

Lake Size

286 acres

Date of Application

April 2018

Project Sponsor

Providence Water

Project References

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Moswansicut Reservoir, RI

Moswansicut Reservoir is a 286-acre drinking water reservoir located in Scituate, RI. Moswansicut has a maximum depth of 47 feet, an average depth of 20 feet, and



Lowering HAB's Application Barge into Moswansicut Reservoir

was showing signs of degraded water quality. Excessive amounts of phosphorus (P) were fueling nuisance amounts of algae in the reservoir. Some of the types of algae (cyanobacteria) had the potential to produce toxins and harm humans. P leaching from the nutrient-rich lakebed sediments was identified as a primary source of P to the overlying water column and algae.

Samples from the lakebed confirmed that P was high in the sediments and available for release into the water column. A buffered alum application dose and strategy delivered a target dose of 70,359 gallons of alum and 34,824 gallons of sodium aluminate to a 173-acre portion of Moswansicut Reservoir. HAB Aquatic Solutions conducted the application over a six-day period in late April 2018. Despite having the 3rd wettest year for the state in 2018, the buffered alum application resulted in a substantial reduction in total-P and chlorophyll a during the summer of 2018. Average water transparency (Secchi Disk depth) increased, with the maximum transparency increasing nearly 3 times above pre-project conditions. Cyanobacteria blooms were eliminated and there were no negative impacts on non-target organisms.