

FERC Licensing Environmental Impact Assessment

*White Meadow Lake POA
Rockaway, NJ*

Princeton Hydro was contracted, on behalf of the White Meadow Lake Property Owners Association, to conduct a third-party review of the environmental impact statement prepared in support of a FERC licensing application for a proposed pump-storage hydroelectric project. The project called for the pumping of large quantities of water from Mount Hope Lake, the primary source of inflow to White Meadow Lake, during non-peak usage hours. The water would be used to fill deep mine shafts at an adjacent closed iron ore mine that dated back to the revolutionary war. The water would in turn be released from the shafts during peak usage hours to operate turbines, with the resulting electricity sold back to the grid to supplement regional peak power demands.

Princeton Hydro had conducted a comprehensive diagnostic assessment of White Meadow Lake in the early 1990s that included a detailed hydrologic analysis of the lake. We had also since that time been actively monitoring the lake's water quality and implementing a restoration plan that had greatly improved the lake's trophic state. The study showed that the hydrology of White Meadow Lake was extremely seasonal, and that in the critical summer months the hydraulic residence time of the lake increased to 120+ days; more than enough to facilitate algal bloom development. The proposed pump-storage operation threatened to impact the lake's water quality and negate past improvements.

Using a variety of modeling tools in concert with flow data compiled through field studies of the feeder stream leading from Mount Hope Lake to White Meadow Lake, we were able to document that the proposed pump-storage operation would exacerbate the seasonal reduction in flow to White Meadow Lake, increasing the opportunity for algal related impacts. The release of water from the mine shafts could also introduce elevated levels of arsenic into the lake. The study also supported that the daily fluctuations in the water level of Mount Hope Lake caused by the pump-storage operation would impact adjacent EPA Critical Wetlands. Princeton Hydro's data were subsequently used to challenge the licensing of the operation and ultimately to halt the project.

