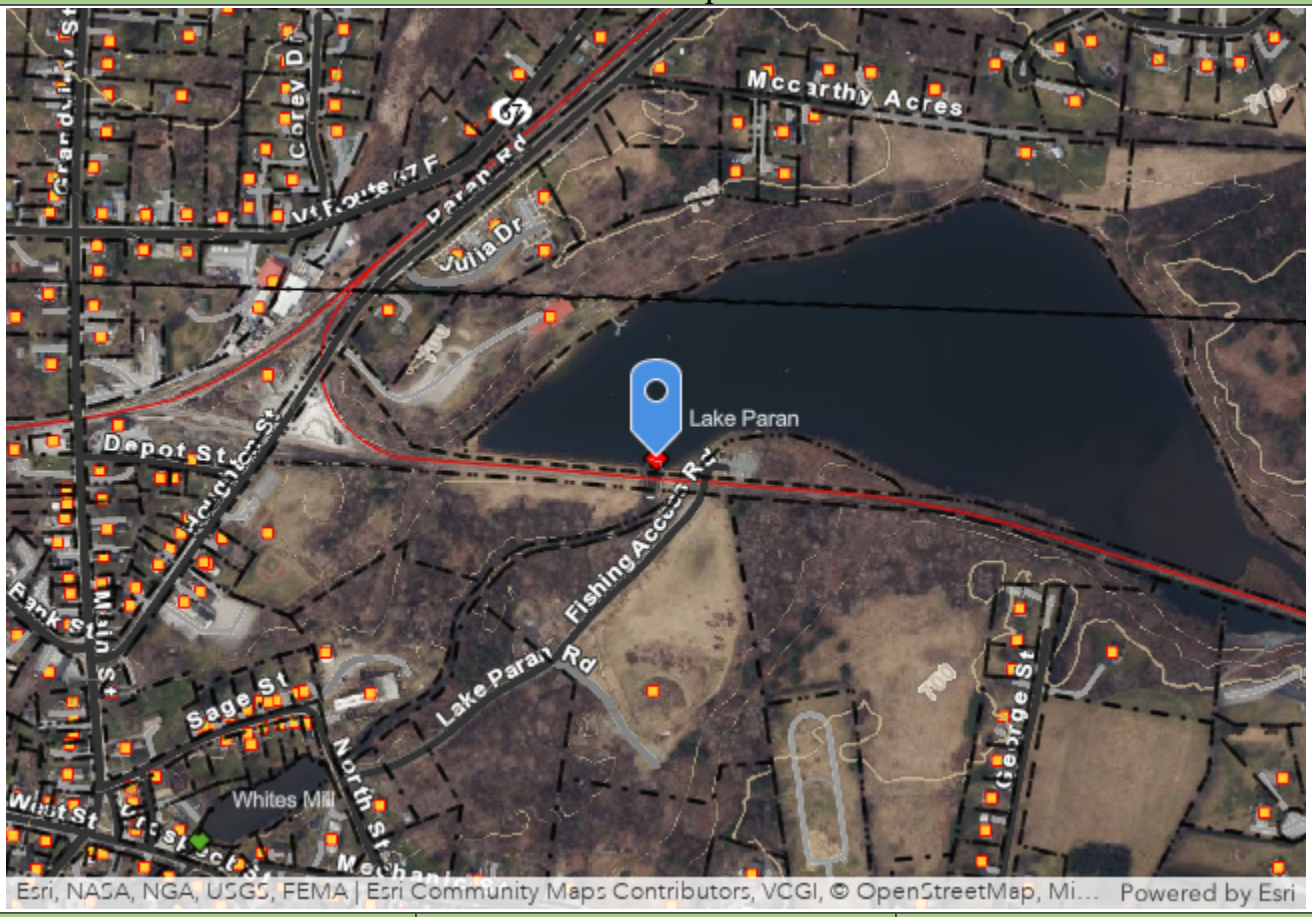
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	Rapid Inspection Report	Dam Safety Program One National Life Drive, Davis 3 Montpelier, VT 05620-3510 ANR.DamSafety@vermont.gov

Lake Paran Dam	**State ID:** 17.01 **Town:** Bennington,VT **NID ID:** VT00006	**Status:** In Service **Hazard Class:** High Hazard

Site Map



Inspection Details	Dam Information	Owner Information
Inspected On: 07/20/2023 **Inspected By:** Other(s) **Other Inspectors:** Team I **Weather:** Sunny, Ground Dry, 84 ˚F **Last Inspection:** 11/23/2022 **Current Condition Rating:** Fair	**Height:** 25 ft. **Length:** 720 ft. **Normal storage:** 285 ac-ft. **Max storage:**535 ac-ft. **Watershed:** Walloomsac River **Stream:** Paran Creek	**Contact Name:** Mark S. FitzGerald **Mailing Address:** 219 North Main Street, Suite#402 Barre, VT, 05641-4129 **Phone Numbers:** Mobile - 8024615971 **EMail:** mark.fitzgerald@vermont.gov

Flood Inspection Questions	
Does it appear that the dam crest (non-overflow sections) overtopped during the storm event? **Unknown**	Does it appear that the emergency or auxiliary spillway activated? **None present**
Did the dam breach during the storm event? **No**	Was the owner monitoring the dam throughout the storm? **Unknown**
What was the estimate peak water level? **Unknown**	Is a follow-up Periodic Inspection needed? **No**
Is the current **Fair** *condition rating appropriate?* ***Yes***	Does the current hazard potential classification ***(*High Hazard)** appear to be appropriate? **Did not evaluate**

Identified Dam Deficiencies
Does this dam have any new, or changes to previous, deficiencies? **No**

Photos Taken

Spillway

--

Embankment

--

Spillway downstream

--

Downstream of spillway

--

Spillway downstream

--

Spillway downstream

--

Spillway downstream

--

Spillway downstream

--

--

General Information

Rapid Inspection Program Information

- The Dam Safety Program (DSP) developed the Rapid Inspection Program in response to the July 2023 flooding and the initiative of Governor Phil Scott.
- Inspection teams were assembled from DSP and Agency staff with assistance from the Emergency Management Assistance Compact, including staff from the NY Power Authority, MA Office of Dam Safety, and NYS Dam Safety.
- The focus of Rapid Inspections was on all High Hazard, Significant Hazard, and Low Hazard potential dams within DSP's regulatory purview.
- The Rapid Inspections are a screening tool to help the DSP identify which dams were damaged by the flooding and in need more detailed inspection or risk reduction measures.
- All reports were reviewed and finalized by DSP personnel.
- These reports do not include specific recommendations. If a Follow-up (Periodic) Inspection is recommended or required, dam owners will be contacted to schedule (if they have not already). The Follow-up (Periodic) inspection report will include recommendations and requirements for next steps to address dam safety issues.

Disclaimer

Detailed investigations/analyses were beyond the scope of this report. It should be realized that the reported condition was based on observations of field conditions at the time of inspection, along with data available to the inspection team. The condition of the dam depends on numerous and constantly changing internal and external conditions and is evolutionary in nature. It would be incorrect to assume that the reported condition of the dam will continue to represent the condition of the dam in the future. Only through continued care and inspection can there be any chance that unsafe conditions are detected.

Questions about the Rapid Inspection Program?

Please contact the dam safety program by e-mail (preferred) at **ANR.DamSafety@vermont.gov**, and if e-mail is not available you may contact the DSP by phone at (802) 636-7099 or by sending a letter using the mailing address listed on any of DSP correspondence.

Dam Owner Maintenance Considerations

- Dam Owners should remove storm-related debris from spillways to promote free flow conditions following the historic flooding.

*Any major repairs should be reviewed by the DSP prior to work being completed. If any work performed may affect the safety of the dam an order may be required. To determine if a dam order is required, please submit a **Project Determination Form** for DSP review. No work shall progress until the DSP has reviewed the form and provided direction to the owner to proceed. E-mail ANR.DamSafety@vermont.gov or send DSP a letter via the address in the header above.

With Regards to Project Determination Form:

Please submit a Project Determination Form prior to undertaking any work on your dam. In general, a Dam Order application will be required for any type of work that involves invasive construction or alteration (i.e., excavation into the footprint of the dam or in close proximity to the dam). A Dam Order will also generally be required for any work which has the potential to alter the performance or safety of the dam (temporarily or permanently) relative to standards and requirements outlined in the Vermont Dam Safety Rule. The following maintenance work can be performed without obtaining a dam order: vegetation and tree maintenance (mowing, brushing, small tree removal up to 6-inches in diameter, no grubbing), minor earthwork maintenance (filling shallow erosion rills, repairing traffic damage/erosion/ruts, seeding and mulching), minor masonry maintenance (mortar pointing), riprap maintenance (supplementing and grading), rodent damage maintenance (fill animal burrows and damage with compacted granular fill), debris removal from spillways, mechanical maintenance, electrical maintenance, minor surficial concrete maintenance (patching, joint sealing), painting, worker safety system maintenance (hand rails, fall protection, etc.), and video inspections of pipes/appurtenant structures.

In the Case of a Dam Safety Emergency:

1. Activate the Emergency Action Plan for the Dam, if available.
2. Call local Fire/Police - Dial 911
3. Contact the Dam Safety Office and Vermont Emergency Management **immediately**
   - Ben Green, PE – Section Chief, Dam Safety Engineer, Phone: 802-622-4093, E-mail: Benjamin.Green@vermont.gov
   - Steven Hanna – Dam Safety Engineer, Phone: 802-490-6123, E-mail: Steven.Hanna@vermont.gov
   - Vermont Emergency Management (VEM), Phone: 1-800-347-0488

Dam Safety Program Website
https://dec.vermont.gov/water-investment/dam-safety

Hazard Potential Classifications Definitions
HIGH: Dams where failure or mis-operation will probably cause loss of human life.
SIGNIFICANT: Dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.
LOW: Dams where failure or mis-operation results in no probable loss of human life and low economic and environmental losses.
MINIMAL: A dam that meets the LOW hazard definition, above, but is only capable of impounding less than 500,000 cubic feet.

Condition Rating Definitions
SATISFACTORY: No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the applicable regulatory criteria or tolerable risk guidelines.
FAIR: No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.
POOR: A dam safety deficiency is recognized for loading conditions which may realistically occur. Remedial action is necessary. POOR may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Further investigations and studies are necessary.
UNSATISFACTORY: A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.
NOT RATED: The dam has not been inspected, is not under state jurisdiction, or has been inspected but, for whatever reason, has not been rated.

Common Terms & Definitions
Upstream: The side of the dam that borders the impoundment located up gradient of the dam.
Downstream: The side of the dam opposite the upstream side, located down gradient of the dam.
Right: The area to the right when looking in the downstream direction (also known as “river right”).
Left: The area to the left when looking in the downstream direction (also known as “river left”).
Structural Height-of-Dam: The vertical distance from the lowest point in the stream bed or native ground surface at the downstream toe of the dam to the elevation of the lowest non-overflow section of the dam crest.
Embankment: An artificially constructed feature usually consisting of earth and rock with sloping sides and a flat crest, intended to provide a permanent barrier that impounds or is capable of impounding water.
Dam Crest: The top of the non-overflow portion of the dam.
Abutment: The part of a valley side against which a dam is constructed. An artificial abutment is sometimes constructed at the interface with a concrete gravity section.
Normal Pool: The water elevation, reservoir surface area, and reservoir storage capacity that is prevalent at the site or typical under normal, non-storm conditions. Typically, this level is controlled by the principal spillway.
Maximum Pool: The highest water elevation, reservoir surface area, and reservoir storage capacity that could be impounded by the dam, including accumulated sediments, with the water or liquid level at the top of the lowest non-overflow part of the structure or dam crest.
Principal spillway: A structure that maintains normal pool conditions and over which daily non-storm related and flood flows are discharged. Also called a primary or service spillway.
Auxiliary Spillway: The secondary spillway not in use under normal conditions but used when needed to pass flood flows that exceed the capacity of the principal spillway.
Low-level outlet or “LLO”: An installed pipe and operable gate or valve typically located in or near the foundation of a dam that can be used to alter water levels, drain the reservoir, or otherwise meet operational or safety needs. Also called a pond drain.
Spillway Design Flood or “SDF": The storm event which the hydraulic capacity of the spillway structure and dam is designed and required to safely pass. Dam safety rules under development are considering the following prescriptive SDF’s, Low and Minimal = 100-year Storm, Significant = 1,000-year storm, High = PMF. The use of incremental consequence analysis or risk-informed decision making to evaluate the potential of selecting a smaller/site specific SDF is permitted.
Emergency Action Plan (EAP): A written plan that identifies the area that would likely be inundated by the failure of a dam and identifies the actions that should be taken by the Owner to protect life, property, lifelines, and the environment in the event of a dam failure or threatening condition at the dam. The plan is usually implemented in cooperation with the local, regional, and state emergency personnel.
Operation and Maintenance Plan or “O&M”: A plan that provides guidelines for the necessary, regular operation and maintenance activities at a dam.

A complete list of definitions is located in the Vermont Dam Safety Rule accessible via this url link:
https://anrweb.vt.gov/DEC/IronPIG/DownloadFile.aspx?DID=185352&DVID=0