

## Frequently Asked Questions about Talbot Mills Dam Removal

Rev. Sept. 12, 2022

### **1) Will removing the Talbot Mills dam make flooding worse?**

No, it will reduce the chance of flooding both upstream and downstream (in the event of dam failure). The dam was not built or managed to control floodwater. It is called a “run of river” dam—what flows in flows out. If the dam were to fail, there would be a large flooding event downstream that could damage property. When the dam is removed, there will be a larger floodplain between the river and property on the banks upstream of the site, so the floodwaters will not be as high or wide. “It should be noted that even though the anticipated reduction in water surface elevations is relatively small, it is expected to result in significant beneficial impacts in reducing upstream flooding of properties and infrastructure.” (Talbot Mills Dam Removal Targeted Impact Analysis Draft Report (1/2022, p. 19; see link to public documents at end of FAQ.)

### **2) How will dam removal affect Billerica’s ability to withdraw water from the Concord River?**

A study has been completed to answer this question (“Talbot Mills Dam Removal Targeted Impact Analysis Draft Report). The results of this study show that there will be no negative impacts expected on Billerica's ability to withdraw water for the public water supply. The town of Billerica’s review of this study concurs. The minimum water depth above the town’s water intake in the Concord River during a severe drought would change from 6.1 feet to 5.8 feet , a drop of just 0.3 feet (3.6 inches). This change would not have a significant impact on the ability of the pumps to withdraw adequate water even during times of low flow in the river. Dam removal will result in less stagnant water in this section of the Concord River. This may improve the quality of water being withdrawn. Dissolved oxygen and temperature are now being monitored near the intake to understand this better. (See: Talbot Mills Dam Removal Targeted Impact Analysis Draft Report (1/2022, p. 19), Woodard & Curran, 4/15/22, Streamworks 4/15/22); link to public documents at end of FAQ.)

### **3) Won’t the river just look like muddy flats when the dam is removed?**

Numerous dam removal projects in New England show rapid plant growth in the newly-exposed banks. Exposed sediments behind dams have been found to contain significant numbers of dormant seeds that can now germinate and revegetate any exposed land.

### **4) I like fish, but how can we be sure they will actually return?**

Other dam removal projects in New England show a rapid return of migratory fish once the dam is removed. Even where there had been a fishway, the number of fish returning after complete removal far exceeds previous numbers. There is only one dam, in Lawrence, between the mouth of the Concord River and the ocean. In recent years, the fish lift at this dam has passed as many as 450,000 river herring and 90,000 shad in a single season. There is one dam (Centennial Island) on the Concord River below Talbot Mills; this dam has a fish ladder in place. The Concord River has been identified by both federal and state fisheries agencies as one of the best possible places in the Merrimack watershed to remove a dam for the benefit of restoring migratory fish. To help quicken the pace of restoration, the U.S. Fish and Wildlife Service and Mass. Division of Marine Fisheries have been transporting spawning herring and shad from the Essex Dam on the Merrimack River in Lawrence to suitable areas in the Concord and

Sudbury Rivers. Offspring of these fish should imprint on the rivers and return to the Concord River in three to five years as adults.

**5) Who decides whether to remove a dam?**

It is the dam owner's decision whether to remove a dam. The owner of the Billerica dam does not want the cost nor the liability of owning the dam. He has offered it several times to other parties but no-one else wanted the cost or liability either. The dam owner is pursuing dam removal, not building a fishway.

**6) Why can't the owner just build a fish ladder?**

Fishways are expensive, are not nearly as effective at passing fish as dam removal, and often need significant and constant maintenance to operate correctly. Fishways would only meet the needs of half the fish species that we want to help pass upstream at this dam. Fishways also don't provide the same benefits for other species that live in and near the water, such as amphibians, reptiles, and mammals. During the fish migration season dam owners would be required to provide daily operations and cleaning to assure continuous function of the fish ladder. A fishway would not result in water quality improvements either. The dam owner would still have to repair the dam and maintain liability insurance.

**7) Why not own a dam?**

Dam owners are responsible for the maintenance, repair and safety of their dam. They must conduct periodic safety inspections and have liability insurance. These may amount to significant expenses. The Talbot Mills Dam is classified by the Office of Dam Safety as a "Significant Hazard Potential (Class II)" structure, defined as: "Dams located where failure may cause loss of life and damage to home(s), industrial or commercial facilities, secondary highway(s) or railroad(s) or cause interruption of use or service of relatively important facilities." Expenses can significantly add up for owners of dams to meet dam safety regulations and permitting requirements.

**8) How will wetlands be affected if the dam is removed?**

There is unlikely to be any overall loss of wetlands. The land under the water generally turns into new bordering vegetated wetlands. The wetland locations may change somewhat, but the functions and benefits of wetlands will not be significantly impacted.

**9) Who will pay for this dam removal?**

Funding for the removal of the Talbot Mills dam will be undertaken by a combination of state and federal granting sources targeted at restoring aquatic resources and improving climate resiliency and infrastructure. The owner of this dam is also providing support for its removal.

**10) Why remove the dam now?**

The owner wants to remove the dam and have no more expenses or liability for its upkeep. Removing the dam now would assist current efforts to restore migratory fish to the watershed as part of improving

the health of the Gulf of Maine fisheries. As droughts and floods become more severe, the benefits of dam removal increase. There is an urgent need to build a more resilient river system.

### **11) What is the permitting process?**

All dam removal projects in Massachusetts require an elevated level of permitting, regulatory review, and associated public process and participation. This process will commence in the fall of 2022. At a minimum, a dam removal project such as the Talbot Mills will require the following reviews, permits and regulatory oversight:

- Mass. Environmental Policy Act (MEPA): Analysis and Review (MEPA Office)
- National Environmental Policy Act (NEPA): Analysis and Review (NOAA)
- Mass. Wetlands Protection Act & Billerica Wetlands Protection Bylaw: Order of Conditions (Billerica Conservation Commission)
- Clean Water Act (Section 401): Water Quality Certificate (Mass. Dept. of Environmental Protection)
- MGL Chapter 253 (Mills, Dams and Reservoirs): Dam Safety Permit (Mass. Office of Dam Safety)
- Clean Water Act (Section 404): Dredge or Fill Permit (US Army Corps of Engineers)
- Rivers and Harbors Act (Section 10): Permit (US Army Corps of Engineers)
- Mass. Public Waterfront Act (MGL Chapter 91): Permit/License (Mass. Dept. of Environmental Protection)
- Bridge Scour Review (Mass. Dept. of Transportation)
- Billerica Historic Districts Bylaw: Certificate (Billerica Historic Districts Commission)
- National Historic Preservation Act (Section 106): Consultation with Consulting Parties

### **12) How will dam removal affect flooding in the Sudbury and Assabet Rivers?**

Hydraulic modeling confirms that there are no significant changes to water surface elevations up to the first dams on the Sudbury and Assabet Rivers. The dam removal would have no effect upstream of those dams. “Reductions in water surface elevation are limited to less than 0.3 feet (3.6 inches) for the 100-year (1% AEP) flow and less than 0.1 feet (1.2 inches) for the 500-year (0.2% AEP) flow.” (“Upstream Extension of Hydraulic Model for Sudbury & Assabet Rivers Memo” (6/3/22, p. 4); see link to public documents at end of FAQ).

### **13) Will the Fordway Bar upstream of the dam in Billerica act as a dam or will water flow through it during low flows? Will the Fordway Bar prevent the Concord River from becoming free-flowing?**

The Fordway Bar at the Pollard St. bridge is a natural outcropping of rock that will maintain higher water levels above it and dampen the influence of the Talbot Mills dam removal upstream. However it will not act as a complete dam. River flow above Fordway Bar will always equal flow below the bar as it is a natural feature with varying elevations and rocks, boulders, etc. through which water will find a path. Flow may be concentrated on the lower side of the channel on river left (facing downstream) during low flows.

**14) Won't the Centennial Island dam downstream of the Talbot dam prevent this from becoming a real free-flowing river?**

Like the Talbot Mills dam, Centennial Island dam is a small run-of-river dam, meaning that inflow to the dam equals outflow below the dam at any given time. It cannot be used to store and release water like a large flood control dam. There is currently a fishway at the Centennial Island dam and work is underway to design a "rock ramp" natural fishway that will improve upstream fish passage effectiveness. Removal of the Talbot Mills Dam would restore the free-flowing nature of the Concord River above the Centennial Island dam to well into the Sudbury and Assabet Rivers upstream. This would restore access to over 35 miles of migratory fish habitat on the mainstem Concord, Assabet, and Sudbury Rivers, plus more than 100 miles of habitat on tributaries to these rivers and at least 260 acres of lake/pond habitat.

**15) Will dam removal help solve the invasive water chestnut problem upstream of the dam?**

The impoundment at the Talbot Mills dam is infested with invasive water chestnut (*Trapa natans*) which forms a dense mat in the summer, smothering aquatic life and outcompeting native wetland and aquatic plants. Water chestnut is an annual plant that thrives in shallow, slow-moving nutrient-rich water and drops its nuts into the soft sediment. During the dam removal, a "silt curtain" will be installed to hold the fine sediment in place and prevent a large number of the nuts from floating downstream. Once these shallow areas dry out the nuts can no longer germinate and grow, thus resolving much of the water chestnut problem.

**16) Are there any state or federal laws that require dam owners to provide fish passage?**

Mass. General Laws (MGL), Chapter 130/Section 19, enables the director of the Mass. Division of Marine Fisheries to "determine whether existing fishways, if any, are suitable and sufficient for the passage of such fish in such brooks, rivers and streams or whether a new fishway is needed for the passage of fish over such dam or obstruction; and he shall prescribe by written order what changes or repairs, if any, shall be made therein..." In practice, the Division of Marine Fisheries uses this statute to educate dam owners about their responsibility to provide passage and then find and implement the solution that is best for the dam owner and the fish in question. In this situation, dam removal would have the most beneficial impacts and the owner of the dam no longer wanted to face the liability and expenses associated with dam ownership. There are no federal laws that specifically require that dam owners provide fish passage unless the dam is licensed by the Federal Energy Regulatory Commission. This may be of interest to dam owners upstream.

**What if I still have questions?**

Questions are good! Go to this website for access to the public documents: [www.oars3rivers.org/our-work/river-restoration](http://www.oars3rivers.org/our-work/river-restoration). We revise this FAQ as new questions come in.

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