

Project Proposal for the Housatonic Settlement Trustees
OLD PAPERMILL POND DAM FISH PASSAGE PROJECT
July, 2011

Abstract

Old Papermill Pond Dam is the first dam on the East Aspetuck River, a major tributary of the Housatonic River. Its presence and current operation is a degradation of aquatic natural resources since it blocks fish passage and causes large-scale downstream transport of sand. The dam owner wishes to correct this degradation but the best solution is unclear. An Alternatives Analysis is needed to study the problem and analyze several options for correcting the problem.

A \$100,000 grant from the Housatonic Settlement is proposed to fund this study. Subsequently, a preferred alternative would be selected and carried to final design with completed permit applications. Finally, the designed alternative would be implemented (constructed). The final outcome of this project would be to address a problem dam in the watershed and reconnect 10.1 miles of riverine fisheries habitat. This is an exceptional amount of habitat by Connecticut standards.

Project Narrative

Old Papermill Pond Dam is a concrete dam located on the East Aspetuck River in New Milford, CT. It is located 2.9 miles upstream of the Housatonic River. The dam is owned by the Ousatonic Fish and Game Protective Association (OFG) of New Milford, CT, a small non-profit club devoted to fishing, hunting, land and water preservation and public education. OFG uses the pond behind the dam and the surrounding land for recreational fishing, classes and other club activities. In addition to being a migratory barrier to fish, this dam has created a chronic problem by accumulating sand and silt, which has filled the impoundment and greatly reduced suitable trout habitat upstream from the dam. In the past, the boards blocking the low level output have been removed one at a time to gradually lower the water level, and massive amounts of sand have been flushed downstream, to the detriment of the habitat. This practice is no longer allowed and the sand has continued to accumulate above the dam. The OFG needs a plan to deal with these two problems. OFG proposes to use a grant from the Housatonic – GE Settlement to fund an engineering alternatives analysis.

The dam is part of a former paper mill and more recently was used by the Bucks Rock Camp as a swimming area before being donated to OFG. Most of the structure is a massive chunk of concrete comprising a sharp crested weir about 12 feet high with a center portion slightly recessed to form a low flow spillway. There is a low-level outlet closed off with wooden boards. Photographs are provided in Appendix B. This dam is the first barrier to fish migration encountered by fish ascending the East Aspetuck River from the Housatonic River. The next full barrier to upstream fish migration is a 15 foot waterfall downstream of Lake Waramaug and is 7.2 miles upstream of the dam.

The overall project would consist of three phases: I- Alternatives Analysis, II- Final Design, and III- Construction. To be clear, this current proposal includes only phases I and II but it would be the intent of OFG to pursue construction of the designed alternative through a subsequent proposal. Overviews of the three phases are:

Phase I- Alternatives Analysis. There are several options for addressing the problems of this dam. They could include: (a) full removal of the dam with upstream habitat restoration, (b) lowering of the dam and the construction of a fishway with upstream habitat restoration, (c) maintaining the dam at the current height and construction of a fishway. All of these options, or alternatives, would include management of the accumulated sediment behind the dam, which might include some removal and

disposal. Each alternative may include other special design features such as utilizing the marshland that OFG owns upstream of the dam to help manage the entire parcel as enhanced habitat for a number of wildlife species. Other alternatives could also be considered. OFG proposes to use grant money to hire an experienced consulting engineering firm to perform this Alternatives Analysis (A/A). The firm would be hired after a competitive bidding process that included a Request for Proposals. The process will be guided by technical advisers from the CTDEEP/Inland Fisheries Division (IFD) who have experience with such a process. Once a firm has been selected, a Scope of Services and contract will be developed between the firm and OFG, with consultation with the IFD. All parties will agree on which alternatives will be studied at the onset of the project. The deliverables of phase I will be an engineering report that will summarize the alternatives that were studied. For each alternative, the report will provide descriptive text with details such as disposition of sediment, water control, construction sequence, required permits, cost, and some specifications such as in the case of the fishway alternative(s), what style of fishway, the slope, location, etc. Artist renderings of what the site will look like upon completion will be provided for each alternative. Sediment sampling will be done to support all alternatives so that there will be data on estimated quantity of sediment, grain size characterization of the sediment, and the presence of any contamination in the sediment. Upon receipt of the A/A report, the OFG will assess the pros and cons of each alternative and consider how each one would impact the objectives and activities of the association. It will choose one alternative as the preferred option to proceed to final design.

Phase II- Final Design. This will be performed by the same engineering firm without furthering bidding. This phase will be included in the original Scope of Services and contract between the firm and OFG. If phase I reveals new facts and engineering requirements that expand the expectations of the firm, the fees provided in the contract or the Scope of Services can be re-negotiated. Plan review by the OFG and its advisers will be conducted at the 30% and 90% completion level. Final plans will include permit application preparation by the engineering firm. The deliverables of phase II will include the final drawings, engineering report including opinion of probable cost of construction, permit applications, and bidding documents.

Phase III- Construction. Once the project is fully designed and all permits have been secured, OFG will proceed with implementation (construction). This is anticipated to be fully outside the scope of this proposal and may require additional fund raising. If Phases I and II do not fully expend all of the money that is awarded to OFG, the association will request permission to retain the extra funds and apply it towards the cost of construction. Assuming that additional funds are needed, OFG will inquire of the Housatonic Settlement Trustees if settlement funds are still available and if the Trustees would be receptive to another proposal to cover construction costs. If settlement funds are not still available, OFG will investigate the availability of other grants.

The benefits to aquatic natural resources within the Housatonic River watershed are notable. The East Aspetuck River is a major tributary of the mainstem Housatonic River and flows through a portion of the watershed that is rural and high quality (in terms of aquatic habitat) yet in close proximity to human populations (e.g. New Milford) and accessible to diverse users. The entire stream is designated by the CT DEEP as a Class 3 “Wild Trout Management Area” and includes wild brown trout. While diadromous species are not currently present in the river, there are plans to provide upstream and downstream passage facilities at the downstream Derby, Stevenson, and Shepaug dams on the mainstem Housatonic River. An eel passage facility has already been installed at the Stevenson Dam and there are plans to install one at the Shepaug and Derby dams (although eels currently get over the Derby Dam). The IFD currently uses the East Aspetuck River as an American eel monitoring site (no

eels are currently present) and expects to use the site to document the re-colonization of the river as eels are passed over the Shepaug Dam. The East Aspetuck River has great potential as a spawning and nursery habitat for diadromous fishes in the future and this project will greatly enhance that potential while immediately addressing connectivity and habitat issues for trout and native riverine species. The habitat in this river is very good upstream of the impoundment and very good downstream of the dam but poor within the impoundment. Removal or modification of the dam would allow habitat restoration of this degraded stretch and provide additional pools suitable for the holding and breeding of trout. Any fish passage project at this dam would re-connect 10.1 miles of the East Aspetuck River (effectively, the entire stream) as well as many miles of the Housatonic River between the Shepaug and Bulls Bridge dams. Projects that reconnect habitat and restore runs of fish inevitably have beneficial side effects. Two common benefits include the re-establishment of upstream populations of freshwater mussels which rely on fish movement for dispersal and the enhancement of populations of fish predators such as osprey, herons, otter, etc. Both of these benefits can be expected from this project.

Description of Community Involvement and Support

The Old Papermill Pond Dam property is owned by the Ousatonic Fish and Game Protective Association (OFG) and consists of 5.3 acres of stream, marshland, parking area and recreational land. The marshland comprises a significant area and is home to many species of birds and wildlife and can be managed accordingly to further enhance the overall beauty and value of the environment. As private land, it is and will continue to be maintained by OFG and public access will be limited. The options that will be developed for consideration at the property will increase safety, and accessibility to low usage areas and allow OFG to pursue its mission of educating and engaging young people in outdoor sporting activities, sound conservation practices, and learning about the flora, wildlife and sustainable stream management practices that this property can provide. The club has already invested in building a pavilion on the property to be used for such purposes and has held meetings, fly fishing classes and other events there. We look forward to continuing the utilization of this pavilion to conduct additional classes and to promote a sense of responsibility in managing and protecting the environment. The added accessibility and safety enhancements would allow us to again open the use of the property for children, handicap access fishing and new activities which would all be club sponsored and supervised. Past uses have included a kids fishing derby which is open to the public, archery shoots which are also open to the public, and the pavilion for small meetings, picnics, classes etc. We have also issued fishing permits to non-members on an annual basis and we provide handicapped access to the pond. At OFG expense, several hundred trout were stocked each season. Most of these activities have been put on hold due to lack of suitable holding water to support the trout stemming from the fact that we are no longer able to remove accumulated silt.

Although the majority of the final solution will be done by hired contractors, volunteers may be able to make a significant contribution as well. OFG members and their families, several chapters of Trout Unlimited, and the New Milford Boy Scout Troops have all pledged their support. [Letters of Support are provided in Appendix C.] The final solution will dictate the degree to which all of these volunteers will be able to help. A further advantage to the local community could be the stabilization of roadway banks along the river. If the selected alternative is to install a fishway, the fishway will be operated by the OFG following an Operations and Maintenance Plan developed in consultation with and approved by the IFD. Such a plan will stipulate when the fishway would be opened, how flow will be managed, how the fishway and its use by fish will be monitored, when it will be closed, and how all appurtenant gates and outlets will be managed. This will be done by all volunteer labor during the fish passage season and checks will be made at a minimum on one day per week.

It is the position of the OFG that the public benefits of this project will not include direct access to the property (notwithstanding the public events held by the OFG as outlined above) but through demonstrable improvement in the ecological quality of the river, resulting in higher fish production and improving angling opportunity throughout the length of the river, outside of OFG boundaries.

Environmental Impacts of the Proposed Project

A full assessment of the impacts cannot be completed until one of the alternatives is selected.

However, some presumptive impacts can be listed:

POSITIVE

1. Reconnection of 10.1 miles of fragmented riverine fish habitat in the East Aspetuck River.
2. Potential support for eventual restoration of selected diadromous fish species.
3. Stop the ongoing transport of sand and other bedload materials downstream of the dam, thus reducing the existing negative impact.
4. Possible improvement in water quality above and below the dam if a dam removal or partial removal alternative is selected.
5. Possible reduction of mean water temperature in a cool-water stream if a dam removal or partial removal alternative is selected.
6. Elimination of unnatural warm-water fish habitat within a cold water stream with concomitant reduction of non-native fish species.
7. Public education about protecting and restoring aquatic resources in the Housatonic River watershed and acknowledging the role of all partners and funders via an onsite kiosk.

NEGATIVE

1. Potential for short-term and limited release of accumulated sediment during the removal of the dam (if that alternative is selected). The elimination of downstream transport of sand is an objective on this project and plans will be developed to prevent even a temporary release, but small amounts of sand are often inadvertently released during such projects.
2. Potential for the loss of a longstanding structure (if not historic) well-known by many town residents (if the dam removal alternative is selected).
3. Change of aesthetic values from a pond to a free-flowing stream (if the dam removal alternative is selected). This could be a negative for some residents and a positive for others.

The last two negative impacts are not ecological impacts but sociological impacts and the degree to which they are truly negative is highly subjective. In summary, the project promises to provide many positive impacts and may have only one negative impact, which can be managed for and minimized. We feel that the overall impact to the aquatic environment is highly positive.

Site Map and Plans

The location of the dam is shown in Figures 1-3 (Appendix A). No plans or drawings for this project are available because the first phase of this project is an alternatives analysis which will generate several concepts for OFG consideration. These conceptual plans will be a product of phase I. The OFG will choose one of the alternatives and the contracted engineering firm will be instructed to produce final design and drawings for the selected alternative, suitable for permitting and bidding. These final plans will be a product of phase II.

Project Budget

At this time, a detailed budget is not appropriate. Almost all the funds requested by OFG will be used to pay for the services of a professional engineering firm. Small amounts of money will be expended for administrative purposes, such as mailing bid packages, photocopying, etc. An engineering firm will

be selected based upon competitive bidding, and the cost of services will be a significant consideration by the OFG in the selection process. Once a Scope of Work is developed with the selected firm, a more detailed budget will be available. Components of that budget are expected to include:

- Site surveying and mapping
- Sediment inventory and sampling
- Sediment analysis
- Hydrological and Hydraulic analyses of the river and site
- Dam inspection
- Consultation with Parties
- Development of concept drawings for Phase 1 of A/A
- Development of final drawings for Phase 2
- Development of permit applications

For the sake of this application, the current budget is:

| Item | Grant funds | In-kind match funds | Total |
|---|-------------|--|-----------|
| Clerical activities to support bidding | \$200 | OFG member volunteer time of 30 hours @ \$10/hr= \$300 | \$500 |
| Technical Assistance (DEEP) | \$0 | 35 hours @ \$87/hr= \$3,045 | \$3,045 |
| OFG support to firm | \$0 | 35 hours @ \$10/hr= \$350 | \$350 |
| Contracted services with engineering firm | \$99,800 | \$0 | \$99,800 |
| Total | \$100,000 | \$3,695 | \$103,695 |

Project Personnel and Contact Information

Project Manager (and primary contact)-

Bill Harrison, OFG, 860-350-4481 whhharrison@charter.net

Steering Committee Members-

John Deluca, OFG, 860-355-0677 dukedai@aol.com

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Technical Advisors-

Stephen Gephard, CTDEEP- Inland Fisheries Division/ Diadromous Fish Program, Old Lyme, CT. 860-447-4316. steve.gephard@ct.gov

Donald Mysling, CTDEEP- Inland Fisheries Division/ Habitat Conservation Enhancement Program, Litchfield, CT. 860-567-8998. donald.mysling@ct.gov

APPENDIX A. Location of property.

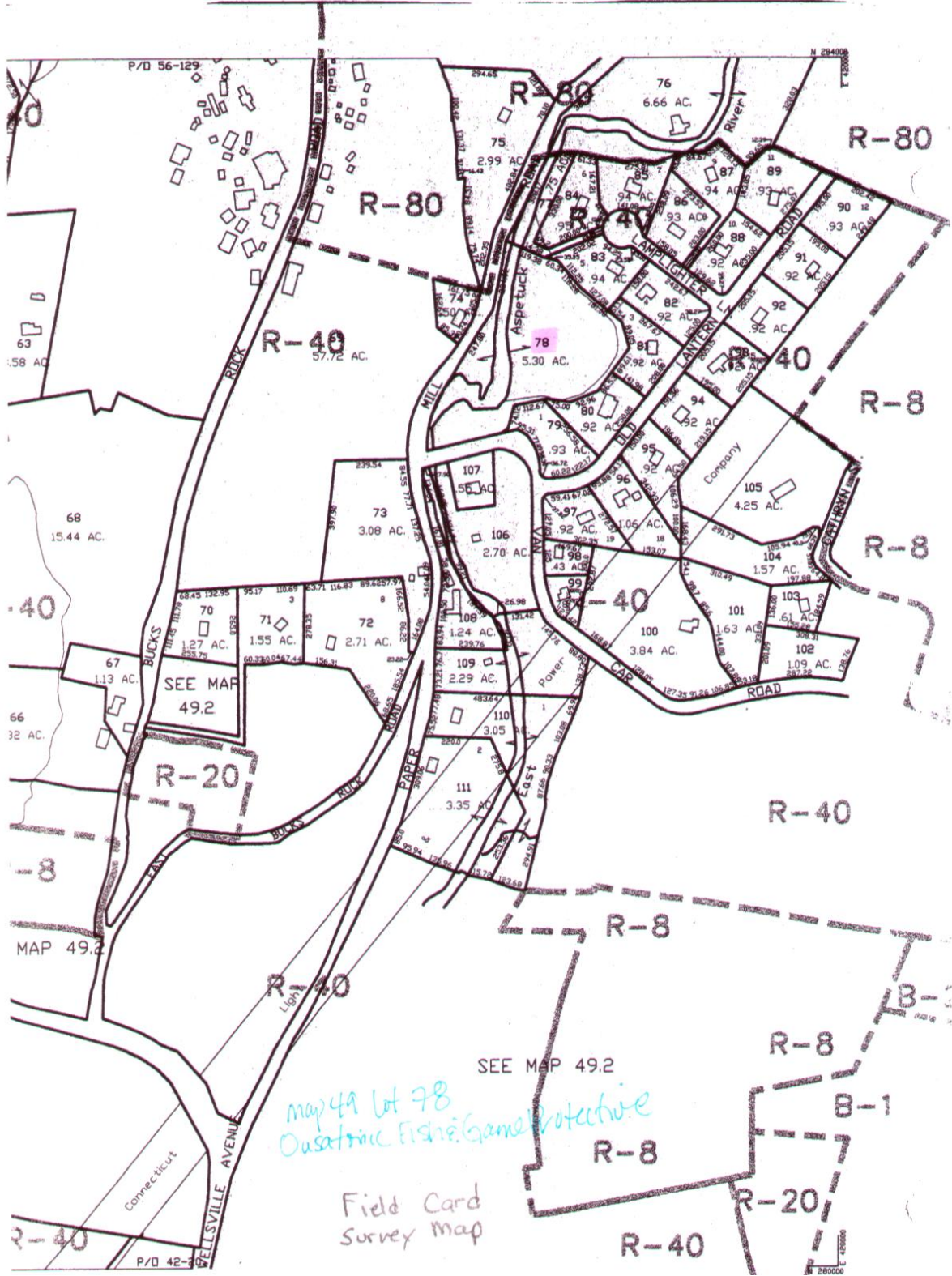
Figure 1. Aerial photograph of the Old Papermill Pond Dam, New Milford. All OFG property is to the right of the road. The dam is in the bottom/center of photo.



Figure 2. Aerial photograph of the Old Papermill Pond Dam, New Milford, showing the dam and downstream portion of the river as well as the club access and parking area to left of dam.



Figure 3. Plot Plan of the Old Papermill Pond Dam, New Milford. – Parcel – 78



APPENDIX B. PHOTOGRAPHS OF THE DAM AND POND.

Photograph 1. Above the dam looking upstream with a full pond (marshland area is to the right).



Photograph 2. Old Papermill Pond Dam as seen from downstream with the low level outlet open.



Photograph 3. Old Papermill Pond Dam showing downstream and upstream areas with pond drained.



Photograph 4. Above the dam looking upstream with water level boards removed and pond drained, showing the degradation of the natural channel and silt buildup



Photograph 5. Upstream face of dam with pond drawn down, showing removable boards and low level outlet.



Photograph 6. Downstream face of the dam showing low level outlet with boards removed.



Appendix C. Letters of Support

Bill,

As you know our chapter was involved in a fish habitat and bank control project in this stream some 5-6 years ago and you have our support and help when needed. It is important that this stream run free and allow fish to move at will in all parts of this stream. Keep us informed of your progress.

Jim Fedorich

Jim Fedorich
President
Northwest Chapter, Trout Unlimited
Chapter #009



Troop 66

St. Francis Xavier Church New Milford, CT

June 27, 2011

Bill Harrison

Ousatonic Fish and Game Protective Association, New Milford, CT

Hi Bill,

The Scouts and Leaders of Troop 66 are looking forward to helping with your stream improvement project also known as the "Old Papermill Pond Dam Fish Passage Project". We understand that this includes building stream structure along with removing and planting vegetation. This project will give the Scouts service time and help them to earn their Environmental Science Merit Badge. Please let us know when you will be needing our assistance and good luck with the plan.

Thanks for all you do!

Yours in Scouting,

Joe Vita

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