FINAL NARRATIVE REPORT

HEALING THE BEAR: ENGINEERING ALTERNATIVES FOR THE LAKE STREET DAM (#1867)

Grantee Organization: Tip of the Mitt Watershed Council

Background/Overview

1. An engineering alternatives study for the lowermost barrier on the Bear River, the largest tributary to Little Traverse Bay, was completed. Potential alternatives for the Lake Street dam were assessed and included complete or partial removal, modification, or no change. Project partners conducted community engagement efforts to solicit support, receive feedback on potential design alternatives, and highlight the connection between the Great Lakes Fishery and coastal tributaries. The study will serve as the basis for prioritizing the future management of the dam by providing the City with critical information that will help direct the management of this structure and, more importantly, the future of the Bear River and Little Traverse Bay fisheries.
2. The project was completed as originally intended. Engineering alternatives were explored and as a result, there is a greater understanding of the potential benefits and constraints moving forward with each alternative. Ideally, the study could have encompassed more aspects of this process and explored, with greater specificity, the location and general design of a replacement lamprey barrier further upstream. Given the scope of work, budget, and the need to continue the conversation with stakeholders, no conclusion has been drawn about how lamprey management should be pursued in the event the Lake St. dam is removed or modified in a way that allows sea lamprey passage. Nonetheless, the study has revealed the options that, if fully engineered, will allow for improved aquatic connectivity between the Bear River and Little Traverse Bay.

Outcomes

3. Several important outcomes have resulted as part of this project. The City of Petoskey is now better informed and more aware of the challenges of how to move forward with next steps. There are many stakeholders with a range of priorities that must be heard. Ultimately, the decision to move forward will need to be based upon these interests and available funding. There is no one obvious strategy, unfortunately, but rather more discussion is needed to satisfy all concerns related to the management of the dam. The other important outcome, related to the abovementioned, is that stakeholders have now begun the necessary dialogue about how to accommodate each other's priorities. These projects are more complex than one may think and require ample time and resources to move forward.
4. Activities that were pursued include both the engineering alternatives study itself, but also the convening of a group of stakeholders with varying interests, perceptions, and priorities. Also, the project included public engagement to try to better understand the community's interests and priorities. We feel we provide opportunities to hear from the community and achieved a good result, although we fully recognize we did not hear from many of those who likely opposed modifying or removing the dam.
5. We were hopeful to reach all users of the Bear River, including anglers, paddlers, and other recreationists. Given that the anglers are potentially most impacted by the future management of the dam, we were particularly interested in hearing from them. While we did receive feedback, it

was not as robust as we would've hoped despite many opportunities for all to provide feedback. The majority of anglers who responded to the survey are in favor of removing or modifying the dam to enhance the Bear River fishery. However, those that are opposed, we feel, were not represented in the survey results.

6. Several relationships have been strengthened through the work! The City of Petoskey has a greater appreciation for the Watershed Council's capacity to coordinate and implement projects of this scale and scope. The USFWS, DNR, MiTU and the Watershed Council have a begun a good dialogue about shared concerns and respective management strategies, but more so are committed to continuing the conversation about how to move forward.
7. An evaluation plan was not required as part of this project.

Related Efforts

8. The project originated as a standalone effort, but has generated interest and a certain degree of momentum beyond the scope of the grant. Through the grant, stakeholders recognized there is a need for a more collaborative effort to determine how to manage the Bear River for recreation, fisheries, aquatic invasive species control, and water quality. A Bear River Water Trail group has formed and many of the stakeholders included in the Lake Street Dam project will be participating in the planning effort over the next year. In other words, this project has served as a springboard for future management and planning efforts around the Bear River. The newly generated interest in the river is a direct result of the GLFT grant-funded project!
9. More attention is now being given to the road/stream crossings (RSX) on the Bear River. Although the Watershed Council has inventoried all RSX in the watershed within the last ten years, there is now more consideration of the priority RSX and how they need to be addressed to accommodate fish passage.

Communication/Dissemination

10. See below

Meetings

Bear River Work Group meetings:

2019: June 26, first meeting to introduce project

2020: January 15, OHM presented their preliminary engineering alternatives to the group.

May 6, the Bear River Work Group met via Zoom. OHM presented their further refined preliminary engineering alternatives to the group. USFWS attended the meeting as well. The plans for a virtual open house in June were introduced.

Report

- Healing the Bear: Engineering Alternatives for the Lake Street Dam by OHM Advisors

ArcGIS StoryMap

- Healing the Bear: Engineering Alternatives for the Lake Street Dam ArcGIS StoryMap (https://arcg.is/Ov4bn)

Websites

- https://www.watershedcouncil.org/lakestreetdam.html

Social Media

- Tip of the Mitt Watershed Council Facebook posts promoting public open houses and surveys

Presentations:

Public Open House, August 2019:

- https://www.youtube.com/watch?v=LGrHHTfmosI&feature=emb_title
- https://www.watershedcouncil.org/uploads/1/2/6/3/126321286/bear-petoskey_dam_fish_ppt_burroughs.pdf

Public Open House, June 2020:

- https://ohm-advisors.zoom.us/rec/play/XP9oSjYInzqh-DJIt4QaO1hFCbkopD_e33AN7WTNCZcuoevC8hMPrtZylMkynDtvHKeIg0ab97i-TV2l._ARswTcTnHDiZ5S1?continueMode=true&_x_zm_rtaid=X-xWT8M9Syi4uVGrHvNYng.1601398030558.640d498634854407bef76612d67131e7&_x_zm_rhtaid=685

In addition, Watershed Council staff presented to:

- Petoskey City Council April 2020
- Petoskey Parks and Recreation Commission August 2020

Signage: See attachments

Newsletter articles:

The Watershed Council's Current Reflections newsletter featured the project on page 7 in our Fall/Winter edition: https://www.watershedcouncil.org/uploads/1/2/6/3/126321286/2019winter-newsletter-web.pdf

A second article will appear in the Fall/Winter edition of Current Reflections, to be published 11/2020.

A guest commentary also appeared in the Petoskey News Review and can be read here: https://www.petoskeynews.com/news/opinion/opinion-jennifer-buchanan-study-to-explore-options-for-lake-street/article_872a99e9-5fae-5a47-ae74-c6f35ed3534f.html

11. The Watershed Council and project team made every attempt to publicize the project and employed print, social, and in-person outreach to be sure the greater community was engaged. One engagement tool that we developed is the ArcGIS StoryMap. (Healing the Bear: Engineering Alternatives for the Lake Street Dam ArcGIS StoryMap (https://arcg.is/Ov4bn). We believe this was a unique approach to engaging with the public. Items listed in #10 (above) further highlight our efforts.

Reflections

12. Several challenges were encountered over the course of the project, but the project team persevered! COVID-19 restrictions required the team to re-structure the second community engagement session to a virtual platform. Overall, the project required significantly more coordination and staff resources than originally anticipated. OHM Advisors spent additional time (beyond anticipated) due to the complexity of the lamprey management issue and as a result, they exhausted their budget before their work was completed in full. Nonetheless, both Watershed Council staff and OHM Advisors completed the work necessary to conclude the project.

    Another challenge that was somewhat anticipated is the resistance to the project, overall. The anglers that utilize the dam feel strongly that the dam should be left as is. Although we anticipated this, we also believed they would voice their concerns in a constructive manner. This did not happen for the most part. Negative comments were made on social media and through word-of-mouth, we learned that there was anger among those who believe the dam should stay as is. This group had every opportunity to engage in a constructive conversation about the dam and the project intent, but chose not to participate in the process.

13. I would recommend not underestimating the time it takes to coordinate a project similar in scope! I would also recommend the development of an ArcGIS StoryMap with an accompanying survey. This method is easily shareable and does not require hosting an in-person event, which oftentimes has limited attendance. The online option allowed community members a window of time to review the associated information and make informed responses to the survey. The Watershed Council is now developing StoryMaps for other projects with similar public input requirements and intends to use the platforms for future initiatives as well.
14. N/A
15. N/A

Attachments

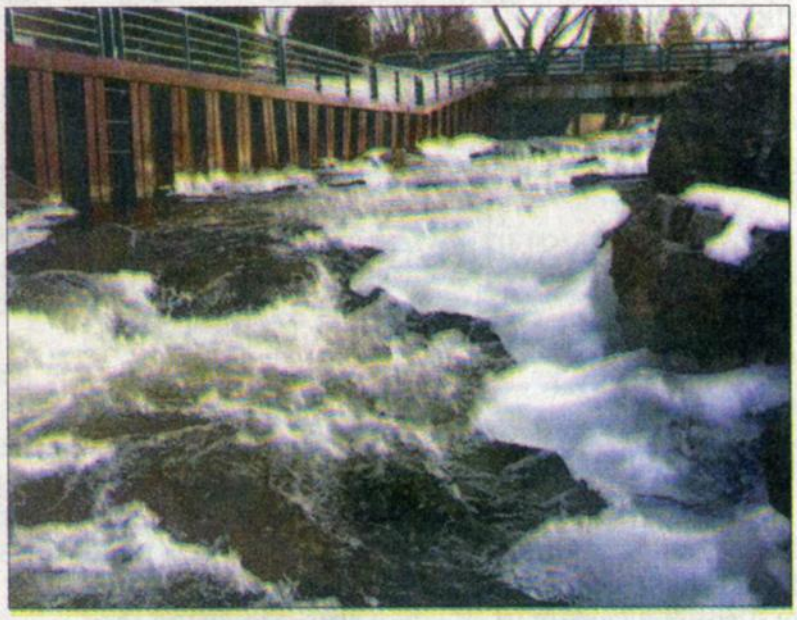
16. Please see the *Healing the Bear: Engineering Alternatives for the Lake Street Dam* by OHM Advisors.

Survey to aid in Lake Street dam project

William T. Perkins
(231) 439-9353
wtperkins@petoskeynews.com

PETOSKEY — Petoskey officials are still collecting input on the future of the Lake Street Dam.

The city has been exploring the possibility of removing the dam for some time — although officials have not definitively committed to doing so, and, even if they did choose to tear it down, the process would take several years. Nevertheless, Tip of the Mitt Watershed Council



FILE PHOTO

The Bear River is seen flowing near the dam along Lake

Figure 1: Petoskey News Review article

has obtained a grant of nearly $50,500 from the Great Lakes Fishery Trust to begin an engineering study on the site.

Petoskey officials and representatives from the Watershed Council jointly hosted an open house last week at Petoskey City Hall, allowing residents to offer their perspectives in person. But the parties are continuing to collect public input through an online survey, which can be found on the Petoskey and Tip of the Mitt websites, or at this link: https://bit.ly/2ZwT93G.

The current phase of the project would cost a total of $66,000, which includes project coordination, the engineering study, community outreach efforts and water quality monitoring. The city would be expected to foot 25 percent of those costs, or $16,500. City council members approved the grant application in February.

Prior to that, in September, a study conducted by OMH Advisors showed that the piece of infrastructure, stationed across Lake Street from city hall, is still viable, but that further investigation into the longevity and impacts of the dam were warranted. Officials estimate it to be more than 80 years old.

Many communities are engaging in "free spanning" efforts — removing barriers to the natural flow of rivers to prevent hazardous flooding and encourage natural fish migration patterns. Last year, Traverse City-based Conservation Resource Alliance completed its effort to remove the Lake Kathleen Dam on the Maple River, near Pellston. It was the last piece of a yearslong effort to remove all the barriers along that river.

But such efforts come with a number of other considerations. In addition to obtaining proper permits, permission from owners and community engagement, water quality must be monitored continually. And, while one benefit of "free-spanning" is to encourage the free flow of species, steps must be taken to keep invasive species out.

"The main focus of the engineering study is to look at alternatives to improve fish passage within the Bear River, certainly while preventing the sea lamprey from swimming upstream," Petoskey city manager Rob Straebel said at a past city council meeting.

Ultimately, the engineering study will simply offer some potential solutions for the city to have on hand should the need arise. Those solutions could mean removing the dam completely, replacing it or undertaking other long-term improvements.

The specific grant obtained for the project is the Habitat Protection and Restoration grant for Targeted Land and Capital Efforts. According to information from the Great Lakes Fishery Trust website, those grants could be awarded up to $400,000 and go to projects, including barrier removal, which "preserve essential habitat; protect, restore, and stabilize important fish habitats; and increase habitat availability."

Partners in the project include Michigan Trout Unlimited, Michigan Department of Environment, Great Lakes and Energy, U.S. Fish and Wildlife Service, Little Traverse Bay Bands of Odawa Indians and Michigan Department of Natural Resources.

A public open house on the project is slated for late August, and a website will be devoted to gaining additional public feedback. Results of the study are expected to be highlighted in another meeting in May 2020.

Friday, August 16, 2019 | Petoskey News-Review

PETOSKEY

Community open house to examine Lake Street Dam alternatives

Officials will host an open house next week to share information and receive public input regarding the study of engineering alternatives for the Lake Street Dam in Petoskey.

The open house will take place on Wednesday, Aug. 21 at Petoskey City Hall, 101 E. Lake St. The public is invited to attend one of two sessions: 3-5 p.m. or 7-9 p.m. The study, funded through a Great Lakes Fishery Trust grant obtained by Tip of the Mitt Watershed Council, will review potential alternatives for the dam, which include replacement, removal, or modification of the structure. The dam is owned by the City of Petoskey.

A 2018 inspection report produced by OHM Advisors indicated that no structural deficiencies were identified through visual observation — but that monitoring, maintenance, and further review of the dam and its impact on the Bear River are warranted.

The open house will include short presentations by the Michigan Department of Natural Resources, Michigan Trout Unlimited and the Little Traverse Bay Bands of Odawa Indians. Those unable to attend the open house will be able to provide feedback via an online survey that will be made available after August 21. Hard copies of the survey will be also be available at Petoskey City Hall. A second open house will take place in May of 2020 to provide the community with the results of the engineering study.

Figure 2: Petoskey News Review press release

PNR 6-2-20

Guest commentary

Watershed council plans open house to allow for input on Lake Street Dam

The following guest commentary was written by Jennifer Buchanan, watershed protection director with Tip of the Mitt Watershed Council.

In September 2019, Tip of the Mitt Watershed Council announced that an engineering alternatives study for the Lake Street Dam, the lowermost barrier on the Bear River in Petoskey, began thanks to support from the Great Lakes Fishery Trust. Since September, the Watershed Council has enlisted OHM Advisors, an architecture, engineering, and planning firm with offices in Petoskey, to conduct the study. Representatives of the Department of Environment, Great Lakes, and Energy (EGLE), US Fish and Wildlife Service (USFWS), Little Traverse Bay Bands of Odawa Indians (LTBB), and other resource groups, as well as community members, have weighed in on potential alternatives, including replacement, removal, or modification of the structure.

closer to their spawning grounds. If the river were passable, species of native fish that can't jump — including include lake trout, lake sturgeon, smallmouth bass, white sucker, longnose sucker, whitefish, cisco, and channel catfish — would potentially migrate upstream.

As part of the engineering study, project partners are looking for community input from anglers, paddlers, and others who value and spend time enjoying the Bear River. A survey made available in the fall yielded several key results. The majority of respondents spend their time fishing on the Bear River.

Of those, the majority fish primarily for steelhead, but many of those anglers would utilize additional fishing platforms to fish for other species if made available. The majority of anglers who responded are mostly concerned with the Bear River fishery as it relates to the future management of the Lake Street Dam. A majority who answered believe

A second public open house is scheduled for June 23 at 5:30 p.m. to review the engineering alternatives and solicit feedback from the community. OHM Advisors, the Watershed Council, resource agency representatives and the City of Petoskey will share more detailed information regarding the alternative engineering options. Those interested in attending the Zoom-based event may register at: https://ohm-advisors.zoom.us/webinar/register/WN_TZ9sPnpO-SZaAo2RLHvzJ7w.

The existing dam is a cast-in-place concrete gravity structure. A 2018 inspection report produced by OHM Advisors indicated that while no structural deficiencies were identified, monitoring, maintenance, and further review of the dam and its impact on the Bear River is warranted.

The goal of the study is to provide the city with critical information that will help direct the management of the dam, while taking into account stream health, the Bear River and Little Traverse Bay fisheries, safety, cost, and recreational opportunities.

If the Lake Street Dam were to be removed, or even modified to include a higher level of fish passage, a multitude of native and desired fish species would benefit greatly.

Currently, the Bear River receives migratory runs of brown trout, coho salmon, Chinook salmon, and steelhead. Little Traverse Bay and the Petoskey harbor are also host to fish as they stage, or move that if the structure were removed or modified for increased fish passage, they would catch more fish altogether.

For paddlers, those who responded would paddle through to the bay if the existing structure were modified or removed to allow for safe passage.

Preliminary design alternatives include modifying the height of the structure to allow for improved fish passage, while incorporating permanent or seasonal barriers to prevent the upstream migration of invasive sea lamprey.

Other options include removing the structure altogether and locating a separate upstream barrier, at a point to be determined, that would serve as a sea lamprey barrier. Lastly, the option to keep the structure in place remains a viable option.

For those unable to attend the June 23 open house, the event will be recorded and made available for viewing at https://tinyurl.com/LakeStreet-DamPetoskey.

All of those interested in providing feedback regarding the study are encouraged to provide comments after the open house at https://tinyurl.com/LakeStreetDamPetoskey.

Feedback received will be incorporated into the final engineering alternatives study, although no decisions regarding the dam will be made as a result of the study.

The city will, however, use the information gained through the study to inform future management of the dam.

Figure 3: Petoskey News Review

Figure 4: Signage posted at dam

Figure 5: Decals posted at dam

Engineering Alternatives for the Lake Street Dam: Petoskey, MI

Thank you for taking the time to share your comments. There are two ways to take the survey:

Online at http://bit.ly/2MkkG6zBearRiver

OR

Mail to: OHM Advisors

Attention: Larry LaCross

300 East Mitchell Street, Suite 2, Petoskey, MI 49770

Responses due by October 31st!

1. **Do you spend most of your time on the Bear River:**
   a) Fishing
   b) Paddling
   c) Other (please list):_____

2. **How often do you spend time fishing on the Bear River?**
   a) Almost never
   b) A few times a year
   c) A few times a month
   d) A few times a week

3. **How often do you spend time paddling on the Bear River?**
   a) Almost never
   b) A few times a year
   c) A few times a month
   d) A few times a week

4. **For anglers, do you fish mostly for:**
   a) Brown trout
   b) Brook trout
   c) Salmon
   d) Steelhead Suckers
   e) Smallmouth bass
   f) Whatever will bite
   g) Other: _____

5. **For paddlers, do you paddle mostly:**
   a) Upstream of Sheridan Street bridge
   b) Downstream of Sheridan Street bridge
   c) About the same

6. **For anglers, if the Lake Street dam was removed altogether or modified in a way to allow more fish to migrate upstream, do you believe:**
   a) You will catch more fish
   b) You will catch fewer fish
   c) It won't make a difference
   d) Uncertain

7. **For anglers, if additional fishing platforms or other structures were provided at other locations on the Bear River, would you use them to access the river to fish?**
   a) Yes
   b) No
   c) It depends on the location and type of structures

8. **For paddlers, if the Lake Street dam was removed altogether or modified in a way for a barrier-free passage, would you paddle through to the Bay?**
   a) Yes
   b) No
   c) Uncertain

9. **Is your biggest interest with the future of the Lake Street dam:**
   a) Public safety
   b) Fishing opportunities
   c) The Bear River fishery
   d) Water quality
   e) Short-term costs
   f) Long-term costs
   g) Other: _____

Additional Comments: