

BROWN BRIDGE DAM REMOVAL FINDING OF NO SIGNIFICANT IMPACT

PROPOSED ACTION

The four dams (Brown Bridge, Boardman, Sabin and Union Street) on the Boardman River System (the Boardman Dams) are aging structures that are damaging the ecosystem of the project area. The proposed action considered in this Environmental Assessment (EA) is to remove Brown Bridge Dam and promote the restoration of the Boardman River and its associated bottomlands. The proposed action will increase habitat continuity and restore the thermal and hydrologic regime of the Boardman River to be consistent with a coldwater river. At Brown Bridge Dam, it is estimated that the restored river channel would be approximately 11,900 linear feet, with total functional benefits (e.g., flow and sediment transport processes upstream of Brown Bridge Pond) to approximately 17,000 linear feet of river.

ALTERNATIVES CONSIDERED

Alternatives considered included the No Action alternative and a dam removal alternative that included a blended approach to ecosystem restoration that incorporates both active and passive restoration measures. Alternatives considered in detail in the EA are described as follows:

- Alternative A – **NO** Action. Keep the dam, powerhouse, pond, etc.
- Alternative B – Dam Removal with Blended Restoration (Design Concept 2). Remove the dam, powerhouse, and pond; initiate blended approach for restoration and actively manage sediment in the delta.

SELECTED ALTERNATIVE

For the reasons briefly presented below and based on an evaluation of the information contained in the supporting reference listed below, I have determined that funding Alternative B, entailing the removal of Brown Bridge Dam in Traverse City, MI and its accompanying sediment management and restoration measures is not a major Federal action that would significantly affect the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969. An Environmental Impact Statement will accordingly, not be prepared.

Reasons:

1. Federal and State natural resource agencies have concluded that one of the most effective means of restoring the fish passage and natural functions of the Boardman River is to remove Brown Bridge Dam and promote the restoration of the Boardman River and its associated bottomlands. The proposed action increases habitat continuity and restores the thermal and hydrologic regime of the Boardman River to be consistent with a coldwater river.
2. The presence of Brown Bridge Dam has the effect of segmenting the Boardman River into three discontinuous reaches that include the Boardman River from the "Forks" area to Brown Bridge Pond, Brown Bridge Pond, and the Boardman River from below Brown Bridge Dam to Boardman Pond. Removal of the dam enhances resident brook and brown trout populations and other elements of the aquatic community by removing the source of habitat fragmentation and restoring the opportunity for movement within the Boardman River.
3. The removal of the dam restores the natural downstream transport of woody debris and plant propagules critical to sustaining healthy populations of trout and other desirable fish and invertebrate species.

4. Removal of the dam and restoration of the river will not significantly alter flood discharge rates or flood elevations. Additionally, the impoundment of the Boardman River at Brown Bridge Dam has had the effect of altering surface water and groundwater flow patterns. The Brown Bridge Dam not only creates still water ("lentic") habitat within the pond itself (resulting in significant sedimentation), but it also has the associated effect of creating backwater within the river upstream of the pond. Removal of the dam restores the natural flow patterns of the river, restores the natural groundwater flow and discharge characteristics and does not adversely affect groundwater users in the vicinity of Brown Bridge Pond.
5. Prior studies on the Boardman River have demonstrated that Brown Bridge Dam causes a disruption in the normal thermal regime (water quality) of the river. Removal of the dam effectively removes the source of the thermal disruption (i.e., the dam and accompanying impoundment) and restores the normal temperature patterns of the aquatic environment, thereby benefiting the restoration of natural aquatic communities.
6. Removal of the dam coupled with sediment management and river restoration activities effectively restores the natural sediment transport processes of the Boardman River. This is accomplished by eliminating the altered surface water flow patterns (see above) and by creating a river channel that has a cross section and profile that will minimize adverse sediment transport to downstream areas, and is capable of conveying natural flows (and associated sediment transport) of the Boardman River. Potential adverse impacts of sediment remobilization and transport are mitigated through extensive sediment management measures (excavation, sediment traps, etc.). Potential elevated contaminant levels in sediments are mitigated by a commitment for additional sampling following drawdown, consultation with Michigan Department of Natural Resources and Michigan Department of Environmental Quality, and the use of management controls as necessary to minimize exposure to users.
7. As a result of the above referenced habitat fragmentation and its hydrologic alterations, habitats within the Boardman River and its associated bottomlands have been modified and degraded, resulting in adverse impacts on aquatic species mix, diversity, and populations. Removal of Brown Bridge Dam addresses this habitat degradation. Restoration of a coldwater thermal regime and naturalization of river aquatic biotic communities offsets the loss of cool water fish community and associated habitats of Brown Bridge Pond.
8. The thermal disruptions described above have had a resultant impact upon specific coldwater species (e.g. brook and brown trout) and their composition and abundance in the resident fish community. The removal of Brown Bridge Dam eliminates the disruption in the aquatic communities within the Boardman River in the vicinity of Brown Bridge Pond.
9. Restoration of bottomland habitats will be accomplished through long-term successional development that offset impacts associated with the displacement of resident water-dependent species.
10. Sensitive water dependent wildlife species will be displaced to other habitats in the region as a result of habitat conversion. However, these effects are offset by potential restoration of habitats suitable to sensitive species such as wood turtle, Blandling's turtle, eastern massasauga (candidate species under Endangered Species Act) and other species. There is potential disturbance to bald eagle pair due to alteration/loss of foraging area.
11. Potential effects to wetlands are offset by an estimated net gain of approximately 21.6 acres of wetlands due to hydrologic alteration and bottomland restoration.

12. Removal of the dam also has benefits in diminishing zebra mussel habitat suitability by eliminating the slow flowing water of the pond that favors the establishment and reproduction of zebra mussels. Removal of established populations known to occur on the hard substrates of the powerhouse will also reduce zebra mussel abundance in the river.
13. The Boardman River upstream of the project area is a designated Natural River under the State of Michigan Natural Rivers Program. Removal of the dam and restoration of the bottomlands within Brown Bridge Pond provides an opportunity to restore additional areas to highly functional natural rivers that would be eligible for inclusion in the Michigan Natural Rivers Program.
14. Dam removal and its associated ecosystem restoration has the effect of positive economic benefits due to increase use associated with fishing and paddling.
15. There are no historical or archaeologically significant properties impacted by the project.
16. Alteration of visual landscapes due to removal of powerhouse and pond, are offset by progressive replacement of unsightly exposed bottomlands with a vegetated and restored ecosystem.
17. Removal of Brown Bridge Dam and associated structures eliminates liability associated with the aging structure.

Supporting References:

1. Environmental Assessment

CONCLUSION

The selected alternative does not constitute an action that normally requires preparation of an Environmental Impact Statement (EIS). The selected alternative will not have a significant effect on the human environment. Negative environment impacts that could occur are minor or moderate in intensity. There are no significant impacts on public health, public safety, threatened or endangered species, or other unique characteristics of the region. There are no unmitigated adverse impacts on sites or districts listed in or eligible for listing in the National Register of Historic Places. No uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any Federal, State, Tribal or local environmental protection law.

Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared.

Approved: Charlie Wooley

Approved:

ACTING Midwest Regional Director, USFWS,