



# TOWN OF PALMER CONSERVATION COMMISSION

## Meeting Minutes

Monday, February 26<sup>th</sup>, 2018 – 7:45 PM  
Belchertown Town Hall Auditorium  
2 Jabish Street, Belchertown, MA 01007

Donald Blais, Chair  
David Cotter, Vice Chair  
Peter Izyk  
Nicholas Zeo  
Brenda Cole

Angela Panaccione, Agent

**Members Present:** Donald Blais, Jr.  
Peter Izyk  
Nicholas Zeo  
Angela Panaccione, Conservation Agent

**Members Absent:** David Cotter  
Brenda Cole

**Also Present:** David Haines, Chairman of Belchertown Conservation Commission  
Mike Cavatorta, Belchertown Conservation Commissioner  
John Henry, Belchertown Conservation Commissioner  
Eric Wojtowicz, Belchertown Conservation Commissioner  
LeeAnne Connolly, Belchertown Conservation Administrator  
Erica Cross, Belchertown Conservation Administrator  
Michele Nowak, Belchertown Conservation Clerk  
William Fay, Belchertown Land Trust  
Shawn Clark, Belchertown Land Trust  
Linda Trembly, Belchertown Land Trust  
Michael Horrigan, Belchertown Land Trust  
CallieRae Duda-Horrigan, Belchertown Land Trust  
Daniel Beaudette, Attorney representing Belchertown Land Trust

1. **Call to Order:** 7:45 PM – Donald Blais, Jr (Chair)
2. **7:46 PM Joint Public Hearings Notice of Intent (NOI) DEP #256-0324: Upper Bondsville Dam Repairs (Map 19-60, 61 & 62) – Belchertown Land Trust (BLT)**

This hearing is a joint meeting to review the proposed work at the Bondsville Dam. The Belchertown Conservation Commission hosted and was introduced.

Chairman Donald Blais, Jr, called the hearing to order at 7:46pm. Mr. Fay, president of the Belchertown Land Trust (BLT), and an engineer, was present for the meeting. He also noted there were members of the BLT present in the audience. Mr. Fay presented new and historical information about the dam regarding its repair and increasing the spillway capacity and that the dam is under both the Palmer and Belchertown jurisdictions. A Chapter 91 license is required as part of the process, and Orders of Conditions are required by MADEP prior to the issuance of the license. Mr. Fay conducted a PowerPoint presentation in which mandated tasks issued by the dam safety board were explained, and are summarized below.

- **Task 1:** Remove former Intake Gates on Palmer side including removing remains of canal gate structure and the brush on left abutment wall. The main spillway was determined to be inadequate to pass the 500-year flood. Removal of the former canal gate structure will allow a free approach to the canal spillway during flood events. This will allow its use to be credited towards increased spillway discharge capacity. The gate timbers will be removed by an excavator equipped with hydraulic grappling hooks or

a crane using lifting straps. The excavator or crane will be sited on the Palmer side of the canal. The hydraulic hooks or crane straps will clamp onto the timbers and pull them out. The excavator or crane will place each timber in a dump truck parked alongside of the excavator. Once the timbers have been removed, the bottom of the canal approximately 10 feet upstream and downstream of the gate location will be cleaned of accumulated debris with a bucket equipped excavator. All recovered debris will be placed in the dump truck. All timbers and debris will be trucked off site and disposed of. Before demolition has begun, two silt booms will be stretched across the width of the canal just upstream and downstream of the gate structure. Staked haybales will be placed alongside the granite canal wall between the locations of the silt fences. Alternatively, large sandbags will be placed in the mouth of the canal and the gate remains will be removed in the dry.

- **Task 2: Seal Leaks in Canal Spillway Wall.** The canal spillway is constructed of mortared masonry granite blocks. The mortar has been eroded over time creating flow paths. This has caused streams of water issuing at numerous locations. The flowing water has caused the holes to enlarge and the streams of water to increase over time. Office of Dam Safety wants the holes sealed. An excavator or Gradall will be used to scrape the upstream footing of the canal spillway clean of all debris. The upstream side of the canal spillway wall will be pressure washed. The steel form will be lowered in place with a crane. The form will be rock bolted to the granite canal wall. A rectangular rebar array will be placed between the wall and the form. The form will be filled and vibrated with 4000-pound air entrained concrete. Once the concrete has cured, the form will be removed.
- **Task 3: Maintenance Repair of Canal Outlet.** The canal spillway gate is leaking and its gate hoist needs to be lubricated.
- **Task 4: Repair Corner of Left Spillway.** The downstream corner of the main spillway left training wall has missing stones. To prevent further deterioration of the wall, granite stones of adequate size will be carried to the location of the missing stones and mortared in place. The replacement granite stones will be hand carried and hand placed. A bucket of stiff cement will be mixed over a tarp. The cement will be hand parged into the cracks between the granite stone. To prevent any cement from entering the river, a small tarp will be spread on the ground. Opening of cement bags and mixing of cement will take place on the tarp. A second tarp will be attached below the work area. The tarp will be held up with rope to create a spill diaper. In the event the diaper is used, care will be taken to fold the waste cement into the tarp before it is removed.
- **Task 5: Remove Brush & Trees from Left Spillway.** The top of the main spillway left training wall has brush growing on it. As the brush roots grow in diameter, the break up the mortar between the granite stones and displace the stones. To prevent further damage, all small trees, brush and vegetation will be removed from the top of the training wall. A “weed wacker” with a circular saw attachment and/or a chain saw will be used to cut all vegetation from the top of the wall. The vegetative debris will be removed off site.
- **Task 6: Increase Height of Left Abutment.** As existing, the main spillway safely passes only 6,140 cfs of the 7425 cfs, ODS, 500 year design flood. The spillway is inadequate by 18 %. (It should be noted here that the 1936 flood, at the Upper Bondsville Dam, peaked at 7,880 cfs without the dam failing. The 1938 flood passed over the abutments of the dam and could have caused the right embankment to fail.) In order to safely pass the 500 year design flood, the spillway capacity needs to be increased. It was proposed to dam safety, and they concurred, that the spillway capacity could be increased by removing the canal head gates to allow the canal spillway to pass part of the flood and to increase the height of the left and right abutments with an earthen berm. The combination of these two proposals would allow the dam to safely pass the ODS 500-year flood of 7,425 cfs at a headwater elevation of 369.95. In addition, the downstream slope of the right embankment would be protected with placed stone “rip rap”. A core wall of interlocking concrete blocks will be placed perpendicular to the canal spillway. The blocks will extend from the downstream, canal spillway retaining wall and extend to the elevation of the natural valley slope coincident with the elevation of the top of the blocks. The Palmer side will be raised by 14 inches, and the Belchertown side will be raised by 8 inches. The berm would be a continuation, and part of raising the height. An impervious plastic barrier will be placed over the top of the blocks and extend

10 feet upstream for the length of the blocks. A pervious geotextile will be similarly placed on the downstream side of the block wall. The wall will be backfilled upstream and downstream to a 3:1 slope with compacted glacial till. The top of the fill will be loamed and seeded with grass. Hay will be spread over the seed to prevent avian predation and protect it from erosion during sod growth. To prevent any soil erosion from entering the Swift River, staked hale bays will be placed end to end around the base slope of the entire berm. In addition, during construction of the berm a staked row of haybales shall be installed along the upstream and downstream shore of the existing canal plug and at the river end of the canal plug.

- **Task 7:** Parge Cracks in Face of the Main spillway and the right spillway Training Wall. The face of the main spillway and right spillway training wall has mortar missing from some of the joints between the granite blocks. To prevent further deterioration of the wall the cracks need to be hand troweled with epoxy mortar. Work on the spillway will be facilitated by placing temporary sandbags on 30 foot sections of the spillway crest to divert water flowing over the crest. A small float (barge) will be tied to the spillway wall. A tarp will be attached below the work area. The tarp will be held up with rope to create a spill diaper. In the event the diaper is used, care will be taken to fold the waste cement into the tarp before it is removed.
- **Task 8:** Repair Right, Upstream Spillway training wall. A large tree fell into the river and the root structure took out part of the dam wall in the process. The remains of the tree will be removed. Loose stones will be removed to a firm course of stones. The replacement granite stones will be hand carried to the wall and hand placed. A bucket of stiff cement will be mixed over a tarp. The cement will be hand parged into the cracks between the granite stones. After the wall is raised to its original level, the top of the fill will be loamed and seeded with grass. Hay will be spread over the seed to prevent avian predation and protect it from erosion during sod growth.
- **Task 9:** Fill in the gully worn into the embankment adjacent to the right spillway wall. Erosion started in 1936 and has progressively gotten worse. Over the many years, erosion has removed the fill adjacent to the shore side of the right spillway retaining wall. This fill needs to be replaced. The four-large diameter and four smaller trees need to be cut down and their stumps removed. The eroded soil needs to be replaced to conform to the existing slope of the rest on the downstream embankment slope. The soil will be dumped on the top of the abutment. It will be carried in excavator buckets to the base of the slope and compacted. The next bucket full will be placed on top of the first and compacted. In this way the slope will be slowly and carefully built back up from the base upwards. Concurrently, this area will be covered with geotextile and covered with placed riprap. Restore embankment to granite wall and armor plate with riprap.
- **Task 10:** Cut down and remove the roots of all the trees and brush located on the right embankment. Over many years, trees have been allowed to grow on the earthen embankment that forms the right abutment of the dam. During wind storms these trees can blow over creating enormous holes in the embankment. Additionally, the roots can die and rot out leaving small tunnels that can convey water and cause a piping failure. All trees greater than 2 inches in diameter that require removal have been flagged in the field with pink plastic tape. These trees and all trees and brush of a smaller diameter need to be removed and their trunks dug up. The following is a list of tree sizes that need to be removed. They are predominantly oak trees with some maple trees, a scattering of locust trees and one small white pine tree.
- **Task 11:** Install Geofabric and riprap on downstream face of right training wall. In order to safely pass the 500 year design flood, the spillway capacity needs to be increased. It was proposed to dam safety, and they concurred, that the spillway capacity could be increased by removing the canal head gates to allow the canal spillway to pass part of the flood and to increase the height of the left and right abutments with an earthen berm. The combination of these two proposals would allow the dam to safely pass the ODS 500-year flood of 7,425 cfs at a headwater elevation of 369.95. In addition, the downstream slope of the right embankment will be protected with an armor plate of placed stone “rip rap”. The trees and top soil will be removed from the downstream slope. The gully in the embankment next to the granite training wall will be filled to an area the size of 65 X 40 ft. A pervious geotextile will

be placed on the top and downstream slope of the earthen embankment. This will allow groundwater to flow through the barrier but will prevent migration and/or sloughing of the underlying soil. The geotextile will extend from the granite wall to the former railroad embankment and follow the slope of the railroad embankment for an additional 20 feet. Previous to this work, riprap will be stockpiled at the beginning of the railroad trail at Depot Street. Small dump trucks will convey the riprap to a second smaller stockpile at the work site. Once the fabric is in place, a pair of excavators working in tandem will hand place the riprap. One excavator will be located near the top of the slope. The second excavator will be located at the bottom of the slope. The upper excavator will pass the stones from the stockpile to the second excavator. The second excavator will place the stone on the geotextile. Work will begin at the bottom of the slope. As each course of stone is placed, the work will shift to placing the next course. Stone placement will proceed in this manner until all the riprap is placed. The new berm composed of concrete interlocking blocks with an upstream earthen bank will be built on the previously placed geotextile. The riprap will continue over the top of the slope and will cover the level space between the top of the slope and the new interlocking concrete wall (ie: the riprap will be placed against and abut the new concrete wall.)

- **Task 12:** Raise the height of right abutment with the concrete block and earthen berm. It was proposed to dam safety, and they concurred, that the spillway capacity could be increased by removing the canal head gates to allow the canal spillway to pass part of the flood and to increase the height of the left and right abutments with an earthen berm. The combination of these two proposals would allow the dam to safely pass the ODS 500-year flood of 7,425 cfs at a headwater elevation of 369.95. In addition, the downstream slope of the right embankment would be protected with placed stone “rip rap”. A core wall of interlocking concrete blocks will be placed perpendicular to the canal spillway. The blocks will extend from the left spillway retaining wall and extend to the former railroad embankment. The top of the blocks will be coincident with the elevation of the top of the railroad embankment. An impervious plastic barrier will be placed over the top of the blocks and extend 10 feet upstream for the length of the blocks. The upstream side of the wall will be backfilled to a 3:1 slope with compacted glacial till. The top of the fill will be loamed and seeded with grass. Hay will be spread over the seed to prevent avian predation and protect it from erosion during sod growth.
- **Task 13:** Place riprap into the deep hole eroded into the river bottom and located downstream of the spillway apron. The eroded hole and its possible expansion by future floods is a real concern. At some point, the hole will be deep enough that the masonry apron and bottom most course of granite stones that the dam is built from will collapse into the hole. The least expensive, least environmentally invasive and aesthetically pleasing solution is to fill the hole in with stone riprap. The riprap will be placed to an elevation above the normal water surface so the stones are visible to any children wanting to jump off of the granite retaining wall. Previous to this work, riprap will be stockpiled at the beginning of the railroad trail at Depot Street. Small dump trucks will convey the riprap to a second smaller stockpile at the work site. A pair of excavators working in tandem will hand place the riprap. One excavator will be located near the top of the slope. The second excavator will be located at the bottom of the slope. The upper excavator will pass the stones from the stockpile to the second excavator. The second excavator will place the stone in the hole. Work will begin at the shore side of the hole. As the stone is placed in the hole and it fills up above the surface of the water, the excavator can drive onto the dry stone to continue to fill the hole.

The installation of canoe portage was also presented. Signage has been suggested and presented to David Cameron and they’ve been agreed upon and included it for Chapter 91 application. The plans have been approved by the Board of Dam Safety. Mr. Fay also presented to the Commissions plans for the wooden gate system, erosion and environmental controls, site plans and other explanations of repairs.

Palmer Conservation Agent, Angela Panaccione questioned if the work meets the exemption for Riverfront Areas under 310 CMR 10.58(6)(k): Activities within an Historic Mill Complex and if the dam itself qualified as a historic mill complex. The total area of work in the Riverfront is 30,000 SF, which exceeds the performance standards for RFA but if the project meets the exemption, it does not have to meet the

standards. Belchertown Conservation Commission Chairman David Haines also stated the project was a limited project under 310 CMR 10.53(3)(i): The maintenance, repair and improvement (but not substantial enlargement except when necessary to meet the Massachusetts Stream Crossing Standards) of structures, including dams and reservoirs and appurtenant works to such dams and reservoirs, buildings, piers, towers, headwalls, bridges, and culverts which existed on the effective date of 310 CMR 10.51 through 10.60 (April 1, 1983).

Palmer Conservation Agent, Angela Panaccione also recommended including a 'time of year' restriction due to cold water designation of the Swift River and the potential for cold water fish to use the deep hole proposed to be filled for spawning (as the hole is good habitat). She recommended BLT reach out to Richard Hartley, the CFR expert for the Mass Department of Fish & Game.

Palmer Conservation Agent, Angela Panaccione also inquired about the dewatering procedures. Shawn Clark stated they would use Dirt Bags or a sediment tank during work. He will supply the Standard Operating Procedures & Specs for both methods.

Belchertown Conservation Commissioner Jim Henry inquired how the coffer dam would be constructed. Shawn Clark stated they would be using super sacs which consist of 3' X 3' sand bags stacked 8'-10' high and approximately 10' wide. The sand would be clean fill and sized appropriately for the coffer dam activities.

After seeing the presentation, both Commissions would like to conduct another site visit to determine repair and construction methodology. The Commissions jointly agreed to a site visit on March 16<sup>th</sup> at 3 PM, weather permitting.

A final comment was made by BLT Attorney Daniel Beaudette regarding his concerns with the proposed canoe portage. He stated funds for the project are finite and the requirements for the portage, as well as the liability concerns raise concerns. The portage area will require additional of signage and fencing in relation, which could be cost prohibitive to the Project. The Palmer Conservation Agent stated the portage was a requirement of MADEP for the Chapter 91 license, not the Commission. The Commission only recommended portage as an option because it is the cheapest and easiest way to comply with the Chapter 91 license.

**Motion made by Peter Izyk to continue the Public Hearing until Tuesday March 20, 2018 at 7:00pm**

**Motion was seconded by Nick Zeo**

**No further discussion – 3-0-0 – Motion Carries**

**Motion made by Mike Cavatorta to continue the Public Hearing until Monday March 19, 2018 at 7:00pm**

**Motion was seconded by Eric Wojtowicz**

**No further discussion – 4-0-0 – Motion Carries**

**3. Meeting adjourned: 9:30 PM**

**Motion made by Peter Izyk to adjourn at 9:30 PM**

**Motion was seconded by Nick Zeo**

**No further discussion – 3-0-0 – Motion Carries**

Sincerely Submitted,

Angela Panaccione  
Palmer Conservation Commission Agent



# TOWN OF PALMER CONSERVATION COMMISSION

LOCATION: Belchertown Town Hall Auditorium  
2 Jabish Street, Belchertown, MA 01007

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David Cotter, Vice Chair  
Peter Izyk  
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Angela Panaccione, Agent

## Meeting Documents

Monday, February 26<sup>th</sup>, 2018 – 7:45 PM

**The following is a list of documents used at the above meeting, in addition to those included in the agenda packet which is part of the official record of the meeting:**

#	Description	Agenda Item	Retained
2	WPA Form 3: Notice of Intent – Upper Bondsville Dam Repairs; prepared by Fay Engineering Services; dated 5/4/2017	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Notice of Intent Narrative – Upper Bondsville Dam Repairs; prepared by Fay Engineering Services; dated 5/4/2017	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Bondsville Upper Dam Phase 1 Inspection/Evaluation Report, prepared by Tighe & Bond, Inc., dated 3/20/2009	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Operation & Maintenance Manual – Upper Bondsville Dam State Dam ID#: 7-12-239-5; prepared by Belchertown Land Trust; dated 5/19/2017	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Bondsville Upper Dam Repairs Project – Belchertown Land Trust NATDAM MA00560 (Sheets 1-12); prepared by Fay Engineering Services; dated 5/1/2017; revised 1/17/2018	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Coffer Dam, Turbidity Curtain & Dewatering Specs (Typical); Prepared by Northern Construction, LLC; dated May 16, 2016	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Spill Control Plan; Prepared by Northern Construction, LLC; dated 11/2016	Schedule of Public Hearings	DEP #256-0324 File Folder
2	MGL Chapter 253 Dam Safety Permit No. 306-2016-306; prepared by DCR Office of Dam Safety; dated 11/1/2016	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Massachusetts Department of Environmental Protection Bureau of Water Resources – Waterways Program Chapter 91 Waterways License Plans (Sheets 1-6); prepared by Fay Engineering Services; dated 1/17/2018	Schedule of Public Hearings	DEP #256-0324 File Folder
2	Power Point Presentation - Upper Bondsville Dam Repairs; prepared by Fay Engineering Services; dated 2/20/2018	Schedule of Public Hearings	DEP #256-0324 File Folder