

**NOTICE OF PUBLIC MEETING
SUDBURY CONSERVATION COMMISSION**
Monday, June 26, 2023 at 7:00 PM
Virtual Meeting

The Sudbury Conservation Commission will hold a public meeting to review the Request for Determination of Applicability filing under the Wetlands Protection Act and the Sudbury Wetlands Administration Bylaw to install beaver deceiver flow devices through a beaver dam and culvert within the 200-foot River Front Area and Land Under Waterbodies, at 325 Dutton Road, in Sudbury, MA. Lori Capone, Applicant. The meeting will be held on Monday, June 26, 2023 at 7:00 pm, via Zoom.

Copies of the application may be reviewed on the Conservation Department web page at:

<https://sudbury.ma.us/conservationcommission/meeting/conservation-commission-meeting-monday-june-26-2023/>

Please contact the Conservation Office with any questions at 978-440-5470.

SUDBURY CONSERVATION COMMISSION
6/14/2023

Request for Determination of Applicability

Hop Brook Conservation Land



Property Description: Hop Brook Conservation Land is a 93-acre property comprised of two parcels, located at 325 Dutton Road. The property contains multiple vernal pools, streams, Duck Pond, and Hop Brook and associated Bordering Vegetated Wetlands. The western portion of the property, including the location of the culvert, is within estimated and priority habitat for rare species. There is also Bordering Land Subject to Flooding associated with Hop Brook, a cold water fishery. Public trails traverse throughout the property, with low lying trails surrounding Duck Pond, a prominent feature and destination within the property.



Starting in 2022, beavers moved into Duck Pond. They built a large beaver dam under the foot bridge that runs along the eastern side of Duck Pond. This bridge is about 40 feet long, elevated about 1.5-2 feet above the normal water elevation. Beavers have built the dam along this entire 40-foot structure, up to its base, and is about 6-7 feet wide, causing substantial flooding upstream and preventing flow downstream.



The main concern that the flooding has caused is flooding trails and diverting stream flows around the obstructions which has washed out some areas. We have installed and extended existing bog bridges to bridge these newly formed wet sections, in an effort to still allow safe public passage, and reduce impacts on the integrity of the trail system. This has been found to not be sustainable as the water continues to rise.

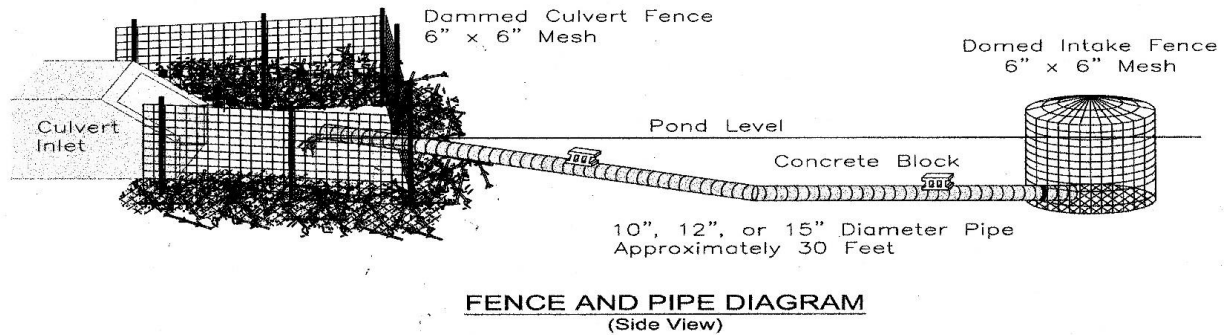
In an effort to find a practical long-term solution to the problem, which allows the beavers to remain, while providing safe access to the property, we engaged Beaver Solutions to assess the situation. After evaluating the property and the watershed, Beaver Solutions has provided a Proposal to install a flow device through the beaver dam which will allow the water levels to be maintained at an elevation 1 foot below existing conditions. They have also designed a beaver deceiver device for the downstream culvert to prevent the beaver from being able to continue to block this culvert. We had tried to manually remove the debris but found that the beavers block this back up every night.



Proposed Work:

Beaver Solutions proposing two different devices for the two different locations.

For the culvert, they are proposing to install beaver excusionary fencing.

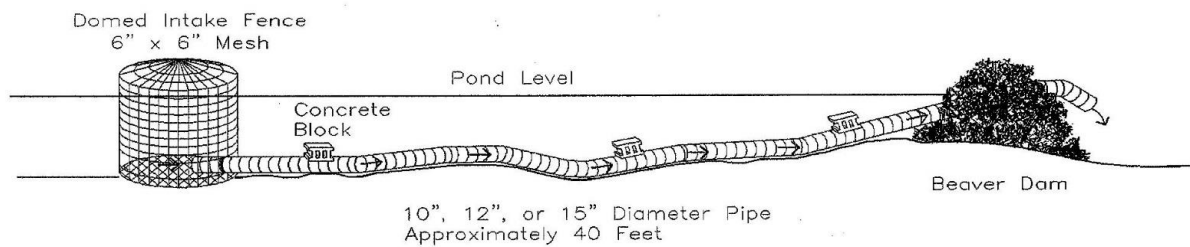


Fencing is installed around the inlet of the culvert to prevent beaver from being able to fill the culvert with debris. A flexible pipe is then installed within the fenced area at the level that you want to maintain the pond level at. The pipe extends upstream of the culvert and a cage is placed around the inlet to prevent the beaver from being able to block the pipe. This system maintains a steady flow of water out of the pond by eliminating the beavers being able to hear or feel the flow of water. The beaver will still attempt to build up around the fence at the culvert, but this will not impact the water flow. See picture of an example of this type of installation.



For the beaver dam, a pond leveler device is proposed to be installed through the dam. Beaver Solutions will carefully dismanttle a portion of the dam to be able to install the pipe. Debris will then be carefully put back over the pipe. A similar flexible pipe described for the culvert above will be extended upstream of the dam and a cage will be installed around the inlet of the pipe to prevent beaver from blocking the pipe. The outlet of the pipe is positioned underwater downgradient of the dam so that the beaver do not

hear or feel the water flow through the dam. Both of these structures include a maintenance agreement for Beaver Solutions to monitor and fix as needed.



We determined in the field that a 1-foot drop in water level would provide sufficient habitat for the beavers while lowering the water level enough so that the trails are not impacted by flooding. If a pond is lowered too much, it can trigger the beaver to move downstream and clog an area that may not be as easily accessed as these two locations. Fortunately, in our situation, these two locations are the only areas where the beavers can easily raise the water level without much effort, so these structures will help us to be able maintain the conservation land for both human and wildlife needs. See picture below of this type of installation.



All work will be completed by hand. The only equipment that they need is a pick-up truck to bring materials into the site. The wide cart roads at Hop Brook provide adequate access close to both locations without any additional vegetation or other alteration of the site. I would also like to install signage to inform the public about these structures and use it as an education tool for others that may have beaver issues on their private lands.

Site Location





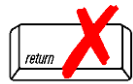
WPA Form 1- Request for Determination of Applicability

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.



1. Applicant:

Lori Capone _____ caponel@sudbury.ma.us _____
 Name E-Mail Address
 275 Old Lancaster Road _____
 Mailing Address
 Sudbury _____ MA _____ 01776 _____
 City/Town State Zip Code
 978-440-5470 _____
 Phone Number Fax Number (if applicable)

2. Representative (if any):

 Firm

 Contact Name E-Mail Address

 Mailing Address

 City/Town State Zip Code

 Phone Number Fax Number (if applicable)

B. Determinations

1. I request the Sudbury _____ make the following determination(s). Check any that apply:
 Conservation Commission

- a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Sudbury _____
 Name of Municipality

- e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



WPA Form 1- Request for Determination of Applicability

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

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- Single family house on a lot recorded on or before 8/1/96
- Single family house on a lot recorded after 8/1/96
- Expansion of an existing structure on a lot recorded after 8/1/96
- Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- New agriculture or aquaculture project
- Public project where funds were appropriated prior to 8/7/96
- Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- Residential subdivision; institutional, industrial, or commercial project
- Municipal project
- District, county, state, or federal government project
- Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)



WPA Form 1- Request for Determination of Applicability

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

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

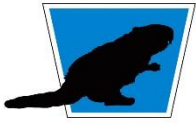
Town of Sudbury Conservation Commission	
Name	
275 Old Lancaster Road	
Mailing Address	
Sudbury	
City/Town	
MA	01776
State	Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

	June 14, 2023
Signature of Applicant	Date

_____	_____
Signature of Representative (if any)	Date

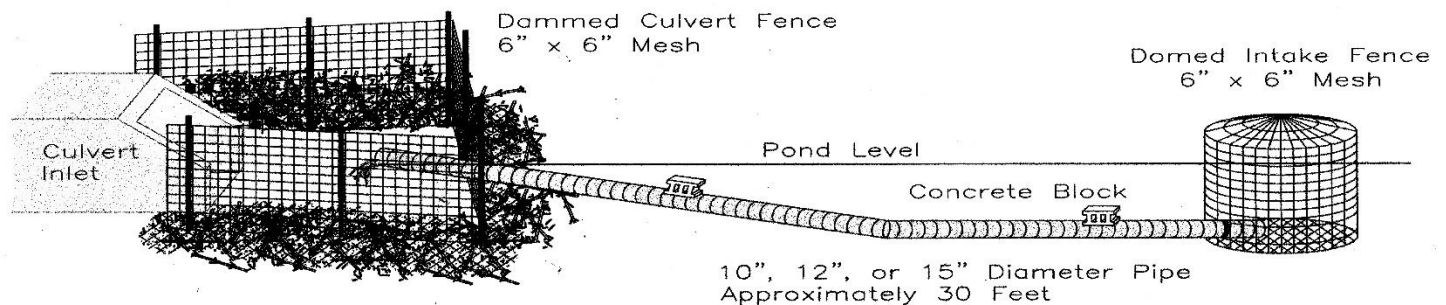


BEAVER
SOLUTIONS

Fence and Pipe Flow Device

A Fence and Pipe flow device is a very effective method to protect culverts or spillways in manmade dams from beaver damming. A Flexible Pond Leveler™ pipe maintains a steady flow of water, while an exclusion fence keeps all beaver damming away from the culvert or spillway. See diagram.

Beaver damming on the culvert fence does not raise the water level due to the permanent leak created by the pond leveler pipe. The pipe system controls the pond at a safe level and prevents flooding damage to the road or manmade dam, while the fence ensures the culvert remains completely open.



FENCE AND PIPE DIAGRAM
(Side View)

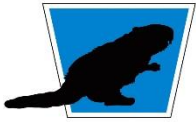
The pipe outlet elevation determines the pond level. This end of the pipe can be adjusted up or down if a higher or lower pond level is desired. Water will continuously flow from the pipe outlet unless the pond level drops below the peak of the pipe.

The domed intake fence prevents beavers from hearing or feeling the flow of water into the pipe. Therefore they ignore the intake end of the pipe, and only dam on the culvert fence where they hear the water flowing.

Unlike road culverts, Flexible Pond Leveler™ pipes do not need to be sized to handle catastrophic storm events because heavy storm runoff will simply flow over the top of the dam on the fence and through the unblocked culvert or spillway. Some mild pond fluctuations are possible following very wet periods, but the pond will be controlled at a safe level.

With routine maintenance this flow device will remain effective for many years. Since our customer's satisfaction and our reputation are very important to us, we offer an optional low cost Maintenance Plan which includes our "Worry-Free Guarantee" at no additional cost. See attached. However, if you prefer to do the maintenance, we are always available to answer any questions at no charge because we are committed to the success of our flow devices, your satisfaction and our good reputation.

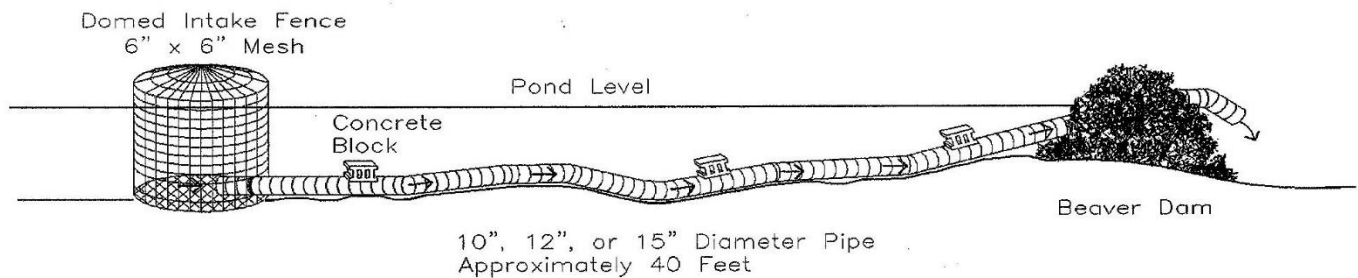
*May be reproduced courtesy of Mike Callahan, Owner
Beaver Solutions LLC, "Working With Nature"*



BEAVER
SOLUTIONS

Flexible Pond Leveler™

When flooding from a beaver dam threatens human property, health or safety, a Beaver Solutions Flexible Pond Leveler™ pipe system can be a very effective solution. This flow device will create a permanent leak through the beaver dam that the beavers cannot stop. This eliminates the need for repeated trapping despite the presence of beavers.



In order for these pipe systems to be effective, they must be designed so that beavers cannot detect the flow of water into the pipe. The Flexible Pond Leveler™ does this by surrounding the submerged intake of the pipe with a large cylinder of fencing which is placed in as deep water as possible. This prevents the beavers from detecting the flow of water into the pipe. As a result, the beavers do not try to clog the pipe, and a safe water level can be maintained.

The height of the pipe in the dam determines the pond level (see diagram). Water will flow through the pipe unless the pond level drops below the peak of the pipe. The pipe is set in the dam at the desired pond level, and can be adjusted up or down if necessary.

Unlike road culverts, Flexible Pond Leveler™ pipes do not need to be sized to handle catastrophic storm events because heavy storm runoff will simply flow over the top of the dam. Following the storm the pipe will return the pond to the normal level.

When installing a pipe system it is very important to lower a pond only enough to protect human interests. The more a pond is lowered the more likely it is beavers will build a new dam to render the pipe ineffective. Lowering a beaver pond by up to one vertical foot is generally not a problem.

Whenever a freestanding dam must be lowered by two feet or more, a single round of trapping may be needed prior to installing the pipe. Following trapping new beavers relocating into the area are more likely to tolerate the smaller pond without new problematic dam building because they do not have the memory of the larger pond.

With routine maintenance this flow device will remain effective for many years. Since our customer's satisfaction and our reputation are very important to us, we offer an optional low cost Maintenance Plan which includes our "Worry-Free Guarantee" at no additional cost. However, if you prefer to do the maintenance, we are always available to answer any questions at no charge because we are committed to long term success, your satisfaction and our good reputation.

*May be reproduced courtesy of Mike Callahan, Owner
Beaver Solutions LLC, "Working With Nature"*