



MassWildlife

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

January 19, 2011

Mr. Fred Ayer, Executive Director
Low Impact Hydropower Institute
34 Providence Street
Portland, ME
04103

RE: West Springfield Hydroelectric Project
FERC No. P-2608

Dear Mr. Ayer:

The Department of Fish and Game ("DFG") hereby submits the following comments on the Low Impact Hydropower Institute's ("LIHI") Pending Application for the proposed LIHI re-certification of the West Springfield Hydroelectric Project on the Westfield River, in West Springfield, Massachusetts.

DFG is submitting these comments to LIHI in order to fulfill the requirements of the Massachusetts Department of Energy Resources ("DOER") Renewable Energy Portfolio Standard Regulations (225 CMR 14.00; "RPS I" and 225 CMR 15.00; "RPS II"). The RPS I and RPS II regulations were promulgated by DOER on January 1, 2009 and require that any hydroelectric project wishing to qualify as either a RPS I or RPS II generator first obtain LIHI certification. These regulations also require all relevant regulatory agencies to comment on the pending LIHI application.

PROJECT

The West Springfield Project consists of: an 18-foot-high, 447.5-foot-long timber crib dam with a dam crest elevation of 92.80 feet above mean sea level (msl) that creates a 20-acre impoundment; a 2,610-foot-long, 50-foot-wide power canal with concrete headworks containing six gates; a concrete and brick powerhouse about 60 feet long, 54 feet wide, and 63 feet high containing two vertical Francis turbines connected to two 480-volt generators; and a tailrace approximately 157 feet in length and having a width varying from 30 to 48 feet. There are no primary transmission lines included in the project.

Unit One is rated at 900 kilowatts (kW) and Unit Two is rated at 466 kW. However, due to flow restriction in the power canal, the combined capacity is 1,200 kW (Unit One at 800 kW and Unit Two at 400 kW). The project's average annual generation is 5.5 gigawatt-hours (GWh).

The project currently operates as a run-of-river facility (inflow equals outflow instantaneously). The hydraulic capacity of the project is 622 cubic feet per second (cfs) (400 cfs for Unit One and 222 cfs for Unit Two). The adjacent Southworth Company also draws water from the power canal to operate its own generating facility.

The project operates both upstream and downstream fish passage facilities for Atlantic salmon and American shad and upstream fish passage for American eel.

COMMENTS

The Department of Fish and Game supported LIHI certification of the West Springfield project in 2005. During the last five years the project has been run in accordance with its FERC license and there have been no violations of license terms and conditions we are aware of. Also, the project owner has been generally

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responsive to problems as they have arisen though some issues need to be addressed further. Therefore, going forward, DFG sees four issues that should be conditions of continuing LIHI certification.

- **Zone Of Passage (ZOP) modifications at the tailrace** - This has been an area of concern since the fishway was first operated in 1996. Concrete Jersey barriers were placed in this area in order to direct flow toward the project tailrace and create an attractive flow in the upstream ZOP. High flows after installation knocked one of these barriers over and moved another. Sandbags and rock debris were placed in line with the remaining (but toppled) Jersey barrier in order to create the desired flow pattern. This arrangement has been somewhat effective, but requires rebuilding each spring. We believe that some permanent solution to the flow field problems at this site should be implemented. The project owners have agreed, but there is no timetable for the design and implementation of a solution at present.
- **Entrainment of Atlantic salmon smolt in the power canal** - Occasionally, significant numbers of Atlantic salmon smolts are seen in the project forebay. When asked, A&D has agreed to shut the project down for a day and drain the power canal. This seems to flush the smolts from the canal though it is uncertain how long smolts stayed in the canal prior to being freed or if there were losses due to turbine passage. Possible causes for this increased entrainment include the reduced operation time of the automated trash rack rakes at the head of the power canal, or the reorientation of the trash boom at the headgate. Under previous ownership the automatic rakes operated continuously, A&D have modified them to part time operation. Also, these racks also serve as fish exclusion structures and the noise/motion of the automatic rakes may have helped keep smolts away from the racks. These racks are plastic and somewhat flexible so it is possible that holes or wide gaps have formed in these racks that are allowing the smolt to enter the power canal. We have suggested replacing the plastic racks with normal steel racks. Angled racks (like those proposed by the US Fish and Wildlife Service when the Fishway was designed) may be required.
- **Maintenance of upstream eelway** - In 2001 grant funding was used to install an upstream eelway at the project. The project owner allowed the installation, but operation and maintenance were to be conducted by the DFG or watershed volunteers. The eelway has demonstrated its effectiveness by passing thousands of juvenile American eels in the last 10 years. Since 2001 American eel populations have continued to decline- eventually being petitioned for listing under the federal Endangered Species Act in 2004 and 2010. The FERC licenses for the next two upstream projects on the Westfield River now contain requirements for installation and operation of upstream and downstream passage for American eel. DFG believes that it is time that the project owner formally take control of operation and maintenance of this eelway including transfer of eels from the current trap to the headpond either by daily monitoring or by extending the eelway exit to the headpond.
- **Downstream protection for adult American eels** - The project does not currently include specific structures or operational procedures for downstream eel protection. The existing 1 inch clear space racks oriented ninety degrees to canal flow provide very limited guidance to the bypass pipe and are minimally effective as an exclusion barrier. Entrainment mortality of adult eels in small units has been shown to be high due to the length of the fish.

Thank you for this opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Caleb Slater". The signature is fluid and cursive, with a long horizontal stroke at the end.

Caleb Slater, Ph.D.
Anadromous Fish Project Leader

Cc: Tom Tarpey A&D Hydro
Bob Kubit, MADEP
John Warner, USFWS
Don Pugh, TU