



SITE SELECTION OVERVIEW



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Since inception, the Boardman River Implementation Team (IT) has considered solutions for Union Street Dam that account for invasive sea lampreys and enhanced fish passage. A local Sea Lamprey and Fish Passage Working Group was convened between 2012 and 2016 with the objective of identifying potential solutions for Union Street Dam that allowed passage of native fishes and exclusion of invasive sea lamprey. The plan was always to modify the lowermost dam (Union Street Dam) to provide functional connectivity to Great Lakes. Union Street Dam is a deteriorated structure that needed significant repair or replacement and does not provide passage for any native fishes. The U.S. Army Corps of Engineers final Detailed Project Report and Environmental Assessment for the removal of Boardman and Sabin dams and the modification of Union Street Dam focused on the upstream passage of lake sturgeon via trap and transfer with passage downstream accommodated by a modified fish way at Union Street Dam. Since 2016, the vision for FishPass has been heartily embraced by the Sea Lamprey and Fish Passage Working Group and the IT as a solution for Union Street Dam preferable to a single species trap and transfer. Below details the process and timeline for the decision by the IT, Michigan Department of Natural Resources (MIDNR), and the City of Traverse City to host FishPass.

Site selection for the FishPass project was accomplished through a structured decision analysis. In April 2016, a project planning team was formed consisting of Great Lakes Fishery Commission (GLFC) staff, 8 fish passage and behavior experts, and 2 U.S. Fish and Wildlife Service (USFWS) sea lamprey biologists. The team generated a list of 17 site selection criteria (for simplicity combined into 13 criteria in Table 1 below). A total of twelve sites were considered during the decision analysis, including the Cheboygan River (MI), Manistque River (MI), Boardman River (MI), Bad River (MI), Whitefish River (MI), Little Manistee River (MI), Ocqueoc River (MI), Conneaut Creek (OH), Grand River (OH), Thunder Bay River (MI), Tittibawassee River (MI), and Saginaw River (MI). Each site was scored for each of the 17 criteria – those that met a criterion scored 3pts, somewhat met a criterion 2pts, and failed to meet a criterion 1 pt. Scores for each site were tallied, sites were then rank ordered, and the top six sites (i.e., Cheboygan, Ocqueoc, Thunder Bay, Boardman, Little Manistee, and Grand Rivers) were visited by members of the planning team during July 2016. During site visits, local DNR and USFWS biologists, and Dam operators were consulted. At the conclusion of this process, the Boardman River Union Street Dam site ranked highest based on the selection criteria and site visit because it was the right size for FishPass, provided appropriate hydraulic head, had a sea lamprey run that required frequent treatment, was a failing infrastructure, and most of all, the IT was seeking a solution for Union Street that allowed them to achieve the goal of restoring connectivity for native fishes. The other sites failed to meet many criteria and most of them had significant issues with respect to project timing, needs, and site specifications that made them illogical and infeasible options for FishPass.

The Boardman River Union Street site received strong support as the FishPass project site from the Boardman River IT in July 2016, Michigan Department of Natural Resources in August 2016, and the City of Traverse City in September 2016.



Table 1. FishPass site selection criteria and rationale provided by project planning team.

Criterion	Rationale
1. River size, gradient, & groundwater discharge	River provides appropriate hydraulic conditions and water for fish passage experiments; 730 km ² watershed; gradient suitable for project
2. Consistent sea lamprey runs and populations of desirable fishes to pass	Consistent, but small run of sea lamprey; good runs of Pacific Salmon; walleye, pike, lake sturgeon, white sucker, lake trout
3. Existing infrastructure, access, & safety	Infrastructure owned by Traverse City; no competing interests
4. Agency support / permitting	Desire by Tribe, State, Army Corps, and City for fish passage solutions; Strong support from the Implementation Team
5. Public support	Issue about what spp. to pass; IT highly supportive as a solution to Union Street Dam is sought
6. Controls and replicates	Possible
7. Dam attributes	No competing interests; property can be modified; water levels above dams to be maintained
8. Availability of fish and habitat data	Assessment data available for sea lamprey and fishes
9. Adaptability of site / Compatibility with monitoring methods	The site is fairly adaptable given that the entire structure could be modified or rebuilt; site could accommodate monitoring technologies
10. Proximity to research personnel	Scientist accommodations required; facilities for housing lamprey, equipment, etc; town is busy
11. Availability of land	City park land available; can work within existing footprint
12. Representativeness	Represents a range of conditions applicable for other midsized systems
13. Desirable upstream populations to protect / listed species	Native lampreys, brook trout

ABOUT FISHPASS

FishPass is the capstone of a ~20y restoration project on the Boardman (Ottaway) River, Traverse City, Michigan, re-connecting the river with Lake Michigan. FishPass will replace the deteriorating Union Street Dam with a new, complete barrier to all fish that will have the ability to sort and selectively pass desirable fishes while blocking harmful invaders like sea lamprey. While fully automated selective passage is the long-term goal of the project, passage of any fish during the initial 10-yrs will be coordinated with fishery management agencies, limited in number, and restricted to fishes native to the upper Great Lakes.