

Lake Luxembourg Regional Wetland Best Management Practice

Parameter	TMDL Target	Remaining Load Reduction PRE Project (2017)	Remaining Load Reduction POST Project
Annual Phosphorus Load (TP)	1,686 lbs./yr	688 lbs./yr	521 lbs./yr (31%)
Annual Total Suspended Solids Load (TSS)	427 tons/yr	372.3 tons/year	148.9 tons/yr (34.8%)

PROJECT DESCRIPTION The Core Creek - Lake Luxembourg sub-watershed restoration project was a significant environmental initiative focused on improving water quality and habitat. By removing 19,000 cubic yards of sediment from a 5.5-acre area, the project increased water depth by 1-4 feet and made progress towards the creation of a 7-acre emergent freshwater wetland. Approximately 36,000 wetland plant plugs were planted and protected from predation, and natural habitat structures were added to enhance ecological conditions. Project timeframe: 12/2021 – 03/2025.

PROJECT GOALS In hindsight, the projected environmental impact was too high expecting an annual reduction of 1,719 pounds of total phosphorus and 166 tons of total suspended solids. These estimates were based on a concept of a wetland-pool complex that was hydraulically incompatible and financially out of reach. In practice, over years of refinement, the project would create 7-acres of emergent wetland and enhance 5.5-acre of open water habitat.

PROJECT RESULTS Improvements bring the watershed closer to meeting Total Maximum Daily Load (TMDL) requirements, a meaningful step towards ecosystem restoration and water quality management. The project's 167 lbs./yr total phosphorus (TP) removal reduces the remaining reduction to reach the TMDL to 521 lbs./yr (31%). Given a post project reduction estimated at 223.4 tons/yr total suspended solids (TSS), future load reductions of 148.9 lbs./yr (34.8%) will satisfy the TMDL for TSS.



PROJECT COSTS \$575,838.95 (73%) spent of \$790,914.00 awarded, one of four sources funding \$1.65 million total project cost.

LESSONS LEARNED Climate variability and non-native invasive species present challenges difficult to plan for or mitigate.

PARTNERS Bucks County Parks and Recreation

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