



BEAVER SOLUTIONS

14 Mountain Rd, Southampton, MA 01073

Phone: (413) 695-0484

Website: www.beaversolutions.com

Municipal Beaver Management Plan Town of Ayer

by Michael Callahan, Owner

Beaver Solutions LLC

June 15, 2013

Foreword

Thank you for the opportunity to develop a Comprehensive Beaver Management Plan (CBMP) for the Town of Ayer, and to provide the residents of your town with the most effective and innovative beaver management plan available.

Introduction

Since 1998 Beaver Solutions™ has successfully resolved beaver flooding conflicts with flow devices at over 900 beaver conflict sites. Flow devices are the most cost-effective, environmentally friendly, long-term, and humane solution for most beaver conflicts. We also provide beaver trapping for areas where flow devices are not feasible. Our multi-faceted approach makes Beaver Solutions™ uniquely qualified to recommend the best solution for any beaver-related problem, and provide you with the best comprehensive Municipal Beaver Management Plan (MBMP) available.

Since beaver damming can quickly cause serious public health and safety issues, a MBMP allows for prompt intervention of immediate threats, but also for prioritization for less immediate and potential beaver problems. This comprehensive assessment of the beaver issues prevents crisis management and budget resources in a logical and efficient manner.

Beaver Solutions™ specializes in resolving human/beaver conflicts. Our highly successful flow devices usually offer the most cost-effective and long-lasting solution to beaver-related flooding problems. Our satisfied customers include state and municipal highway departments, water and conservation departments, various State and Federal agencies, public utilities, railroads, environmental groups, private businesses, property management groups, homeowners, and others.

Types of Flow Devices

There are three basic types of flow devices.

1. Culvert Protective Fence

Road culverts are common targets of beaver damming. To a beaver a culvert through a road bed probably appears to be a hole in a dam. With only a relatively small amount of damming the road bed becomes a large dam. The resulting impoundment of water can cause serious health and safety issues and can cause tremendous infrastructure damage.

Culvert Protective Fences prevent beavers from damming culverts to maintain road integrity and safety. When properly designed and installed Culvert Protective Fences are 95% effective at maintaining full culvert water flow despite the presence of beavers. See attachment.

2. Flexible Pond Leveler

A Flexible Pond Leveler™ is a specially designed pipe system which is installed through a beaver dam to control the water level in a beaver pond. See attachment. It is designed so that beavers cannot detect the flow of water into the pipe and therefore will not try to block it. The pipe is installed through the beaver dam at the desired pond level. It creates a permanent leak in the beaver dam to control the pond at a safe level while allowing the beavers to stay which eliminates the need for trapping.

3. Culvert Protective Fence and Pipe

A Culvert Protective Fence and Pipe flow device allows the beavers to dam on an exclusion fence to create a small pond in front of the culvert, but prevents them from raising the pond to a level that will threaten human interests. See attachment. The fence and Pipe flow device is usually the best method to protect road culverts when a water depth of several feet is tolerable upstream of the culvert. This flow device is also very effective to protect spillways in manmade dams.

Flow Device Discussion

When properly designed and installed these three types of flow devices offer long term protection from beaver damming activity, thereby protecting roads, infrastructure, property, human health and safety, and result in significant savings of time and money for years to come. They are also the most humane and environmentally friendly solution to beaver problems. See our website at www.beaversolutions.com for photos and studies of our success rates with these devices.

Effective flow devices are designed to require minimal maintenance. However, the little maintenance that is required is very important. Culvert Protective Fences should be

cleared of any floated leaves and sticks quarterly so that beavers will not dam against the fence. Pond Leveler pipes should be inspected annually in the spring for beaver-related or winter ice damage and the pipes adjusted if necessary to ensure proper pond levels. Usually no other maintenance is needed throughout the year. Fence and Pipe flow devices on culverts generally only need to be checked twice annually to ensure the culvert remains completely open and the flow device remains in good condition. When this routine maintenance is performed as recommended a flow device will remain effective for many years.

Trapping

Beaver trapping remains a legal and sometimes necessary tool of beaver management.

In MA the beaver trapping season was expanded in 2000 and now runs from November 1st through April 15th annually. During beaver trapping season any MA licensed trapper can trap using live catch traps and no permit is needed.

From April 16th through October 31st beaver trapping can only be done when there is a threat to human health, safety of property with an Emergency permit issued by the local Board of Health. See Appendix. Once the Board of Health issues their 10 Day Emergency beaver permit live catch traps or kill traps such as a Conibear trap can only be used by a MA licensed trapper. Up to two ten day extensions can be issued if the problem is not resolved within the first 10 days.

There are occasional sites where I will recommend trapping rather than flow devices because flow devices are not feasible everywhere. In my experience about 25 % of beaver conflicts require trapping. Trapping is usually required where even a small beaver pond poses a threat to human health, safety or property, and there is an inability to tolerate any ponding. These areas can be referred to as “No Tolerance Zones”. This means that trapping will need to be utilized anytime that beavers build dams in that area.

Unfortunately though, trapping is typically a short term solution. In our experience, new beavers will be attracted to the beaver-free habitat and new beavers will generally relocate to the trapped area within 6 months to two years of trapping. Therefore trapping tends to be a short term solution and needs to be repeated indefinitely.

Beaver trapping also has other drawbacks, such as the required killing of the animals (it is illegal to relocate beavers) and the loss of the benefits of the beaver created wetlands. See Appendix. For these reasons flow devices are preferable whenever feasible.

I will also sometimes recommend beaver trapping if the water level needs to be lowered 2 feet or more since most beavers will not tolerate this amount of drop in their pond level without new dam building. In these cases the installation of a flow device following trapping can be a long term solution because new beavers relocating here will not have a memory of the higher water level and often tolerate smaller ponds. This underscores the value of intervening early before the pond level needs to be dropped 2 feet or more.

The Natural Beaver Cycle

When left unaffected by humans, there is a natural cycle with beavers. Since beavers need deciduous woody vegetation for food they will choose areas along streams with an adequate food supply to build their dams. They will stay in that area until their food supply is depleted, which often takes 10 or more years. Once the food supply is exhausted the beavers will relocate to another area where there is a food supply that can sustain them.

Once beavers relocate, the dams they built are no longer maintained by them. These mud and stick structures deteriorate over time, develop leaks, and eventually the beaver ponds drain out returning the area to its pre-beaver state of a marsh or stream.

Grasses and bushes will reclaim the drained pond area. This is followed by the growth of new woody vegetation. After a period of 10 to 15 years the woody vegetation has matured to the point where new beavers will find the area attractive again. At this time new beavers will find the habitat favorable and build a dam to restore the beaver pond. Then the natural beaver cycle starts anew.

Until man intervened and nearly drove the beaver to extinction with unregulated trapping hundreds of years ago, this cycle of habitat successions had continued for millennia. Over that vast expanse of time, flora and fauna adapted to take advantage of the environmental changes caused by beavers.

This natural beaver cycle became interwoven with, and an essential element of the web of life for a myriad of species in North America. Due to this fact biologists identified beavers as a Keystone species. A healthy population of a Keystone species is critically important for a robust and healthy ecosystem. Therefore, the presence of beavers and the dams they create on our landscape are critical for protecting biodiversity.

Other wetland benefits of beaver ponds include: recharging ground aquifers, decreasing downstream flooding, increasing stream flows during droughts, detoxifying runoff pesticides and fertilizers, improving downstream water quality, decreasing erosion, improving fisheries, and providing open space for recreation, etc. See attachment entitled "*What Good Are Beavers?*" further detailing the myriad benefits of beaver ponds.

Conflict Site Assessments

The following site assessments were performed on May 23, 2013 from a list of known beaver conflict sites compiled by Ayer Public Works, Conservation and other town officials. All sites inspected with Mark Wetzel, PWD Superintendent and Doug Jaspersen, PWD Foreman.

Beaver Conflict Sites

1. Rosewood Avenue Dam
2. Rail Trail Dams
3. Shaker Road Culvert
4. Shaker Mill Pond Spillway
5. Robbins Road Dam
6. Rod and Gun Club - Utility ROW Dam
7. Long Pond Spillway
8. Barnum Road Dam

Site Assessments and Recommendations

1. Rosewood Avenue Dam

At the end of Rosewood Avenue there is a beaver dam which has existed for many years. Extensive trapping has been utilized herein the past. The current beaver dam raising the upstream water level to a depth of up to 5 feet. Beavers are actively maintaining this dam as evidenced by fresh mud and sticks. Smaller downstream dams are also present.



The primary issues here are the approximately 6 sewer line manhole covers which are flooded and need to be above water level. This flooding is causing access, inflow and infiltration issues. In order to do this the water needs to be kept at a much lower level. A second issue is the flooding of an upstream rail trail culvert. See below.

Plan: The Department of Public Works will determine exactly how much lower the water level needs to be in order to protect their sewer line. If the beaver dam needs to be lowered by 2 – 3 feet I would recommend trapping these beavers, followed by the installation of a Flexible Pond Leveler pipe to prevent new beavers relocating to this area from raising the dam to dangerous levels again.

Any pipe installed to control the size of this pond must have sufficient capacity to carry the entire stream flow. Based on the size of the watershed and my estimate of the seasonal stream flows I am recommending the installation of one twelve inch diameter Flexible Pond Leveler™ pipe.

This pipe system would maintain a continuous water flow through the beaver dam, and it could lower the pond level by about 2 – 3 feet and keep it at the lower level. Note that in the absence of beavers the pond may drain more, but when beavers return and repair the dam the water would rise only to the level we set the pipe at.

While the pipe system can maintain the water level at this dam, it cannot prevent beavers from building dams upstream or downstream of this pond. These secondary ponds are usually smaller but sometimes can be problematic and need to be piped. The more we lower the water level in the primary pond, the greater the risk of new problematic dams, so we always recommend that beaver ponds be lowered only enough to protect human interests.

2. Rail Trail Dams

Approximately 0.5 miles upstream is a stone box culvert under the Rail Trail. The Town had to repair the trail following damage from a sink hole. On the steep embankments of the old rail bed there is evidence of other sink holes. This situation appears to be dynamic and further repairs to the trail may be needed in the future if the sink holes worsen.

Currently the culvert is completely submerged due to the Rosewood Avenue beaver dam, however the culvert appears to be unblocked as no damming materials are present at the inlet and the water level appears equal on each side of the rail bed. The equal but elevated water level is probably contributing to the sink holes. Lowering the water level at that dam by 2 – 3 feet should benefit the rail bed.

Unfortunately, lowering the water level in the culvert may encourage the beavers to dam inside this culvert. Once the water level is dropped downstream, this culvert should be reinspected as it will probably require the installation of a Culvert Protective flow device to protect it from the resident beavers.

These beavers have already built two beaver dams immediately upstream of the rail trail culvert. See below. These dams are impounding a large area and have flooding electric transmission structures. The dam closest to the culvert is raising the water level approximately 10 inches, and the larger upstream dam is raising the water level by approximately an additional 2 feet.



- Plan :
1. Install a culvert protective fence on the Rail Trail Culvert once pond level drops.
 2. If the electric company desires, both of these dams could be kept from getting higher with Flexible Pond Leveler pipes.
 3. If the electric company needs the water level dropped more than 1 foot, this may become a “No Tolerance Zone” making trapping necessary here.

3. Shaker Road Culvert

The Shaker Road beaver issue has also been a problem on and off for many years. When beavers dam the opening in the causeway separating the old Mill Ponds it raises the water level as threatens flooding of the historic residence on the corner of Shaker Road. A new culvert is planned for this site.

Plan: Once the culvert is replaced it should be protected with a culvert protective fence and Pipe flow device. Based upon my on-site observations and calculation of the watershed to this point I am recommending the use of two 15 inch diameter Flexible Pond Leveler pipes through the culvert protective fence. If the new culvert can be installed with a vertical headwall it would make it easier to design and install the culvert protective fence.

4. Shaker Mill Pond Spillway

The historic Shaker Mill Pond dam has also been a site of chronic beaver damming. Currently the beavers have dammed the large stone spillway in the dam raising the water level over 2 feet. Water is flowing around and into the spillway. The pond is very deep. This dam is privately owned but owner permission was obtained by Mark Wetzell for access to the dam. Unfortunately access to the dam is obstructed by large amounts of poison ivy. This site is immediately downstream of the Shaker Road culvert site.

Plan: The spillway can be protected with the same type of Fence and Pipe flow device as I recommended for the Shaker Road site. The fence design would be need to be customized specifically for this spillway however. The dam would need to be lowered so large flows again flow through the spillway rather than over the top of the dam. The pipes would be installed low in the spillway top return the pond level close to the original dam design level.

5. Robbins Road Dam

Approximately 0.5 miles downstream of Shaker Mill Pond different beavers have built a dam across Bennett's Brook behind 20 Robbins Road. Residents between 2 and 20 Robbins Road are experiencing higher water levels than existed before the beaver dam. Fortunately all the homes are on high ground and are in no danger of being flooded. The primary issue appears to be that many trees are flooded and will die due to the high water level.

The dam extends approximately 250 feet across the floodplain. Access to inspect the entire dam is obstructed by dense bushy vegetation. Nevertheless, fresh mud and sticks on the dam are proof that beavers are currently living here and may raise the dam level even more over time.

Plan: Bennett's Brook has a heavy flow and as we observed upstream would require two 15 inch diameter pipes to adequately control the water level. Unfortunately, at this site the impounded water is too shallow for these pipes to remain undetected by the resident beavers, so I do not recommend them here. In addition, even if the dam could be effectively piped, the topography of the area is such that the beavers could build new dam(s) immediately downstream of the piped dam and effectively render the pipes useless.

Residents should use inexpensive and easy to install wire mesh fencing to protect any of their trees that they do not want beavers to chew down. Not only will this protect valued trees but it reduces the available beaver food supply making the area less appealing for beavers to live.

If the potential tree loss from flooding cannot be tolerated by the residents then I would classify the area from 2 – 20 Robbins Road as a "No Tolerance Zone" for beavers. Any beavers building dams in this area will need to be trapped and the dams breached in order to maintain the historic water level.

6. Rod and Gun Club - Utility ROW Dam

An extremely tall beaver dam has been rebuilt north of Erskine Drive in a public utility electric corridor. The dam is 5 feet tall and is impounding an impressive wetland which can be viewed and accessed from a long dirt road starting at the Ayer Rod and Gun Club. In the past this large dam spontaneously breached and washed out Oak Ridge Drive. The concern is that this huge water impoundment could once again be suddenly released posing a danger to human health, safety and property downstream.

The dam is currently in good repair and the fresh mud and sticks on the dam indicate active beaver maintenance of the dam. There is a well-worn path by beavers over the top of dam. Since water is impounded on the downstream side of the dam, it is clear that they are maintaining another dam further downstream.

Strictly speaking since this dam is being maintained by the beavers, it is at low risk for spontaneously breaching and causing catastrophic damage. Nevertheless, the risk is not zero. Since this beaver impoundment is on high ground and contains millions of gallons of water it may be prudent to reduce the quantity of stored water just in case it were to be suddenly released again. The challenge would be balancing the benefits of reduced flooding risk with the harm to the ecosystem and aquifer by reducing the water storage capacity of the dam.

Note, due to huge size of the dam being 5 feet tall it would be possible to effectively maintain this pond at a smaller size with a Flexible Pond Leveler pipe system. The pipe system could lower the pond by up to 2 vertical feet.

Plan:

1. Public safety and conservation town officials should meet to discuss balancing the public safety and environmental effects of reducing the size of this beaver pond.
2. Once a decision is made regarding the desired water level the Flexible Pond Leveler could be installed. Based upon the watershed size a 10 inch diameter pipe would likely be adequate, but in order to reduce pond level fluctuations during wet periods I recommend installing a 12 inch diameter pipe set at the level desired by the town.
3. A long term monitoring plan should be initiated for this site to promptly determine if the beavers stop maintaining the dam. If beaver dam maintenance activity ceases then the dam becomes a higher risk for a spontaneous breach. At that point the dam could be manually breached in a safe manner to eliminate a threat to residents and minimize the negative ecological impacts.

7. Long Pond Spillway

Beavers are actively damming the manmade concrete spillway under the trail bridge at the outlet of Long Pond. At the time of our inspection the beaver dam about one foot high. This spillway has been cleared of beaver damming materials in the past but they simply rebuild the dam. There is a concern about downstream flooding damage from a dam blowout. There is a culvert downstream that has blown out in the past.



Plan: This manmade dam would be an ideal spot for a flow device if the water level were deeper. Nevertheless, there would be just enough water depth for a Pond Leveler pipe to be effective when combined with a Spillway Protective Fence. The watershed size dictates the use of a 15” dia. pipe.

8. Barnum Road Dam

There is an active beaver dam on Cold Springs Brook approximately 25 feet upstream of the Barnum Road bridge near the rotary. There is a concern that this dam can flood upstream private property and a dam breach could result in downstream flooding.

The dam is being actively maintained. There were large amounts of new sticks added to the dam. Due to high water flow there was not a lot of mud sealing leaks in the dam. The dam was raising the water level approximately 18 inches and the water depth upstream of the dam was over 6 feet. There is a large active beaver lodge 20 feet to the right of the beaver dam as you look from the bridge.

Plan: This dam is not in danger of a catastrophic breach, and even if it did the bridge would not be affected and there is a large water body immediately downstream to dissipate the incoming water. While the water depth is adequate for Pond Leveler pipes, I recommend simple monitoring and no intervention unless upstream flooding becomes problematic.

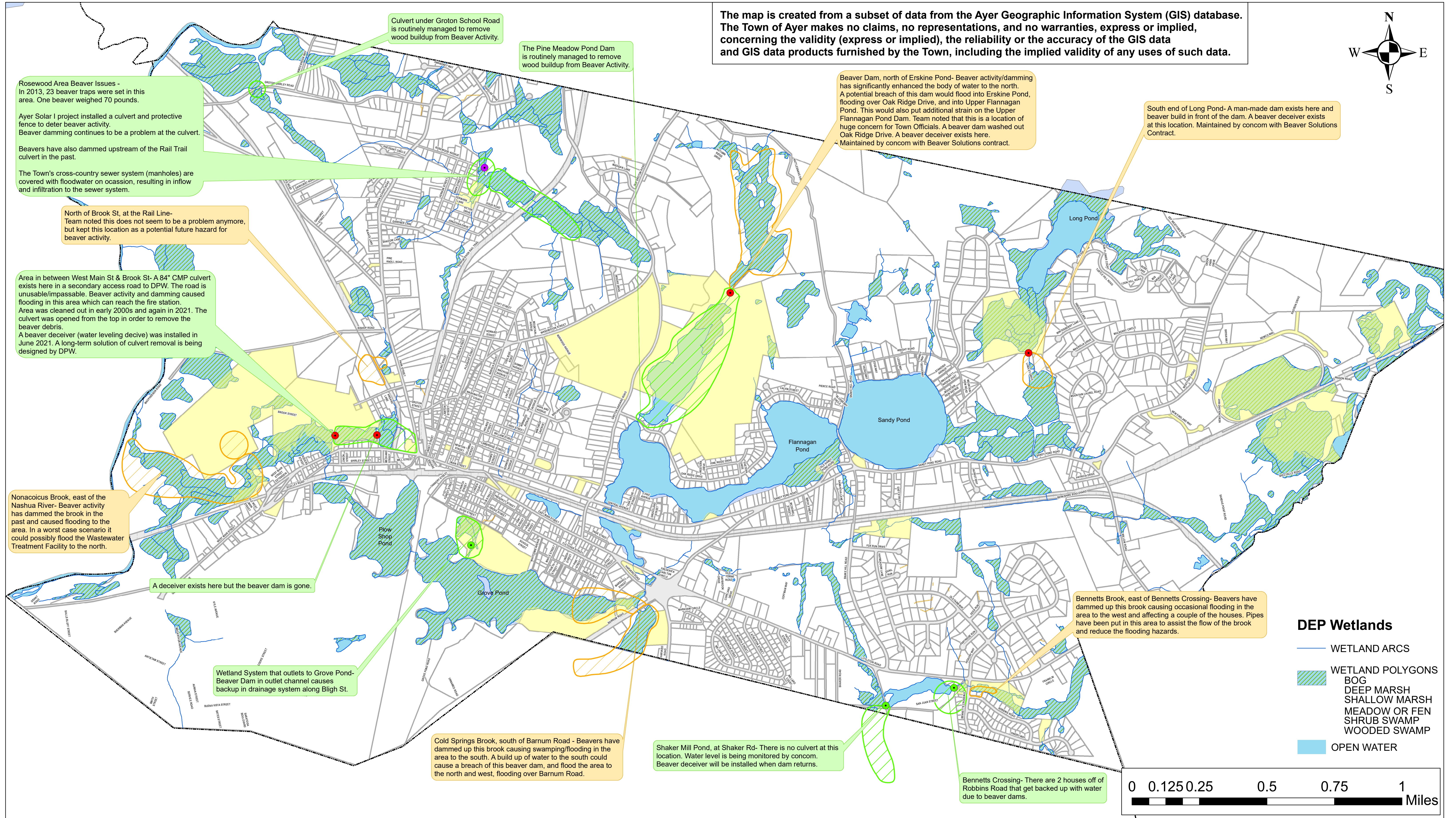
Thank you again for the opportunity to assess these beaver conflicts sites and create a comprehensive Municipal Beaver Management Plan for the Town of Ayer. Please contact me at any time if you have any questions or concerns or would like Beaver Solutions to implement any of the beaver management interventions recommended in this plan. Thank you.

Respectfully submitted,

Michael Callahan, Owner
Beaver Solutions LLC
"Working With Nature"

Attachments

- 1. Ayer beaver conflict map**
- 2. Flexible Pond Leveler Info Sheet**
- 3. Keystone Culvert Protective fence Info Sheet**
- 4. Fence and Pipe Info Sheet**
- 5. Beaver Solutions Flow Device Maintenance Guarantee**
- 6. “What Good Are Beavers?” Info Sheet**



**TOWN OF AYER, MASSACHUSETTS
LOCAL BEAVER RELATED HAZARDS**

August 2021



Legend

- Local Hazards
 - Current Beaver Issue
 - Historic Beaver Issue
- Town Owned Parcels
 - Owner: Town of Ayer
- Local Hazards
 - Beaver Dam
 - Beaver Fence
 - Beaver Deceiver

Beaver Management Plan Holliston Conservation Commission

Introduction

In the past, beaver were trapped to the point where they were nearly extinct in Massachusetts. It is only in recent years that this animal has begun to return. Because of the density of human development in this area and the propensity of beaver for altering their environment, it is inevitable that there will be conflicts between us. The Holliston Conservation Commission, working with the Board of Health has already issued several emergency permits for beaver management due to threats to public safety. It is the purpose of this management plan to reduce or eliminate the need to deal with beaver conflicts on an emergency basis.

Background

Current DEP Guidelines for beaver management mainly deal with emergency situations. If there is a threat to public health or safety, anyone can apply to the Board of Health for an emergency permit to alleviate the immediate threat. If the work involves activities under Conservation Commission jurisdiction, such as dam breaching or the installation of pond levelers, an emergency permit must also be obtained from the Conservation Commission. While the Conservation Commission should not second guess the Board of Health, it is the Commission's responsibility to determine the exact nature of the threat and determine the best solution to alleviate the threat while protecting the wetland resource area as much as possible.

An emergency permit is valid for 10 days with the option to extend for two (2) further 10 day periods. Trapping using non-lethal box or cage-type traps does not require a permit during the trapping season (currently November 1 through April 15) and requires only a permit from the Board of Health during the off season. Any alternations beyond those necessary to alleviate the immediate threat require the filing of a Notice of Intent. Any non-emergency or long-term management proposals are subject to the approval of the Division of Fish and Wildlife (DFW) and the Conservation Commission (if work alters a wetland resource area).

Policy

The Conservation Commission is responsible for the protection of wetlands and wildlife under both the Wetlands Protection Act and Holliston Bylaw Article XXX. As such, the Commission requires the use of non-lethal methods of beaver control except where such methods are proven to be ineffective. A database will be kept showing areas of known beaver conflicts and the methods of control proven effective. As this database grows, the Conservation Commission hopes to be able to create a three-tiered management overlay: areas with no action required (Category 1), areas where non-lethal methods are effective (Category 2), and no-tolerance areas (Category 3).

Areas where the topography is such that a beaver dam could never threaten public health or safety, or areas where a beaver dam has clearly been abandoned before creating a threat to public health or safety should be considered Category 1 areas. An example of such an area would be the beaver dam north of Fiske St on Bogastow Brook. In a case where there is no potential threat to public safety, but there is a threat or potential threat to a rare or endangered species, the Conservation Commission may consider the location a Category 2 or Category 3.

Areas where the topography is such that there is or could be a threat to public health and safety, but where a pond leveler or similar device could be effective would be considered a Category 2. The dam just south of Fisher St on Hopping Brook would qualify as a Category 2.

Areas where the topography is such that there is or could be a threat to public health but where non-lethal control methods are ineffective or where the presence of beavers poses a threat to public health regardless of water level, such as in a public water supply, would be considered Category 3. Two examples of this would be the area near the Avery Dennison facility on Chicken Brook where the hydrologic head at the dam was too small for a pond leveler to be effective and the area between Fisk and Central Streets on Bogastow Brook where the impoundment reached within 200 feet of a Town Well, creating the potential for contamination by *Cryptosporidium* or *Giardii*.

In the case of a Category 3 location, the Commission will authorize the trapping of beavers and the permanent breaching of a dam on a non-emergency basis so long as certain conditions are met. Any dam breaching must be done incrementally to avoid downstream flooding and excessive erosion. Trappers must use non-lethal box or cage-type traps and beaver must be killed humanely i.e. with a bullet. The Conservation Commission may also require habitat management as a long term solution in a Category 3 area. Habitat management includes, but is not limited to: fencing trees, planting vegetation that is not a preferred species, and removing vegetation that is highly desirable to beavers. It is considered the property owner's responsibility to maintain such management practices except in situations where the Town has specifically accepted responsibility for beaver management.

This management plan does not supersede Article XXX regulations or GL c. 131, s. 80A. All determinations and actions by the Town must comply with the requirements set out in the above laws. Several guidance documents are available online at: <http://www.mass.gov/dep/water/laws/policies.htm> under the Wetlands Guidance section.

In order to manage the beaver problems in town, the City of Rockville is proposing a Comprehensive Beaver Management Plan. Rather than using crisis management for each new beaver problem, a Comprehensive Beaver Management Plan will allow the City to evaluate and prioritize current and potential beaver conflict sites in the city. This plan will prioritize conflict sites, resolution and establish costs for prevention and mitigation of beaver problems.

The Comprehensive Beaver Management Plan includes:

- List all current beaver conflict sites
- Identify any potential beaver conflict sites
- Evaluate each conflict site
- Develop specific recommendations for each site
- Submit written cost estimates for each site
- Prioritize conflict site interventions

Plan Goals

- Maintain beaver populations compatible with available habitat
- Minimize beaver complaints and property damage caused by beaver
- Manage beaver for their aesthetic, economic, consumptive and ecological wetland values.
- Allow a sustainable public harvest of beaver, to control the beaver

Beaver Problems

The beaver affects the environment, including:

- Plant succession
- Tree growth
- Soil building
- Ground water recharge
- Erosion control
- Improve water quality
- Tree destruction
- Flooding properties
- Changing hydraulics of storm drain systems
- Impact sanitary sewers
- Clog storm water management structures
- Create ponds
- Controls storm water velocity and loads
- General nuisance

In the Town of Ayer, 22.6 miles of streams hold a large area of mature forest limited to stream valleys, which are natural habitat for the beaver. It is estimated that about 25 beavers may exist within our city.

II. POLICY

The City of Rockville will practice an attitude of acceptance of, and tolerance for beaver activity as part of the City's natural environment and will foster this attitude among the public through education. Conflicts arise when beaver activity impacts public areas, public health and safety, private property, or public infrastructure. The significance of the impact will determine what resolution action, if any, will be taken to reduce or eliminate conflict. Generally, where efforts are made to reduce conflict with wildlife, the most effective methods are those of exclusion; measures which deny wildlife the food or shelter which it seeks. It is the responsibility of private property owners to take reasonable steps to exclude problem wildlife from their land. In the case of beaver, these are steps which make the landscaping unattractive or unavailable. Private property owners should consider the following:

- Repellents are usually not effective and should not be relied upon.
- Sturdy fencing is the only foolproof means of exclusion. Individual trees are best wrapped with hardware cloth forming a cylinder standing six inches away from the trunk. Property is best fenced with welded wire fencing.
- In the event that exclusion is ineffective or impractical, harassment techniques may be implemented. For beaver, these measures may include repeated opening of the dam or lodge, forcing the animals to seek new territory. However, it is against State regulations for private citizens to tamper with dams or lodges on public land.
- If exclusion or harassment techniques prove to be ineffective, then as a last resort, trapping may be employed to remove the animals. State regulations control the final disposition of trapped beavers.

III. MANAGEMENT OF THE BEAVER

Definition

Beaver management consists of all actions undertaken by the City for the express purpose of manipulating beaver populations and/or resolving conflicts of beaver activity, whether those actions are initiated by staff or are in response to public inquiries. It also includes any other action that may directly or indirectly impact beaver.

Management Plan

For management purposes, beaver activity that results in conflicts will be evaluated by the City for the existence of, or potential for:

- Impact to public health and safety
- Impact to private property
- Impact to public infrastructure
- Impact to public parks and facilities

The significance of these impacts will determine the type of management action taken, but all actions will follow established conflict resolution procedures. Beaver management actions will be based on the following:

- Proven wildlife management techniques
- Appropriate animal welfare concerns
- Problem solving
- Applicable laws and regulations

Under City of Rockville law, beavers are protected as a wild animal against harm or destruction on public property. State law provides for a legal winter trapping season for beaver pelts only; nuisance trapping is permitted by State policy. However, current State

policy requires that captured beavers be euthanized and not relocated.

For each specific type of beaver activity, the City will develop procedures as follows:

- Public education and tolerance
- Exclusion, including but not limited to fence and screens
- Beaver pond mechanical leveler devices
- Harassment, including but not limited to the destruction of dams and lodges
- Population management, including but not limited to birth control, relocation, and euthanasia, as applicable to State law

IV. ACTION PLAN FOR MANAGEMENT (Conflict Resolution)

All public concerns about beaver activity creating conflicts will be first investigated in the field by City staff using the methodology below:

- Complainants, adjacent landowners, and homeowner/civic associations where they exist, will be informed immediately of policies and procedures regarding the management of beaver.
- Interpretive brochure covering beaver natural history and City management policy and procedures will be made available to adjacent landowners, and homeowner/civic associations where they exist.
- Beaver activity will be evaluated on an on-going basis for potential for conflict/impact in the urban environment.
- The significance of these impacts will determine the type of management taken, but all actions will follow established conflict resolution procedures.
- In the case of impacts to private property, the property owner will be counselled to accommodate the beaver and tolerate some inconvenience. Interpretive information will be provided as mentioned above, as well as information on exclusion methods. For beavers, exclusion methods typically involve fencing individual trees or property lines. Citizens must implement specified exclusion measures, where practical, before other actions will be considered. The City shall provide consultation services, as needed, and supply hardware cloth or chicken wire to protect trees. The City shall assume no legal liability for these impacts.
- In situations where exclusion measures are not feasible on private property, the City may take actions on parkland in order to address significant impacts on private property. Such actions will follow established conflict resolution procedures, beginning with exclusion, proceeding through harassment, and ending with removal of the beaver.

In the case of impacts to public areas, the City may decide to take management actions to protect resources, facilities, and services. However, damage to trees on parkland, in the absence of other impacts, does not necessarily constitute reason for management. In order to determine overall impacts to natural resources, a field investigation of habitat suitability may be conducted.

- If it is determined that the habitat is suitable for a fixed number of beaver, the City may implement control, if practical, to limit populations. If these are not practical, the City will follow established conflict resolution procedures, beginning with exclusion, proceeding through harassment, and ending with removal of the beavers. .
- If the habitat is found to be unsuitable, and if exclusion methods fail or are infeasible,

or if a safety threat persists, population management actions will be taken as described below. Whatever type of action is taken, it will be conducted in as humane a manner as possible, with due regard for wildlife habitat welfare.

- Citizen complainants, adjacent landowners, and homeowner/civic associations where they exist, will be notified of impending population management actions by the City.

- Population management actions will be taken in the following order:

1. When practical, City staff will demolish the primary dam several times in rapid succession to encourage the beaver to relocate. All dam material will either be taken from the site or sticks will be cut into one-foot lengths to prevent re-use. All demolition shall be at the advice of the wildlife biologist.

2. If no dam exists, under certain conditions City staff may disturb the lodge repeatedly to encourage relocation. This will be done with the utmost concern for the welfare of the animal(s) involved.

3. If dam building persists or demolition is not feasible, beaver will be removed from the site by the most practical of the following methods, as determined by the City, in order of decreasing preference:

- a. Humane live trapping

- b. Humane destruction by euthanasia at the Humane Society

The City Neighborhood Services (CNS) will be notified of any impending actions involving humane destruction. If some form of trapping is utilized, CNS will be requested to perform trapping at their earliest convenience. If they are unable to meet the request in a timely manner, trapping will be performed by licensed/authorized trappers under contract to the City. A contract agreement and letter of authorization will be issued to each contractor. Every site will be inspected in the field by City staff or other qualified naturalist staff, with CNS or the contractor before the commencement of trapping. Euthanasia of live trapped animals, if that is the method of choice, will be performed by the Humane Society.

4. All beaver conflict actions will be reported and recorded by the City.

V. MANAGEMENT DECISIONS

Beaver conflict action plan decisions will be made by the Beaver Control Committee (BCC), including the:

- Superintendent of Utilities
- Superintendent of Parks and Facilities
- Member of the Recreation and Park Advisory Board

Emergency public health and safety problems will be dealt with at occurrence, and immediately (such as sewer line backup or discharge).

Conflicts that cannot be decided by the BCC will be referred to the Recreation and Parks Advisory Board for decision and action authorization.

VI. PROFESSIONAL ASSISTANCE

The City shall contract with an expert wildlife biologist with beaver conflict resolution experience, to assist in the overall objectives of the Beaver Control Policy for the City of Rockville, or utilize appropriate Department of Natural Resources assistance.

VII. ADMINISTRATION AND AUTHORIZATION

The Beaver Control Policy will be administered by the Superintendent of Public Works with authority provided by the adoption of this policy by the . The Beaver Control Policy shall be subject to periodic review by the Recreation and Park Advisory Board.