower pond levels to maximum degree.
- Fill eroded areas in sluiceways with sand bags.

VIII. Other Comments or Observations:

None other than those noted.

IX. Updated Site Sketch: Yes

X. Updated Photos: No

XI. Copy of Locus Map from Phase I Report: No

XII. Other applicable attachment: Determination of Applicability from
Rochester Conservation Commission



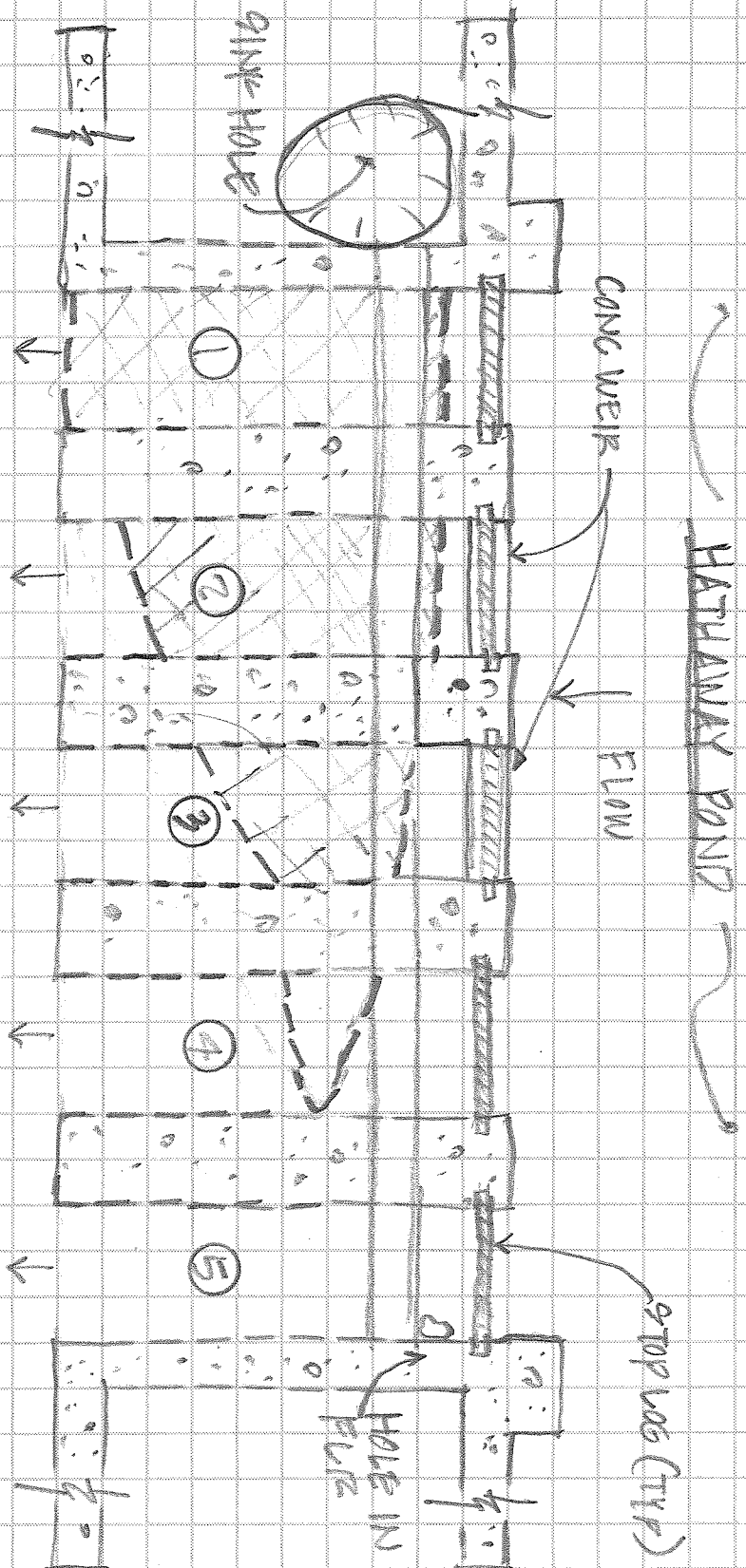
G.A.F. ENGINEERING, INC
266 Main Street
WAREHAM MASSACHUSETTS 02571
508-295-6600
Fax: 508-295-6634
gaf@gaf-eng.com

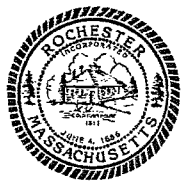
JOB HATHAWAY DAM JOB NO. 68951
SHEET NO. 1 OF 1
CALCULATED BY WFM DATE 3/28/11
CHECKED BY _____ DATE _____
SCALE NTS

KEY
① SLUICeway NO.
AREA OF MISSING/
UNEXAMINED FLOOR
STOP LOG/FUME PANE
* THE WALLS BETWEEN SLUICeways
ARE NOT IN CONTACT WITH THE
SLUICeway SLABS

PRIMARY SPILLWAY
NTS

HATHAWAY Pond Dam
ROCHESTER MA





**Rochester Conservation Commission &
Town Forest Committee**

37 Marion Road / Route 105, Rochester MA 02770

Phone: 508-763-5421 Fax: 508-763-5379

(www.townofrochestermass.com)

TO: Susan Hampson
6385 Marlow Drive
Cumming, GA 30041

CC: G.A.F. Engineering, Inc.
Attn: Bill Madden
266 Main Street
Wareham, MA 02571

FROM: Rochester Conservation Commission

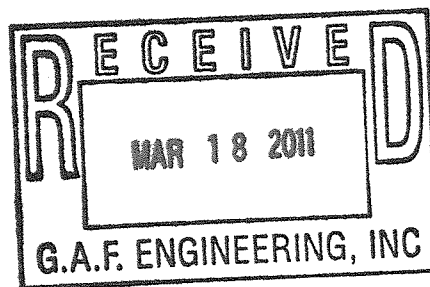
DATE: March 17, 2011

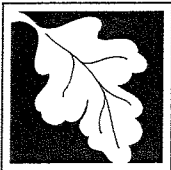
RE: Determination of Applicability

Enclosed is your original Determination of Applicability to be kept in a safe place. Please read this document thoroughly, as there are special conditions listed on page 3.

If you have any questions, please feel free to contact us at (508) 763-5421. Thank you.

Patrice LaForest, Board Administrator
Rochester Conservation Commission &
Town Forest Committee



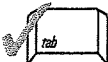


Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 2 – Determination of Applicability
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From:

Rochester
Conservation Commission

To: Applicant

Susan Hampson

Name

6385 Marlow Drive

Mailing Address

Cumming

City/Town

GA

State

30041

Zip Code

Property Owner (if different from applicant):

Name

Mailing Address

City/Town

State

Zip Code

1. Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

Hathaway Pond Dam Rochester, MA

Title

2/23/11

Date

Title

Date

Title

Date

2. Date Request Filed:

February 23, 2011

B. Determination

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

The applicant is proposing to temporarily lower the water level for Hathaway Pond Dam to perform additional inspections. The Department of Conservation and Recreation Office of Dam Safety classifies this dam as a Class II Hazard Potential Dam. Lowering of the pond level will facilitate inspection of portions of the dam currently submerged.

Project Location:

Marion Road

Street Address

8

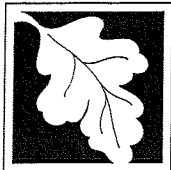
Assessors Map/Plat Number

Rochester

City/Town

22

Parcel/Lot Number



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Determination (cont.)

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

Positive Determination

Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) or Order of Resource Area Delineation (issued following submittal of Simplified Review ANRAD) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

☐ 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.

☐ 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

☐ 2b. The boundaries of resource areas listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

☐ 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.

☐ 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent or ANRAD Simplified Review (if work is limited to the Buffer Zone).

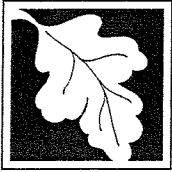
☐ 5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

Name

Ordinance or Bylaw Citation



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Determination (cont.)

- ☐ 6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act:
-

- ☐ 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.58(4)c. for more information about the scope of alternatives requirements):

- ☐ Alternatives limited to the lot on which the project is located.
- ☐ Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.
- ☐ Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.
- ☐ Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

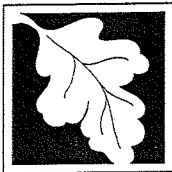
Negative Determination

Note: No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner's risk only upon notice to the Department and to the Conservation Commission. Requirements for requests for Superseding Determinations are listed at the end of this document.

- ☐ 1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.
- ☐ 2. The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.
- ☒ 3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).

Temporary drawdown shall only be approved for the limited time necessary to inspect sluiceways. The applicant shall notify the Rochester Conservation Commission office (508-763-5421 ext. 206) when the Office of Dam Safety visits the site to inspect.

- ☐ 4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.



Massachusetts Department of Environmental Protection
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B. Determination (cont.)

- ☐ 5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statutory/regulatory provisions)

- ☐ 6. The area and/or work described in the Request is not subject to review and approval by:

Name of Municipality

Pursuant to a municipal wetlands ordinance or bylaw.

Name

Ordinance or Bylaw Citation

C. Authorization

This Determination is issued to the applicant and delivered as follows:

☐ by hand delivery on

☒ by certified mail, return receipt requested on

Date

Date

3/17/11

This Determination is valid for **three years** from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

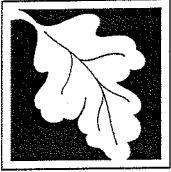
This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the appropriate DEP Regional Office (see Attachment) and the property owner (if different from the applicant).

Signatures:

R. Smith
[Signature]
John McNeal
[Signature]

Date

3/15/11



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 2 – Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

D. Appeals

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see Attachment) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.