Jackson Dam: What Do We Know?

Jackson Dam, also called Hardwick Lake Dam, is at the confluence of the Lamoille River and Alder Brook in Hardwick, just upstream of the Route 15 bridge. It is owned by Hardwick Electric Department. The dam was built in 1911 and rebuilt in 1952. The entire structure is approximately 523 feet long, including a 144-foot principal spillway, a 38-foot emergency spillway, approximately 300 feet of concrete wall, and outlet structures that help control water levels. The dam creates Hardwick Lake.



What is the condition of the dam? Jackson Dam has been rated "Poor" in multiple Vermont dam safety inspections, including in 2024. A Poor condition rating indicates significant structural or operational deficiencies that require attention. Inspectors have documented cracking, deterioration of concrete and outlet structures, possible leakage, and some settlement.

Jackson Dam is also classified as a Significant Hazard dam. This classification describes the potential consequences of a dam failure, not the likelihood of failure. It means that failure could cause significant damage to property or infrastructure or disrupt important services. The dam overtopped during the 2011, July 2023, and July 2024 floods.

Why is the lake lowered in winter? Hardwick Lake has been lowered during the winter since 1975. The drawdown helps reduce the risk of ice jams by giving ice more room to move through the river.

What about the sediment? A large amount of sediment has built up behind the dam over many years. The feasibility study estimated that there may be between about 640,000 and 2.52 million cubic yards of sediment in the lake. That is roughly 45,000 to 180,000 dump-truck loads, assuming about 14 cubic yards per truck.

What did the flood modeling show? Engineers modeled what could happen if the dam were removed and the river channel and floodplain were restored. The results showed lower flood levels for about 3 miles upstream.

During the modeled 100-year flood, water levels immediately upstream of the dam were more than 2 feet lower. The amount of flood lowering decreases farther upstream, but the modeled effect extends to near Cottage Street. The modeling also showed that the LVRT bridge and Route 15 bridge continue to affect how water moves through this part of the river.

What did the 2025 feasibility study recommend? The study recommended moving forward with planning for dam removal rather than major repair. It did not recommend removing all the sediment. Instead, it recommended removing sediment in selected areas and stabilizing and planting other areas.

The study also recommended temporarily lowering the lake levels before removal so engineers can learn more about the sediment and river channel before finalizing the design. A temporary drawdown will also allow vegetation to establish and stabilize parts of the impoundment.

What would it cost? The current estimate for dam removal is approximately $4 million to $9 million. This is an early estimate and will become more precise as engineering and design continue. Funding has been secured for the next phase of engineering and design. Additional state, federal, and other funding sources may be available for removal, so the estimated project cost does not necessarily represent a cost to Hardwick taxpayers.

What happens next? No final decision has been made about Jackson Dam. The next phase will provide more detailed information about the design, costs, sediment, flooding, environmental effects, and other questions raised by the community. That information will help the community understand the choices before a final decision is made.

Understanding Jackson Dam: Common Terms

Technical terms are often used when discussing dams, flooding, and river restoration. These definitions explain some of the terms you may hear during the Jackson Dam discussions.

Term	Meaning
Abutment	A constructed support.
Crest	The top of a dam.
Spillway	A structure designed to allow water to pass safely over or around a dam.
Non-overflow Wall	A section of a dam designed to hold back water rather than allow water to flow over it. Jackson Dam includes approximately 300 feet of non-overflow concrete wall.
Floodgate	A movable gate used to control the flow of water.
Overtopping	When water rises high enough to flow over the top of a dam or a section not designed to carry that flow.
Impoundment	Water and sediment held back by a dam. Hardwick Lake is an impoundment created by Jackson Dam.
Drawdown	Lowering the water level behind a dam.
Sediment	Sand, gravel, silt, and other materials carried by the river.
Hydraulic Modeling	Computer modeling used to estimate how water moves through a river under different conditions, including floods.
Significant Hazard Classification	A dam safety classification indicating that failure could result in significant property or infrastructure damage or disruption of important services.
Dam Removal	Removing a dam &, where appropriate, restoring the river channel & surrounding areas.
Confluence	The location where two rivers or streams meet. In Hardwick, Cooper Brook joins the Lamoille River near the Cottage Street Bridge and Alder Brook joins the Lamoille River just upstream of Jackson Dam.
Training Wall	A wall built along a river or channel to guide the direction of flowing water, help manage currents, and protect nearby structures or riverbanks.
Floodplain Flood bench	Low lying land alongside a river that routinely becomes covered with water during flooding. Floodplains and flood benches can be natural or constructed. These features provide space for floodwater to spread out during high flows, reducing flood levels.