



## FAQs: Yarmouth Fishways and Dams

### BACKGROUND

The Town of Yarmouth owns the Bridge Street dam and the East Elm Street dam. Both dams are in disrepair and neither dam has any purposeful use. Power production ceased at the Bridge Street dam prior to 2015. Both fishways—structures built to help fish over dams—are currently nonfunctional, beyond repair, and by today's standards poorly designed for migrating fish. In 2019 the Maine Department of Marine Resources notified the Town of Yarmouth that rehabilitating the current fishways would be a wasted effort due to their outdated technology and limited benefit to sea-run fish species.

### What is the cost to replace the fishways?

New fishways would cost approximately \$1,000,000 each, based on recent fishway construction in Maine on a similar sized river (Trout Unlimited, 2020). The Town of Yarmouth is responsible for the fishways and for fish passage.

### What is the cost of dam removal?

Based on recent dam removal costs of similar sized dams in Maine, the expected cost to remove Bridge Street and Elm Street dams is less than \$300,000 each (Trout Unlimited, 2020). The Town of Yarmouth would be responsible for a portion of the cost of dam removal. Government agencies and environmental foundations also provide grant funding for dam removal (but typically not for fishway construction). The Royal River Alliance wishes to help minimize the burden of the cost of safe and responsible dam removal on the Town and on local businesses and property owners situated riverside and harborside. This could involve fundraising, grant-seeking, volunteerism and other means of project assistance.

### Will the fish return after dam removal?

Yes, when dams and barriers are removed, sea-run fish return! The Royal River is a relatively small river and would not sustain huge runs. However, improving the river habitat and access to the 141 sq. mi. of watershed will likely benefit species including American eel, American shad, alewives, blueback herring, sea-run trout, and even possibly Atlantic salmon. Restoring fish passage can benefit mammals and avian predators, such as egrets, otters, eagles, ospreys and loons. *"Restoring the Royal River will likely support the federally listed threatened Atlantic Sturgeon and endangered Shortnose Sturgeon overwintering habitat for adults; and reproductive and nursery habitat for egg and juvenile life stages."* —US Army Corps of Engineers, 2020.

### Are there toxins in the dam sediment?

Sediment samples from above the Elm St. and Bridge St. dams were tested for chemical contamination and the results concluded there is minimal potential risk of adverse effects to aquatic life (Stantec, 2013 and Stantec, 2016). While one of the ten sediment samples from the Bridge St. dam impoundment had polycyclic aromatic hydrocarbons and mercury levels of concern, collectively the ten samples did not. These compounds were found in sediment adjacent to the 325-acre Village storm drain outlet and run-off from the Rte. 1 overpass. They are largely the result of incomplete combustion of petroleum & wood, engine oil spillage, and fossil fuel derived materials like asphalt. The Maine DEP confirmed Stantec's conclusion that the sediment from the Bridge St. dam impoundment is clean overall and poses minimal



potential risk to aquatic life. This conclusion allows dredged materials to be safely disposed at reasonable cost at a site designated in Casco Bay.

### **Do the dams hold back sediment from the harbor and river channel?**

With or without dams, the same amount of sediment is transported down the river and into the harbor, river channel, and Casco Bay. *However, more than 90% of the sediment is flushed to the bay and does not settle in the channel or harbor due to its small grain size.* Some amount of sediment may be "stored" in the water impoundment behind each dam and may be transported a single time after a dam is removed. Roughly 143,000 cubic yards of material was removed during the 2015 harbor and channel dredge, which accumulated over 18 years (Portland Press Herald, 2015). The volume of sediment behind the Bridge Street dam is less than 5,000 cubic yards (Stantec, 2015)—only 3.5% of the amount removed during the last dredge. The volume of sediment in the Elm Street dam impoundment is larger (the exact amount is unknown) and likely equivalent to no more than a few years of accumulation. Following the removal of the Elm Street dam, river channel migration and long-term bank erosion in the impoundment are not expected to occur; therefore, sediment production within the river will not significantly increase. In addition, there are limited amounts of sediment in the river for the first 3 miles upstream of the Elm Street dam. This section of the river has very large holes (some 25 feet deep) that can trap sediment as the river reworks the channel over time. Taken together, dam removal is unlikely to significantly increase sediment transport and delivery to the harbor (Stantec, 2013 and Fields Geology Services, 2013).

### **Who dredges the harbor and river channel?**

In the Royal River harbor, the river channel was designated a federal navigation channel in 1960. Since that time, the US Army Corps of Engineers dredges part of the harbor and channel. It was last dredged in 2015. Privately owned Marinas and the Town of Yarmouth are responsible for dredging beyond the federal navigation channel within their slips and mooring areas. Marine clay soils form a large part of the Royal River watershed, resulting in the familiar chocolate brown water. We cannot alter this underlying geology. The Royal River harbor has been dredged periodically since the Civil War era and will continue to be dredged for as long as there is navigation in the harbor and river channel, with or without the dams.

### **Will recreational use of the Royal River change with dam removal?**

The removal of the Elm Street dam would lower the water level of the six-mile impoundment behind the dam. Instead of flat water, the river would look and act more like a river. The canoe put-in at the Yarmouth History Center would need to be moved upstream because the water would be flowing toward a cascade. However, Elm Street dam removal will also result in significant beneficial impacts in the upstream impoundment like expanded fishing of stocked fish with the addition of sea-run fish species and new opportunities to observe diverse wildlife species that target migratory fish, such as eagles, osprey, river otters, egrets and kingfisher. The removal of the Bridge Street dam would likely improve fishing along the pathway up to the Elm Street dam. There's very little recreation in the river now between the two dams.

For more FAQs, in-depth answers and references, please visit our website: [RoyalRiverAlliance.org](http://RoyalRiverAlliance.org)

(updated 9-25-2020)