

147 New York dams are ‘unsound’ and potentially dangerous

Thousands of dams have not been inspected in more than 20 years

By [RICK KARLIN](#) and [EMILIE MUNSON](#) | Dec. 17, 2021 5:00 a.m. | Updated: December 18, 2021 2:25 PM



New York State Department of Transportation workers look over the dam area on the south end of Hadlock Pond in Fort Ann on July 7, 2005. The dam gave way earlier that month. Paul Buckowski / Times Union

FORT ANN — People in this small town still remember the flood of 2005. Mostly, they recall how lucky they were that no one was killed or injured, despite the wreckage.

“We dodged a bullet,” recalled town Supervisor Sam Hall.

million gallons of water — enough to fill 788 Olympic-sized swimming pools.

The rush of water washed out a section of Route 149 — a major truck and passenger route to Vermont — and inundated dozens of homes downstream. Many people were not home when the dam burst on a Saturday evening; authorities quickly triggered the dam's emergency action plan to alert downstream residents, averting injuries or loss of life. The dam was rebuilt in 2008.

Still, the flood caused an estimated \$10 million in damage. A raft of lawsuits drew in homeowners, the town and the dam's builders and engineers. It was 12 years before the last of the litigation was settled.



A home along the banks of the stream that empties Hadlock Pond in Fort Ann was damaged after the dam on the south end of the pond gave way in July 2005, forcing water down the stream. Paul Buckowski / Times Union





Sam Hall, Fort Ann town supervisor, stands on the Hadlock Pond Dam on Dec. 8. A dam at this site gave way in 2005, causing an estimated \$10 million in damage. Paul Buckowski / Times Union

The courts found that faulty design and construction were behind the accident, highlighting why carefully examining and maintaining dams is so important.

New York is home to more than 7,200 dams. Some of the largest get regular inspections, upkeep and repairs precisely because the cost of a failure would be so high.

But thousands of dams in New York are rarely inspected and their conditions have not been formally assessed by state officials, who are ultimately responsible for protecting the public from expensive and potentially deadly flood emergencies, a Times Union investigation has found.

Of the dams that have been recently evaluated, state records indicate the safety of hundreds of the structures “cannot be assured” — including dozens in the Capitol Region.



In fact, only 122 of 5,946 active dams in New York have been awarded the all-clear of having “no deficiencies noted,” records kept by the state Department of Environmental Conservation showed as of late June.



classification indicating that failure is “imminent and immediate action is required to eliminate or reduce the danger.” It has already had instances where water overflowed its embankment and poured down the road.



Capital Region. An unsound dam may have seepage problems, structural and stability inadequacies or seriously inadequate spillway capacity to such an extent that “the safety of the dam cannot be assured,” according to [state law](#).



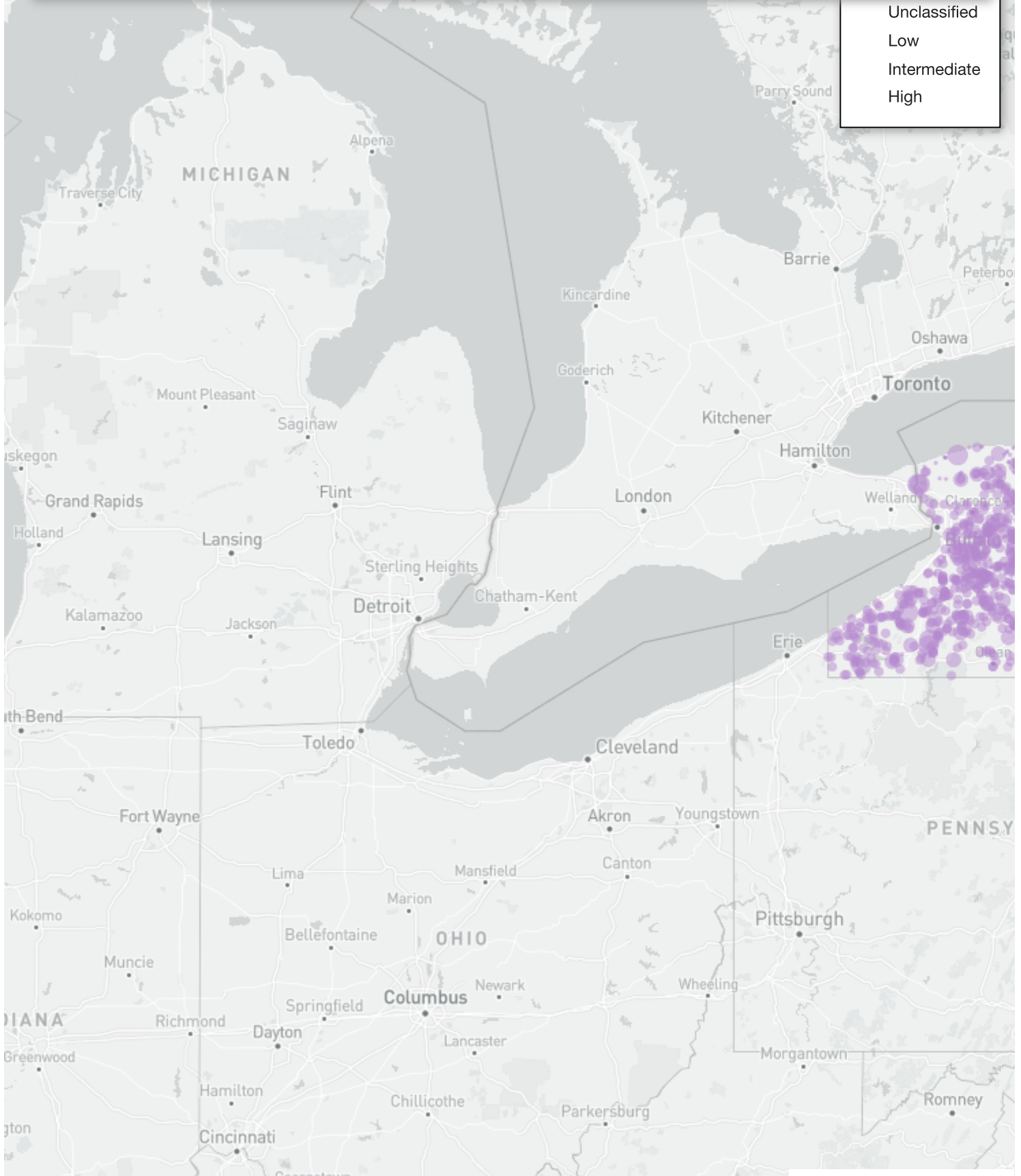
breach could cause property damage, injury or death. The 50-foot Wright Lake and Bradley Lake dams in Troy, the 171-year-old Rensselaer Lake dam in Albany and the 450-foot-long Loughberry Lake Dam in Saratoga Springs are among the unsound, high-hazard dams in the Capital Region.



including 15 in the Capital Region. That rating indicates that a dam has some physical or operational flaws and generally needs increased maintenance.

had their condition officially rated. These dams often have not had an engineering assessment to conclusively examine what shape they're in.

- Unclassified
- Low
- Intermediate
- High



Over 500 of the unrated dams also have not been assigned a hazard code, which determines how much damage would result from their failure.

As of June, 3,190 active dams in New York had not been inspected in the past 20 years, despite a state recommendation that they be examined at least once a decade. One hundred forty seven active dams have not been inspected in over 50 years, state records show, including three high-hazard dams in Saratoga County.

The Times Union also found that in some cases state records on dam conditions and inspections appeared out of date or inaccurate.

When asked about the findings, state Department of Environmental Conservation Chief of Staff Sean Mahar stressed that state officials' work is sufficient to prevent serious floods from dams.

“DEC’s dam safety program is highly effective at assessing the condition of dams throughout the state and will continue to keep the public safe by immediately addressing any urgent conditions,” Mahar said. “Our staff are on call every day of the year to respond to any potential concerns resulting from storms or other damaging impacts as they arise and conduct diligent inspections of state-regulated dams to help prevent issues before they occur.”

New York’s approach has been to focus its resources mainly on high-hazard dams and attempt to bring those into compliance with safety guidelines. With thousands of dams in the state and a relatively small cohort of inspectors, the state is unable to regularly monitor them all.

The state is still working on assessing the condition of all high-hazard dams in the state (excluding some that are regulated by the Federal Energy Regulatory Commission), said Lori Severino, a spokeswoman for the DEC. For high-hazard dams, 87 percent currently have a condition rating, up from 49 percent in 2018.

“DEC focuses on rating high-hazard dams. However, regardless of whether they’re rated DEC inspects high-hazard dams every two years and intermediate (dams) every four years, so we know the condition of the dams,” Severino said. “For the thousands of smaller dams throughout the state, many of which are sizes that other states do not even regulate, the dam safety unit monitors their conditions as warranted.”



dams had gone uninspected for longer than the required two-year window; that's a quarter of all high hazard dams in the state. Most had not been inspected for more than five years. Also, about a dozen of these were found to be unsound by officials at their most recent rating.

DEC said 69 of the dams are overseen by federal agencies and the state's data on when those dams were last inspected is not necessarily up to date nor is the state required to maintain those records. State officials said federal agencies inspect high hazard dams they oversee every year.

For the remaining dams, state officials said there were some delays in inspections due to pandemic related travel restrictions last year but most have since been inspected. They expect to clean their backlog of high hazard dams past due for inspection by the end of next.

Significant injuries and deaths from dam incidents have been rare. At least 15 New Yorkers have died in dam incidents since 1897, according to the Stanford University National Performance of Dams Program.

For many dams in New York, a breach or collapse would not result in a disaster. Many are smaller and are located in remote areas, away from structures and people. For those dams, partial or complete failure would likely result in flooding of a few isolated homes and water spreading across minor roads and land. But even those effects are just as real for the countless people who live below or near the thousands of little dams across the state.

The cleanup can be costly to local municipalities and homeowners — most of whom do not have flood insurance if they live away from coastal areas.

Some experts believe climate change is fueling stronger storms with intense rain in the region, increasing the strain on dams, many of which are a half-century old and were constructed for different weather conditions. Warming weather is also melting snow faster, sending more water into rivers and creeks.

Meanwhile, progress toward repairing and even maintaining aging dams has been limited. In many cases, state officials and property owners are trying to settle disputes about who owns dams and pays for their upkeep, and whether some should be taken down.

“It is a broad societal problem that many might describe it as ‘(It) snuck up on them,’” said David Freyberg, an associate professor of civil and environmental engineering at Stanford University. “You hadn’t really been thinking about what happens when we have this huge

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Overtopping

Dean Foster, administrator for the Hoosac School in eastern Rensselaer County, learned in 2017 what it means for a dam to overflow. That year, a beaver dam upstream of the school's pond dam gave way, causing water to spill over the impoundment, the term for the body of water created by a dam.

"It overtopped catastrophically," Foster said.

Water cascaded down to Route 22. When the water receded, the new impoundment was a swamp rather than a pond. The dam was rebuilt.



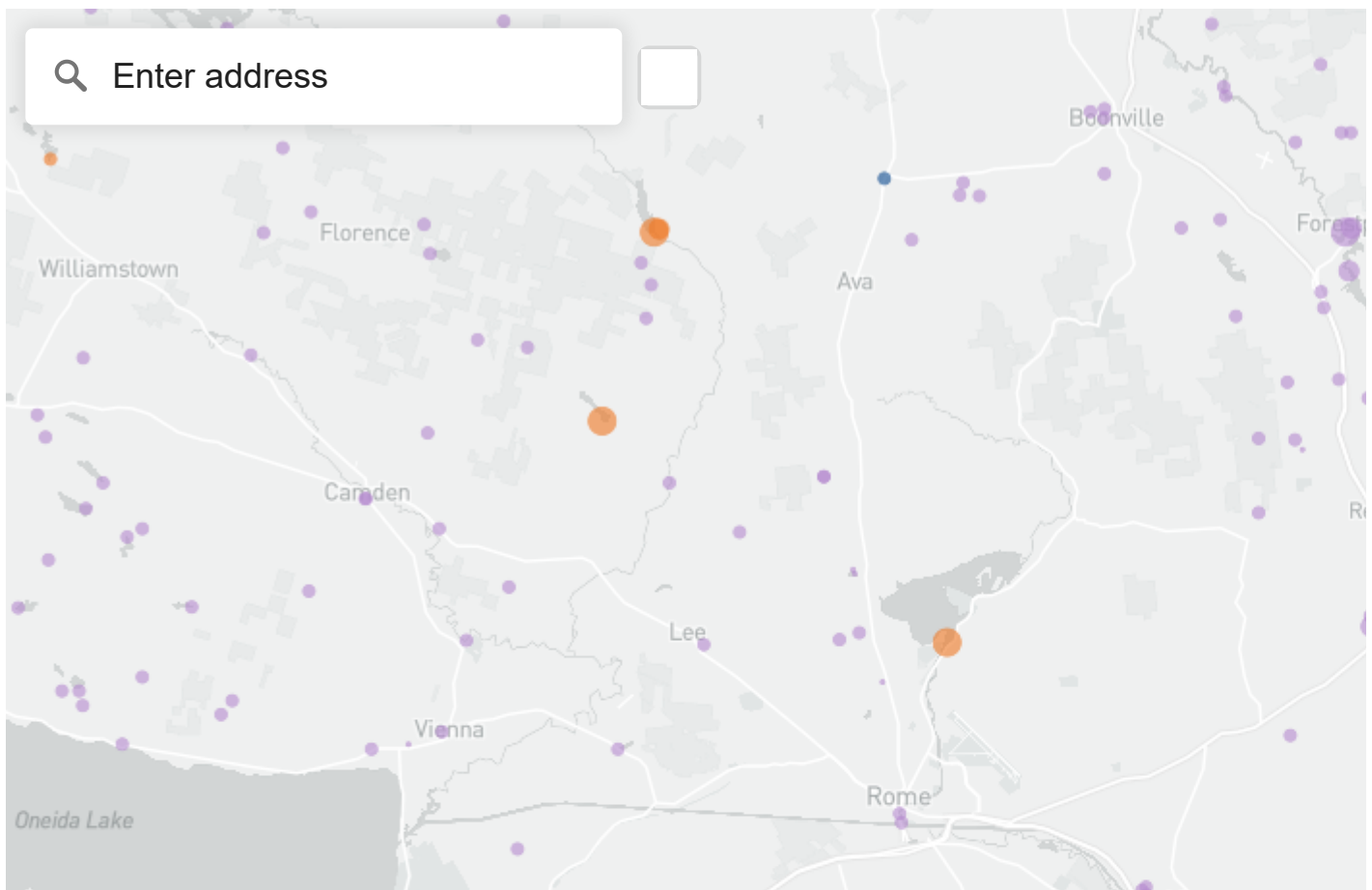
A road goes over the Hoosac School Dam, which is on the Hoosac School property, and is seen on Nov. 29 in Hoosick. The 25-foot-high dam was rebuilt in 2017 but retains an “unsafe” rating — the only one in the state — because long-term remedial measures have not been completed. Lori Van Buren / Times Union

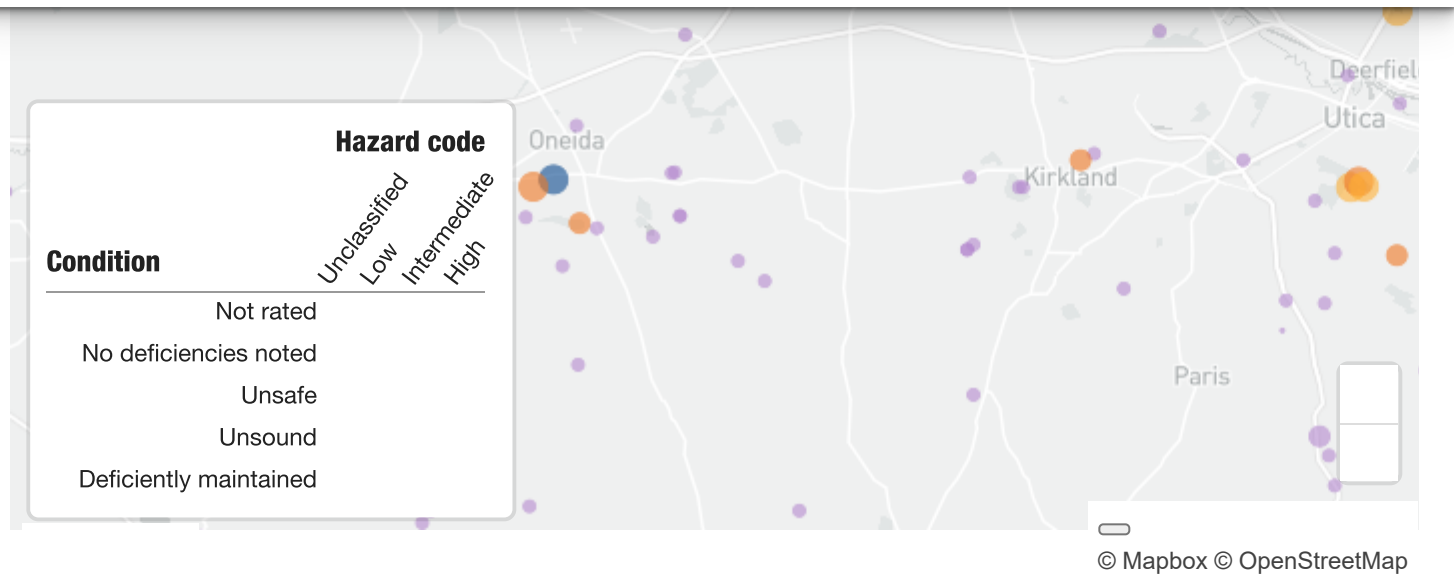
The 25-foot-high Hoosac School Dam is the only dam in the state currently rated “unsafe.” Its failure would cause moderate damage to property, but is not expected to result in human deaths, according to state records.

The DEC said that the structure retains an “unsafe” rating because emergency repairs were conducted by the school to stabilize the dam; long-term remedial measures have not been completed.

Foster disputes the idea that moderate damage would result from failure of the dam, saying there is nothing downstream that would be damaged. The dam’s emergency action plan confirms that the “worst-case scenario” for the dam is a road closure and water rapidly flowing out of the pond through a ravine to a nearby river, with no structures in the flow’s path.

See the condition of dams near you





Some dam owners say the ratings can be needlessly alarming to the public. The Summit Street Dam, owned by the town of Philmont in Columbia County, was rated as “deficiently maintained.”

But Deputy Mayor Doug Cropper said that was simply due to some debris around the top of the dam that has since been cleaned up. Like other small dams in that area, the structure was originally built to power textile mills that have closed.

In Troy, the dam that creates the city’s Tomhannock Reservoir was also listed as “deficiently maintained.”

“We didn’t mow the lawn,” Troy Public Utilities Superintendent Chris Wheland said, explaining that grass on the dam must be kept low enough for easy visual inspections for problems such as animal burrows or seepage. (He said the issue has been addressed.)

With about a dozen full-time inspectors, it’s a herculean task for the state to inspect thousands of dams. DEC noted that some other employees who don’t work on dam safety full-time may contribute field work or information on dams.

New York had a \$1.9 million budget for dam safety in 2018, according to the Association of State Dam Safety Officials (ASDSO). The money budgeted per dam for safety regulation has remained at about half the national average since 1999. Meanwhile, New York’s safety inspectors are on average responsible for twice the number of dams as other states, [the association found in 2019](#).

by some other states. But the ASDSO also noted that New York employees were each responsible for about 10 more high-hazard dams than inspectors in other states.

“They are understaffed,” Cropper, the Philmont deputy mayor, said of the DEC’s unit.

So inspections are sometimes left up to the owner, who ultimately bears responsibility if something goes wrong, he added.



The Bradley Lake Dam, between Bradley Lake, right, and Wright Lake in Troy, is one of the unsound, high-hazard dams in the Capital Region. Lori Van Buren / Times Union

Swamped

Dam breaches are not always accidental.

Halloween 2019 cloudburst. As the storm approached, operators of a New York Power Authority Dam on West Canada Creek and the Hinckley Reservoir had closed their gates to hold back water — but there was too much rain.

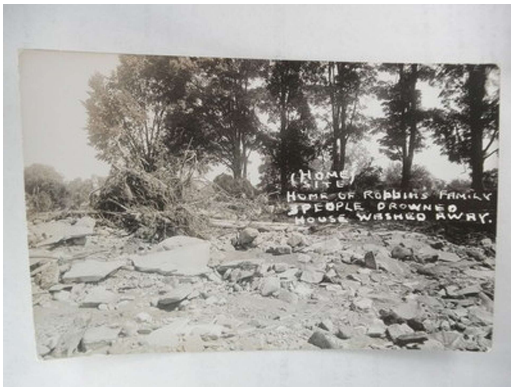
“As the storm increased in intensity, the water came over the spillway,” said NYPA spokesman Shane Mahar.

“It just went right through the town,” Russia Supervisor Fran Donley said, recounting how West Canada Creek rose 20 feet before jumping its banks that day.

Several homes were flooded, but no injuries were reported. The town and nearby village of Poland also experienced flooding, with a campground, auto repair shop and cafe suffering damage.

“It was awful,” recalled Mary Hughes, who fled her mobile home in Poland as the water was rising and entering her dwelling. A number of senior citizens who lived in mobile homes next door were also evacuated by the fire department.

“We put what we could on the desks,” said Dorreen Heinrich, who runs an auto repair shop with her husband. The water rose so quickly that tires were swept into their front offices and their computer system was wiped out.



[Timeline: Deadly dam accidents throughout New York history](#)

With climate change causing more rain and extreme storms like the one that pummeled Russia, new pressures are straining dams’ ability to keep watery chaos in check.

The warming planet means that precipitation that once fell as snow is more often falling as rain, changing when and how much water flows through watersheds at various times, explained Freyberg, the Stanford hydrologist. Climate change is also

delivering more rain in short, high-intensity events as opposed to longer, lighter storms.

“It may be that the pipes designed to release water downstream are not large enough to deal with a really large inflow of water coming over a short period of time,” Freyberg said. “... That means as you consider what to do about aging components, you really need to be thinking about changed conditions in addition.”

from coastal areas, said Mark Friedlander, director of communications for the Insurance Information Institute.

Few homeowners in upstate New York have flood insurance to protect their property if a dam breach or release causes flooding. Homeowners insurance does not cover damage from floods, and few homeowners opt to purchase the added coverage. Flood insurance premiums do account for the presence and condition of dams in the area, Friedlander said.

One to 3 percent of homeowners in Albany, Rensselaer, Schenectady and Saratoga counties have flood insurance, Friedlander said. The county with the highest rate of flood insurance in the region is Schoharie — which was hit hard by 2011's Tropical Storm Irene — with 4.5 percent of homeowners covered.

Jon Bombard, who operates the Man of Kent Tavern along Route 7 in Hoosick Falls, said he had no flood insurance to protect him when a beaver dam upstream on Shingle Hollow Creek burst, releasing a torrent of water that reached the foundation of his restaurant — normally 30 feet above the stream. He estimated the damage cost about \$100,000 to repair, with new footings, fill and reinforcements for the foundation.

“We hope that this doesn't happen again,” he said, “but we're not in charge of the weather and storms.”



Jon Bombard explains on Dec. 3 how the Shingle Hollow Creek flooded in July 2017 and washed away part of his property behind Man of Kent Tavern, in Hoosick Falls. Damages were estimated to be around \$100,000. Lori Van Buren / Times Union

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Ownership

The 240-foot-long Bronck Lake Dam in Coxsackie has not been inspected since 1994, according to state records. State records show the dam is “not rated.”

But the owner, Joseph Garland, said it was inspected within the past 10 years and he made some recommended changes to the dam, which holds back a small lake around which houses are built.

The dam was built by his grandfather, in part, to create a pond to extract ice for a former mushroom-growing operation.

State data on dams can be confusing. Dam owners are supposed to do inspections every two years on high-hazard dams and every four for intermediate-hazard dams, but owners can certify that their dam has been inspected without the state looking at the structures.





The 171-year-old Rensselaer Lake Dam is rated unsound and is a high hazard dam, meaning a breach could cause property damage, injuries or death. Here a measurement stick is seen on a building in the lake at Six Mile Waterworks Park on Nov. 15 in Albany. Lori Van Buren / Times Union

The determination that a dam owner is “strictly liable” for damage from a failure was solidified in the lawsuit that followed the Hadlock Dam collapse, said Albany lawyer Paul Wein, who represented dozens of families whose homes were damaged in the aftermath.

That dam’s failure also prompted the state to require all intermediate- and high-hazard dams to file emergency action plans (EAPs) with the state that detail safety and evacuation procedures in case of flooding. Some other states do not require the additional safety step, DEC noted.

But as of June, about one in five intermediate- and high-hazard dams required to have an EAP on file did not have one, according to state records.

In some cases, ownership of dams is in dispute.

In 2018, the DEC sued the city of New Rochelle, two homeowner associations and a private company alleging them to be joint owners of the New Rochelle Reservoir No. 1 Dam and failing to safely operate and maintain the 30-foot structure, which impounds 190 million gallons of water in Lake Isle. Late last year, DEC added more defendants to the ongoing litigation, which now involves the county, three towns, four companies, two homeowners’ associations and various individual homeowners.

The high-hazard dam was last rated “unsound,” according to state records.





Workers reconstruct the Hadlock Pond Dam on Jan. 17, 2007, in Fort Ann. Town Supervisor Sam Hall says the town has had the rebuilt dam inspected annually even though it's not required. John Carl D'Annibale / Times Union

Damless

There are also dams that have been removed.

Donley, the Russia town supervisor, believes that removal of what had been an additional dam upstream from her town 15 years ago aggravated flooding in the community.

There has been a push to remove dams, which environmentalists view as harming river ecology in many instances.

“It’s a public safety issue. It’s also an issue for the health of the rivers,” said Kelley Tucker, executive director of the Ausable River Association, which works to protect streams and rivers in the Adirondacks.

State records show 1,309 dams have been removed or were otherwise defunct as of June.

Old, deteriorating dams pose a downstream threat due to the possibility of collapse, which is particularly worrisome when the owners have little ability to maintain or repair them. And dams can cause sediment buildup in the reservoirs and reduce the number of pools, or pockets of clear, cold water downstream that make for good fish habitat.



heavily logged. Many of the dams were built to create "flows" or waterways through which timber could be floated downstream to railways. Others were used in tandem with water-powered mills for timber cutting, and later for papermaking.

Tropical Storm Irene in 2011 was a pivotal event when it came to how many of these dams were viewed, Tucker and others said. After the devastation to multiple upstate regions, the impetus to remove some dams increased. Storm recovery funds were eventually used to remove the town of Jay's Rome Dam on the Ausable River, which had gone without maintenance since 1971.

Irene also brought the end to the Marcy Dam, a wood and stone structure in the backcountry near Lake Placid.

It was well-known for its scenic view of the manmade lake and Mount Marcy in the distance. After being damaged in Irene, state environmental officials decided to slowly dismantle it.

The state could handle the cost of taking down Marcy Dam on public land, but private property owners considering removal "may not have the money or don't want to spend it," said John Aspland, a Glens Falls lawyer who has been involved in dam-failure damage cases.

The Penfield Historical Society in Crown Point, Essex County, operates a small historical museum that includes a 15-foot high dam, which dates to the region's history as an iron mining center.



The Penfield Historical Society in Crown Point, Essex County, operates a small museum that includes a 15-foot high dam that they can't afford to maintain. Local groups are divided on whether the dam should be removed. Provided by Penfield Homestead Museum

“The state would like us to take it out,” said David Hall, secretary of the society. “It’s been there for 150 years.”

The county and state, he said, are trying to piece together grants to help remove the structure, which could cost hundreds of thousands of dollars.

Money to assist with dam maintenance and removal may become more plentiful thanks to the infrastructure bill passed by Congress in November, which includes [\\$3 billion for dam-related projects](#) nationwide. It’s unclear how much New York will receive from the allocation.

“New York is primed and ready to get resources to the communities that need it most and address known and emerging threats to the public and the environment,” the DEC’s Severino

In some places, they aren't taking chances. Hall, the Fort Ann supervisor, said the town has had the rebuilt Hadlock Pond Dam inspected annually even though it's not required.

"We do it anyway," he said.

Clarification: After publication of this article online, the state Department of Environmental Conservation clarified that some high hazard dams that have not been inspected two years or more are under the jurisdiction of the Federal Energy Regulatory Commission. The DEC also said the pandemic has affected the state's ability to complete some recent inspections.



A view of the Hadlock Pond Dam on Dec. 8 in Fort Ann. A dam at this site failed in 2005; the dam was rebuilt in 2007. Paul Buckowski / Times Union

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