

West Enfield Dam

FERC No. 2600

Penobscot County, Howland and Enfield, ME

Dam owned by: Brookfield Renewables

Highlights

- Stanford Dam constructed 1894, original license issued 1970
- Relicensed 1984, renamed “West Enfield Project”; restructured mid-late 1980s
- Single development situated between Howland and West Enfield, ME
- Privately owned
- Fish passage facility exists
- **Not** LIHI certified

Ownership History

1894: A rock-filled crib dam was constructed at this site.

1988: The original dam was replaced with this dam when Bangor-Pacific Hydro Associates redeveloped the entire project.¹

1999: PPL Maine purchases asset as part of Maine’s electric deregulation.

2009: PP: Maine sells asset to Black Bear Hydro Partners, LLC, an affiliate of ArcLight Capital Partners, LLC

2014: Brookfield purchased asset. West Enfield included in the Lower Penobscot River Settlement Accord.⁴ As a part of the Accord, FERC authorizes a 1-foot increase in the headpond to increase generation.



<https://www.penobscotnation.org/departments/natural-resources/water-resources/dams>

Upcoming Decisions

- ❖ FERC Pre-Application Document (PAD) filed May 31st, 2019
- ❖ FERC site visit and scoping meeting to be held August 2019
- ❖ Current FERC License expires May 31st, 2024

Stakeholders

Not a comprehensive list

1. Brookfield Renewable– *Owner of the dam.*
2. Bangor-Pacific Hydro Associates – *Subsidiary of Brookfield Renewable, the owner and operator of the dam.*
3. Penobscot Nation - *Sovereign Tribal Nation that depends on and uses the river.*
4. Town of Enfield - *Manages what happens within the boundaries of Enfield, ME.*
5. Town of Howland- *Manages what happens within the boundaries of Howland, ME.*
6. Bureau of Indian Affairs (BIA)
7. National Park Service (NPS)
8. Department of Environmental Protection (DEP)
9. National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA-NMFS)
10. U.S. Fish and Wildlife Service (USFWS)
11. Maine Department of Inland Fisheries and Wildlife (DIFW)
12. Maine Department of Marine Resources (DMR)
13. American Rivers
14. Maine Rivers
15. Conservation Law Foundation
16. Atlantic Salmon Federation
17. Maine Audubon
18. The Nature Conservancy
19. Natural Resource Council of Maine
20. Trout Unlimited



https://farm3.staticflickr.com/2717/4041591062_82a9e74080_b.jpg
pg

Technical specifics²

Dam dimensions: 39-foot-high consisting of a 194-foot-long non-overflow spillway, a 107-foot-long gated spillway, and a 363-foot-long overflow spillway surmounted with 7-foot-high flashboards

Turbines: 2 horizontal Kaplan pit turbines

Hydropower capacity: 13MW

Annual Electricity Generation: 91,763 MWh (2014- 2018)

Fish Passage Facilities: Vertical slot fishway for upstream passage, downstream fish passage is five 4-ft x 14ft high surface bypass entrances. Eel passage is separate eel ladder.

Operation schedule: typically operates 24 hrs/day. Operated as run-of-river, such that inflow equals outflow.

Additional Information: In the [2015 Maine Hydropower Study](#) Kleinschmidt Associates estimate that the West Enfield Dam is outfitted with its maximum power capacity.

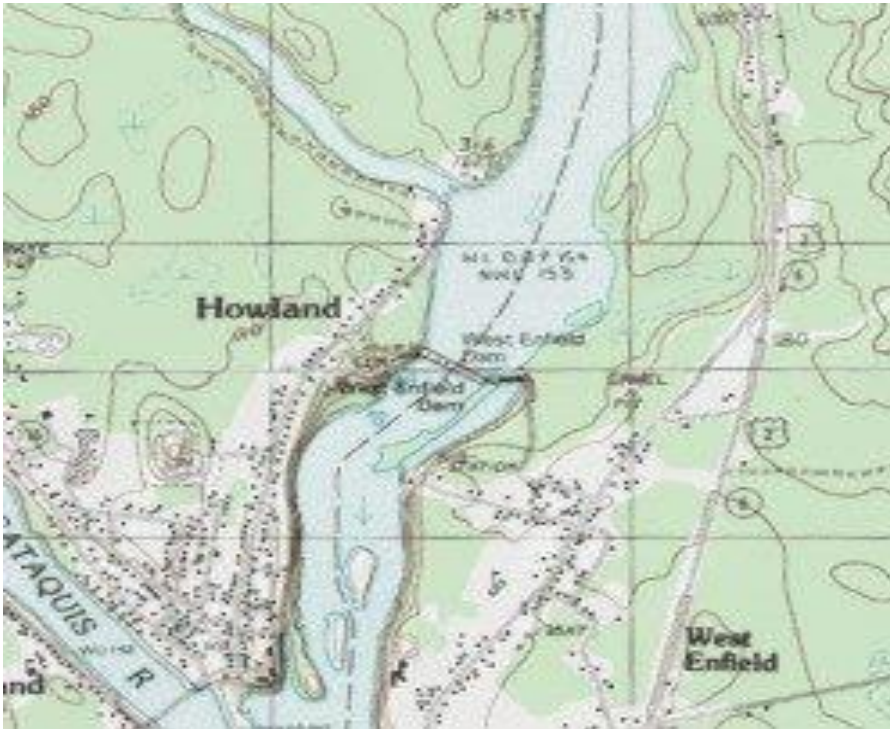
Important Events

1984: Previous relicensing.

1988: The dam was rebuilt from timber crib structure to concrete with hydropower capacity.

1980: Surface downstream fishway installed to provide passage around hydropower turbines.

2004: Lower Penobscot River Settlement Accord. Vertical slot fishway installed to provide upstream passage.



<http://www.mytopo.com/locations/index.cfm?fid=578134>

Past Media Coverage

- ❖ “Penobscot River Restoration Project Celebrates Final Milestone, Reconnects River to the Sea” by Judy Berk Posted on June 14, 2016 on NOAA.gov
https://www.greateratlantic.fisheries.noaa.gov/mediacenter/2016/june/14_penobscot_river_restoration_project_celebrates_final_milestone_reconnects_river_to_the_sea.html
- ❖ “Six dams in Maine to be sold for \$95 M” by Kevin Miller Posted on July 1, 2009 in the Bangor Daily News
<https://bangordailynews.com/2009/07/01/politics/six-dams-in-maine-to-be-sold-for-95m/?ref=relatedBox>
- ❖ “Restoring the Penobscot” by Tom Bell Posted on September 18, 2011 in the Portland Press Herald
http://www.pressherald.com/2011/09/18/pressherald.com_2011-09-18



DOWNSTREAM FISHWAY PIPE AT THE WEST ENFIELD PROJECT

[file:///C:/Users/Katie/Downloads/20160216-5037\(31238339\)%20\(1\).pdf](file:///C:/Users/Katie/Downloads/20160216-5037(31238339)%20(1).pdf) (From Sarah Vogel)

References:

¹Maine Hydro Plant Simulation Lab ware: WestEnfield Plant. (n.d.). Retrieved March 5, 2017, from <http://www.ewh.ieee.org/soc/es/Aug1996/008/cd/power/wenfield.htm>

²Sarah Vogel on Future of Dams Team

³Miller, K. (2009, July 1). Six dams in Maine to be sold for \$95M. Retrieved March 8, 2017, from <http://bangordailynews.com/2009/07/01/politics/six-dams-in-maine-to-be-sold-for-95m/>

⁴Penobscot River Restoration Trust. (n.d.). Fact Sheet 2016. Retrieved March 2, 2017, from <http://www.penobscotriver.org/assets/2016PRRPfacts.pdf>

About the Authors:

This factsheet was created by:

Undergraduate Research Assistant, Kaitlyn Raffier

Faculty Advisor, Sharon Klein

Graduate Advisor, Emma Fox

Support for this project is provided by the National Science Foundation's Research Infrastructure Improvement NSF #IIA-1539071 and the USDA National Institute of Food and Agriculture, Hatch project 0230040.

