MAIN STREET DAM REMOVAL & DANFORTH BROOK RESTORATION PROJECT

What You Should Know

The Main Street Dam is located on Danforth Brook in Hudson, Massachusetts, a tributary to the Assabet River. The dam was originally constructed to support historic industrial uses, reflecting a time when local waterways powered mills and early industry. Today, the dam no longer serves its original purpose and is an aging structure that presents ongoing safety, maintenance, and regulatory challenges.

The dam owner is exploring long-term solutions for the site, including potential removal of the dam. Removing the dam could improve public safety, reduce flood risk, restore more natural stream flow, improve water quality, enhance wildlife habitat, and allow fish and other aquatic species to move more freely along Danforth Brook.

The project is being evaluated for dam removal in coordination with local and state partners. Planning efforts are underway to better understand site conditions, potential impacts, and the benefits of dam removal.

Danforth Brook flows into the Assabet River, which is part of the 399-square-mile Sudbury–Assabet–Concord (SuAsCo) watershed. The Assabet River flows north to Concord, where it joins the Sudbury River to form the Concord River, which then continues north to the Merrimack River in Lowell. From there, the Merrimack flows northeast to the Atlantic Ocean.

Historically, dams like Main Street played an important role in local industry, but they also altered natural river systems. Today, aging dams can fragment habitat, block fish passage,

degrade water quality, and contribute to localized flooding. Evaluating the future of the Main Street Dam is part of a broader effort to improve the health and resilience of the Assabet River and the larger SuAsCo watershed.

Frequently Asked Questions

1) Why is the dam being considered for removal?

The dam is classified as a High hazard dam and rated by the Massachusetts Office of Dam Safety to be in Poor condition. The hazard rating means that in the hypothetical event of a dam failure, it would likely result in a loss of life and create much economic damage. The dam is rated in Poor condition because the configuration cannot pass the required spillway design flood in accordance with the Massachusetts Dam Safety Regulations. During a large storm event, there could be damage to the dam structure leading to excessive flooding in the downtown Hudson area.

2) Will the dam removal create more flooding for abutters?

Dam removals are carefully modeled and designed to avoid increasing flood risk on upstream and downstream abutters. Dams like the Main Street Dam weren't built to be a flood control dam, and while in place, the dam doesn't store flood water. A fixed amount of water is permanently stored below the spillway crest of the dam, but floodwaters flow over (or around) the dam at generally the same rate as they flow into the pond. Once the dam is removed, the same amount of water moves through the former dam site, but without the stored volume of water in the pond posing the additional risk. Additionally, the lower initial water level within the former pond basin results in decreasing risk of flooding for upstream abutters.

During the dam removal construction, the water is released from the pond slowly to avoid flooding downstream abutters.

3) Will the brook look like muddy flats when the dam is removed?

For a short time, the brook will 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 exposed land. Depending on the time of year when a dam is removed, the former pond area typically shows initial signs of revegetation within a few weeks and is well vegetated by the end of the first growing season after the initial exposure of the former sediment.

4) Who decides to remove a dam?

It is the dam owner's decision whether to remove a dam. The owners of the Main Street dam do not want the cost nor the liability of owning the dam. Because the dam is a high hazard dam in poor condition, the Office of Dam Safety (who regulates these structures) is ordering the dam owner to either upgrade or remove the dam. Upgrading the spillway capacity of the dam to modern standards would entail significant expense while committing the dam owner of ongoing maintenance and liability. Because this does not make sense, the dam owner has chosen dam removal as the preferred option.

5) 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 Main Street dam is classified by the Office of Dam Safety as a "High Hazard Potential" 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.

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

There is unlikely to be overall loss of wetlands. The land under the water generally turns into new bordering vegetated wetlands, floodplain, or riverfront area. The wetland locations may change somewhat, but the functions and benefits of wetlands will not be significantly impacted. The overall health of the stream and wetland system will improve by restoring the natural dynamics and configuration of the resources to a condition more similar to that which may have existed prior to industrialization.

7) Who will pay for this dam removal?

Funding for the removal of the Main Street dam will be undertaken by state granting sources targeted at restoring aquatic resources and improving climate resiliency and infrastructure. The owners of this dam are also providing support for its removal.

8) What is the permitting process to have a dam removed?

All dam removal projects in Massachusetts require an elevated level of permitting, regulatory review, and associated public process and participation. This process commenced in the winter of 2025 with informal outreach to agencies. At a minimum, a

dam removal project such at the Main Street dam will require the following reviews, permits and regulatory oversight:

- MA Environmental Policy Act (MEPA): Analysis and Review (MEPA Office)
- MA Wetlands Protection Act & Hudson Wetlands Protection Bylaw: Order of Conditions (Hudson 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)
- National Historic Preservation Act (Section 106): Consultation with Consulting Parties

The regulatory review process typically takes at least a year of reviews and can take up to three years, depending on the final design and particular review criteria that are applicable to a dam removal project.

9) How will dam removal affect wildlife in Bruce's Pond?

Restoration causes an initial disruption when it kick-starts natural processes that provide long-term benefits to habitats, ecosystems, and wildlife. From the initial dam removal and long-term change in habitats at Bruce's Pond, there may be changes in which species prefer and thrive in the area, and which do not. This is typically seen the most in the fish populations. Bruce's Pond likely supports warm water fishes such as large and small mouth bass, sun fish, and pumpkin seed. Some of these species may persist, but some may be displaced as the stream conditions improve for cold water fish such as trout and sculpin. Mammals are typically not displaced and may thrive in the larger wetland areas. Bird species, such as geese and swans use both pond and stream with wetland habitats for nesting and foraging and would be expected to continue to use Bruce's Pond after removal. Other wetland bird species, such as red-winged blackbirds, would be expected to move into the area.

10) Could the exposed land be developed after dam removal?

No, newly exposed land will still be within the deeded boundaries of Bruce's Pond but will still be a wetland resource area under the state Wetlands Protection Act and Hudson's Wetlands Bylaw, among other protections. As such, the resource areas themselves, and a

25-foot no-build area are protected by the Hudson Wetlands Bylaw from future development.

11) How about the impact on dam removal on the Town of Hudson's history?

The Main Street Dam itself, along with the 136 Main Street parcel (formerly Larkin Lumber) that abuts and includes the southern shoreline of Bruce's Pond, are located within the Hudson Silas Felton Local Historic District and are under the jurisdiction of the Hudson Historic District Commission. The project will continue to coordinate with the Commission and other relevant state and federal agencies as planning moves forward.

12) What will happen to the sediments in the pond?

The sediment in the pond has been preliminarily assessed, and test results did not exceed regulatory thresholds, meaning that the sediment quality was consistent with levels considered protective of human health and the environment. Currently, the design includes allowing some portions of the sediment in the impoundment to passively release downstream into Danforth Brook and the Assabet River. This is called "downstream nourishment" and is an accepted part of river restoration where dams have cut off sediment and nutrient inputs to areas downstream of the dam for generations. Additional sediment sampling, analysis, and consultation with the Massachusetts Dept. of Environmental Protection will be undertaken before this strategy is finalized.

13) What if I still have questions?

Questions are good! Visit our website for more information, public documents, and updates on the project (Main Street Dam webpage).

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FOR THE SUDBURY ASSABET & CONCORD RIVERS

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