

# Dam Decommissioning

## BAR MILLS HYDROELECTRIC PROJECT FERC NO. 2194-ME



WHITE PINE HYDRO LLC  
A BROOKFIELD RENEWABLE COMPANY

August 2022



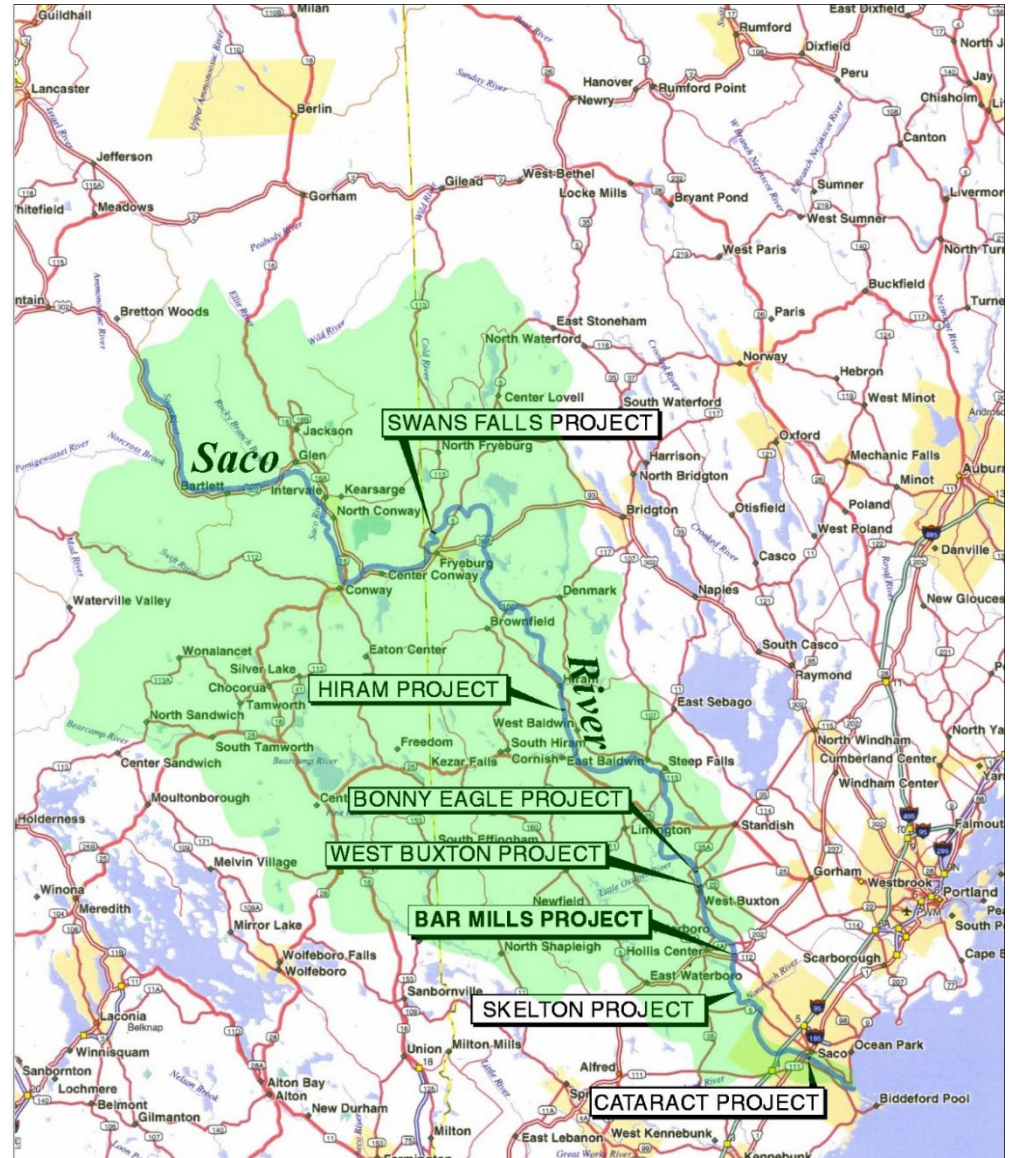
# Introductions and Meeting Purpose





# Bar Mills Project Overview

- Bar Mills Hydroelectric Project (FERC Project No. 2194) (Project) is owned and operated by Brookfield White Pine Hydro LLC (BWPH).
- The Project is located on the Saco River, in the towns of Buxton and Hollis, York County, Maine.
- 2019 Amendment to the 2007 Saco River Fish Passage Settlement Agreement has a goal of completing fish passage by May 1, 2025; decommissioning is an alternative to constructed fish passage
- Decommissioning means a project is no longer operated as a hydroelectric facility and can range from in situ (Howland Dam) to full removal (Edwards Dam)
- Decommissioning requires the Project FERC license be surrendered
- Decommissioning also requires several federal (US Army Corps of Engineers), state (Maine Department of Environmental Protection Maine Waterway Development and Construction Act), and local (Saco River Corridor Commission) permits, depending on the nature of the decommissioning



# Bar Mills Project History

- The original dam is believed to have been constructed in the 1800's to provide mechanical power to the former fiber mill.
- June 1919 - Cumberland County Power and Light Company purchased Saco River property for the construction of Bar Mills Hydroelectric Plant.
- December 1942 - Central Maine Power (CMP) merged with the Cumberland County Power and Light Company and took over the ownership and operation of the Bar Mills Hydroelectric Project.
- 1956 - CMP reconstructed Bar Mills dam and powerhouse by constructing a new concrete dam downstream of the former timber crib dam.
- 1998 – CMP sells generating assets to FPL Energy/NextEra in response to electric industry restructuring required by state law.
- 2013 – Brookfield Renewable purchases FPL Energy/NextEra generating assets in Maine and Bar Mills licensee becomes Brookfield White Pine Hydro, LLC (BWPH).
- 2017 – The Bar Mills Project ceases hydroelectric generation due to turbine cavitation associated with concrete issues.



# Why is Brookfield Removing the Dam?

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- The Bar Mills Project has significant operational challenges that have prevented the generating units from running for the last five years.
- These challenges are associated with an unavoidable condition called Alkali Aggregate Reactivity (AAR) which occurs when certain aggregates used in the concrete for the dam and/or powerhouse chemically react with silica in the cement (an ingredient of concrete) which causes expansion and cracking over a period of many years. This issue originated at construction and is common in dams and powerhouses constructed in this era (1950s). There is no long-term remedy for AAR at Bar Mills except full reconstruction.
- BWPH determined that surrendering the license and decommissioning the Project is the most viable solution in balancing operational, environmental, and future dam safety needs.
- Without an economically viable solution to return the generating units to an operable condition, Bar Mills is uniquely suited for the surrender of its license and a pathway to decommissioning.



- BWPH has been developing a preliminary plan for decommissioning the dam and surrendering the Project license and has been consulting with state and federal agencies since 2019.
- May 8, 2019, BWPH filed the 2019 Amendment to the 2007 Saco River Fish Passage Settlement Agreement which called for fish passage (or an alternative including dam decommissioning) at the Bar Mills Project with a target date of May 2025.
- July 17, 2019, FERC approved the Amendment.
- December 17, 2021: BWPH held a meeting with resource agencies to discuss preliminary plans for decommissioning of the dam and surrender of the license.
- January 12, 2021: BWPH held a pre-application meeting with Maine Department of Environmental Protection (MDEP) staff to determine the statutory and regulatory requirements that apply to Bar Mills Project surrender and decommissioning.
- May 19, 2023: BWPH held a follow-up meeting with federal and state resource agencies to discuss preliminary plans for a partial breach and removal and solicited agency comments.
- **August 2022: BWPH will hold a Public Informational Meeting in accordance with the MWDCA requirements and to inform the FERC surrender application and decommissioning plan; BWPH will post a brief scoping document for review on our website**
- **Summer 2022: BWPH will accept public comment on the preliminary decommissioning plan/scoping document and hold additional Public Informational Meetings, as requested and necessary**
- Late 2022: BWPH will provide a draft FERC surrender application and decommissioning plan to federal and state agencies **and make the application available to the general public on our website** for 90-day review and comment.
- Early 2023: BWPH will file the final surrender application and decommissioning plan with FERC, a USACE permit, and an MWDCA application with the MDEP; all three applications will be publicly noticed
- **2023: Federal and state agencies and the general public will have opportunities to comment on the final FERC application, USACE application, and MDEP MWDCA application; additional public meetings may be requested for these processes**
- Summer of 2024: BWPH intends to commence construction activities to decommission Bar Mills Dam

# Bar Mills Project Features





# Project Features to be Removed



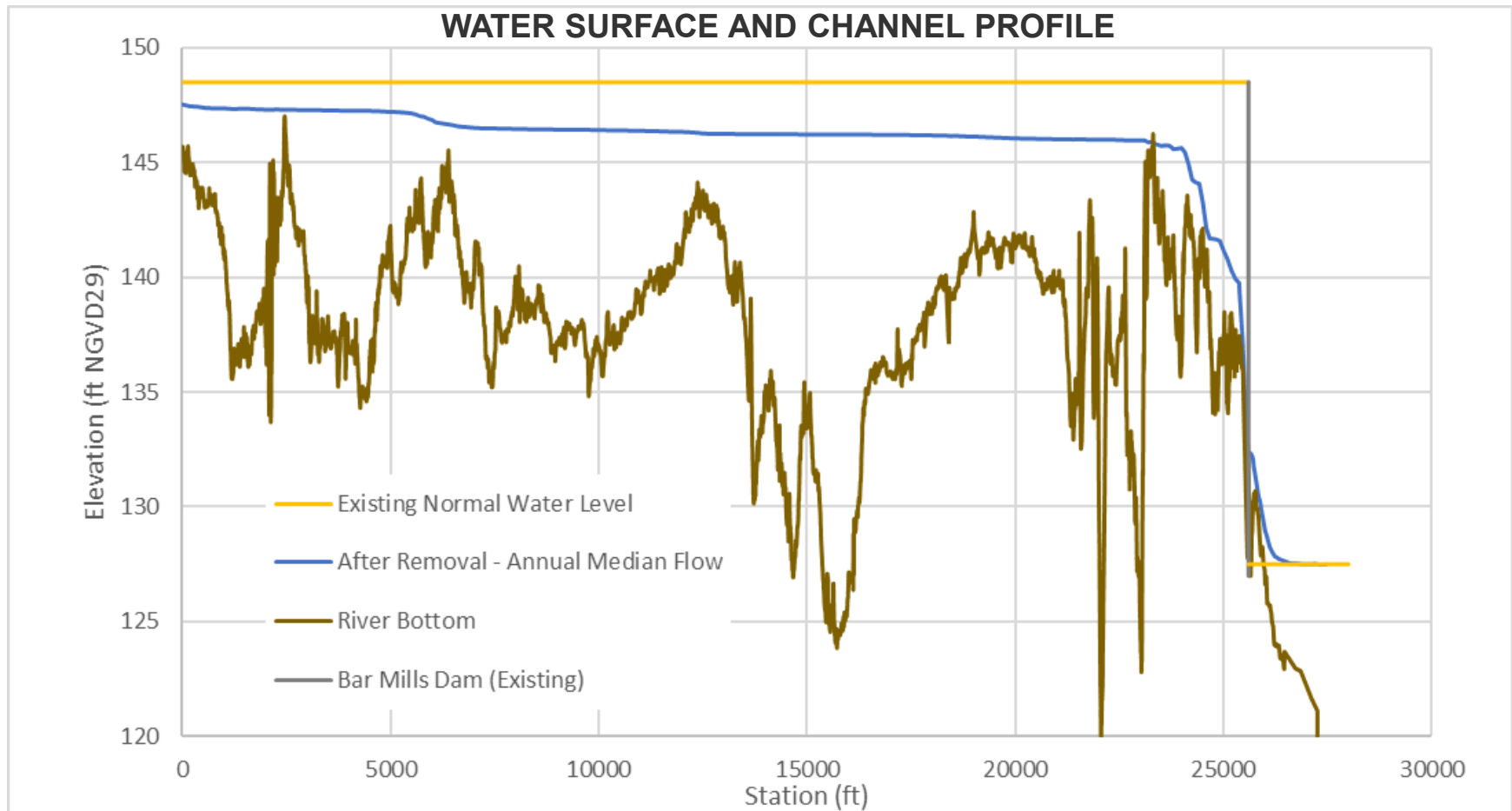


# Post-Removal Rendering





- A publicly accessible website has been set up to show anticipated water surface extents after removal of Bar Mills Dam - <https://barmills.brookfieldusprojects.com/>.
- Water levels will be reduced, but natural riverbed topography will help to reduce some affects from the removal.





- Prior to BWPH's decision to decommission the hydro facility, an upstream fish passage structure was planned.
  - 2007 Agreement
    - Licensee will provide a single permanent upstream anadromous fish passage facility at the Bar Mills Project by May 1, 2016.
    - Final design for denil fishway at Bar Mills from powerhouse tailrace through canal gatehouse structure was completed and ready for construction.
    - FERC granted several extensions of time to accommodate MDOT bridge work.
  - 2017 Operations Cease at Bar Mills Powerhouse
    - Concrete issues force shutdown and Brookfield evaluates options for continued operation.
  - 2019 Amendment
    - Licensee will, by no later than May 1, 2021, commit to the final Bar Mills fish passage plan by issuing a written letter stating its plan to all of the Parties.
- CFD modeling has concluded that conditions after dam removal are conducive to passing fish under typical flow scenarios and likely similar to other naturally flowing river segments.
- Dam removal will restore unimpeded flow past the dam site allowing fish to pass. The natural passage is better than passage through a man-made structure.



# Recreation Facilities to Remain





- Existing boat ramp was previously hand-carry; upgraded to a trailered launch in 2010
- Existing ramp will be modified to return it to hand carry access.





# Recreation Facilities – Usher Island Trails

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- Access and trails will remain.





## Recreation Facilities – Canoe Portage

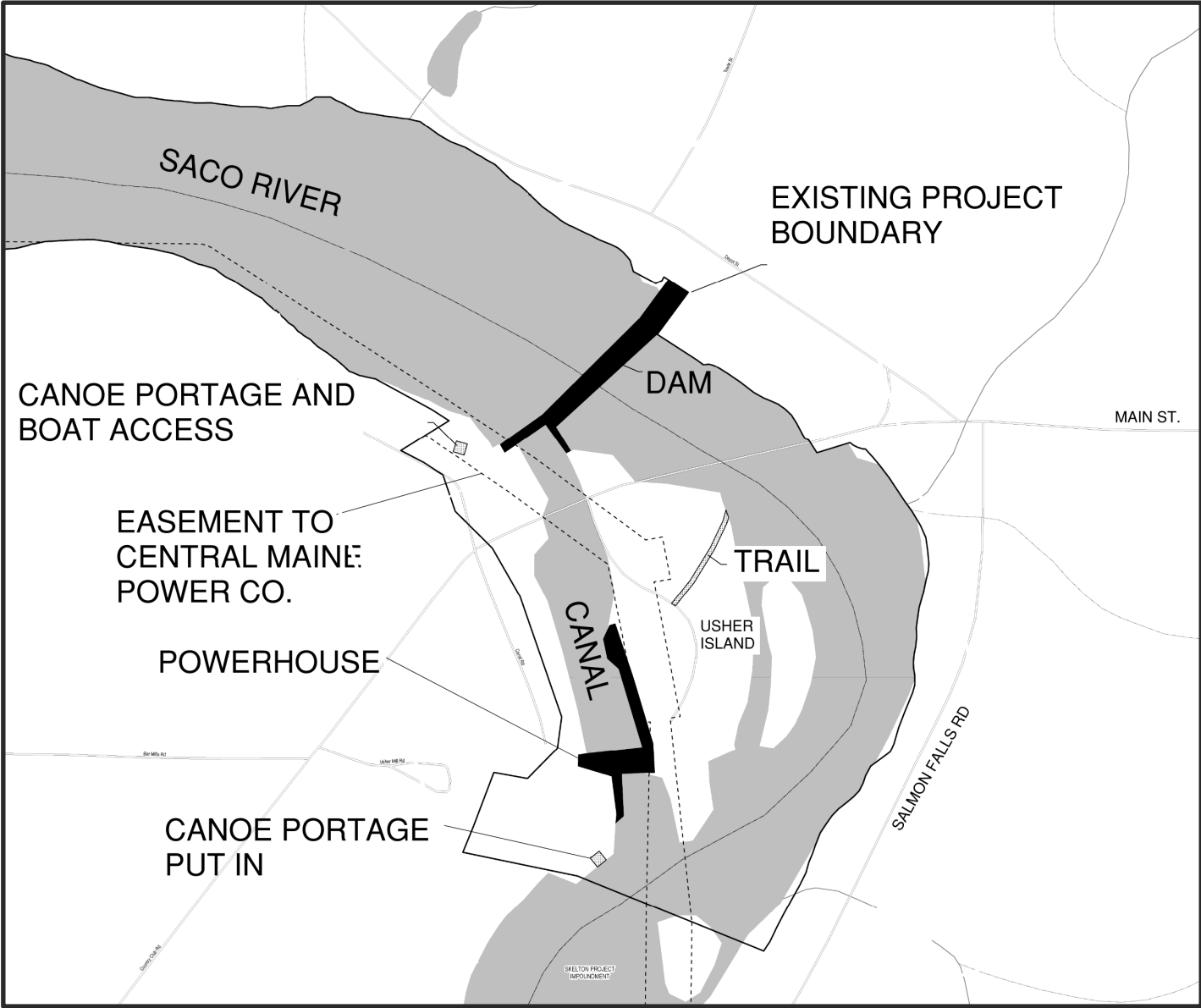
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- Access and trail will remain.





# Bar Mills Project Boundary and BWPH-Owned Lands



There are two key abutting landowner considerations – Project Boundary encumbrance (surrender) and additional lands created by removal (decommissioning)

## Surrender

- BWPH's Project Boundary encompasses lands where BWPH has flowage rights or the rights to the lands and waters necessary for the operation of the hydro facility. Lands within a FERC Project Boundary may or may not be owned in fee by BWPH.
- The current Bar Mills Project Boundary encompasses the lands and waters below El. 148.5 ft, around the impoundment, and includes only flowage rights; as well as several BWPH owned parcels containing the powerhouse, recreation sites and appurtenant facilities.
- Once the license is surrendered, the Project Boundary no longer exists and the lands within the Boundary not owned by BWPH are no longer encumbered (i.e. no longer burdened by eminent domain rights under the FERC license).

## Decommissioning

- Once the dam is removed and a new normal waterline for the Saco River is established, the owners of the land adjacent to the impoundment (and previously subject to BWPH's flowage rights) would hold in fee that land at least up to the bank of the Saco River.
- Additional acreage attributed to adjacent property owners is likely to result; any questions regarding surveys and taxation should be directed to the Towns



## Next Steps

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- Summer 2022: BWPH will accept public comment on the preliminary decommissioning plan/scoping document and hold additional Public Informational Meetings, as requested and necessary
- Late 2022: BWPH will provide a draft FERC surrender application and decommissioning plan to federal and state agencies and make the application available to the general public on our website for 90-day review and comment.



- All stakeholders are encouraged to contact Brookfield White Pine Hydro directly at any time with any questions or concerns about the Project:

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- All stakeholders are encouraged to monitor Brookfield White Pine Hydro's Bar Mills website for updates, relevant documents, meeting notices, etc:

<https://barmills.brookfieldusprojects.com/>