



Pond Systems Nutrient Removal, Statewide

Amit Itkin

Environmental Engineering, University of Minnesota

Jon Vanyo, MnTAP Advisor

Organization

MnTAP is partnered with the Minnesota Rural Water Association and Minnesota Pollution Control Agency for this project.

Intern Project

Develop strategies to improve nutrient removal in several wastewater treatment ponds.

Incentives to Change

Treatment ponds need to meet nutrient effluent limits. If these limits are not met, downstream water bodies will experience algae-heavy unhealthy ecosystems.

Solutions

Optimize Flow Scheme

Optimizing the flow scheme into a gravity-flow one which holds water at high depths promotes effective phosphorus removal.

Apply Aluminum Sulfate to the Ponds

Aluminum sulfate creates a negatively charged floc that attracts and removes phosphate.

Identify Sources of Storm Water Infiltration

Fixing major sources of infiltration would allow for a higher retention time for the wastewater.

Adopt Waterfowl Prevention Techniques

Use of wolf decoys and anti-bird odor will prevent most phosphorus loading from waterfowl fecal matter.

