

Q. How does the deterioration and settlement of the foundation impact the function or safety of the structure?

A. Deterioration of timber impacts the spillway's structural integrity, employee safety and public safety.

Deteriorated timber has reduced structural strength making it less able to withstand the wind, water and ice forces it was designed to resist. Timber crib structures are ballasted with rock to withstand the overturning and sliding forces that act on a dam. When timber deteriorates, the structure may not retain the ballast as designed, making the dam more susceptible to failure from overturning and sliding.

Settlement of the Three Island Pond Spillway has shifted the structural members such that the gate has become misaligned and the deck timbers have heaved. The heaving deck presents a tripping hazard for employees working at this site.¹ Shifting of the structural members has weakened the timber joins, impacting structural integrity. The settlement and resulting misalignment of the gate causes difficulties for staff when operating and sealing the gate.

¹ Deteriorated surface timber requires proactive replacement to ensure employees and the public are not at risk when walking on the structure. This is especially important in high traffic locations where the Company cannot completely restrict public access to the structure.