

Clearing up Lake Independence



Pioneer-Sarah Creek Watershed Management Commission taps \$416,000 in Clean Water Funds, advances Three Rivers Park District’s work to improve water quality of popular Hennepin County swimming, fishing lake in Baker Park Reserve



The Baker Park Reserve gully stabilization will reduce phosphorus-loading to Lake Independence by about 134 pounds a year, at a cost of \$130 per pound.

A project that finished early this season in Three Rivers Park District’s Baker Park Reserve is designed to improve the water quality of Lake Independence. One of Hennepin County’s most heavily used lakes, it is impaired for excessive nutrients.

A 2014 subwatershed analysis identified channel erosion in a ravine leading to the lake as a top sediment and phosphorus contributor. It carried an estimated 277 pounds of phosphorus and 300 tons of sediment — the equivalent of 23 dump truck loads — to Lake Independence annually. Phosphorus feeds the algae that can turn lakes green.

“The lake has always had severe algal blooms,” said Brian Vlach, senior water resources manager for Three Rivers Park



Vlach

District. “The lake is pea-green through portions of the summer due to algal blooms.”

The \$520,000 Pioneer-Sarah Creek Watershed Management

Commission (WMC) ravine stabilization, which came in \$34,000 under budget, will accomplish an estimated 15% of the phosphorus reduction needed to meet Minnesota Pollution Control Agency (MPCA) water-quality standards.

Despite the algae, 832-acre Lake Independence remains a primary attraction in the metro park that saw

By late May, the re-sloped ravine stabilization in Baker Park Reserve was greening up. Seven species of wildflowers and nine grasses were planted in the dirt covering rock riprap and topped by an erosion control blanket.

Photo Credit:
Wenck Associates



From left: *Bluestem grass was used in the erosion control blanket. After a Dec. 19, 2019, construction meeting, a group from Wenck Associates, contractor Minnesota Native Landscapes, the Pioneer-Sarah Creek Watershed Management Commission, the park district and BWSR toured the site. Devan Maruska of Minnesota Native Landscapes staked an erosion control blanket. The ravine stabilization involved 1,800 feet in the main channel, plus 400 feet in two tributary ravines. Photo Credits: Ann Wessel, BWSR*

well over a half-million visitors in 2018. The WMC deemed Lake Independence a high-priority sentinel lake, based partly on its high visibility and recreational use.

“The reduction of phosphorus in Lake Independence will clearly lead towards improved water quality and most notably water clarity,” said Joe Baker, chairman of the Pioneer-Sarah Creek WMC.



Baker

The stabilization is a first step to reduce external phosphorus loading. To accomplish its long-term goal of increasing the lake’s clarity to 8 to 12 feet, the WMC is considering an alum treatment to address internal phosphorus loading. Over the past 20 years, clarity has averaged 4 to 6 feet.

Lake Independence attracted more than 27,100 swimmers to the park’s two beaches, launched nearly 15,600 boaters from its public access and drew more than 3,400 anglers to its shore in 2018, the most recent year for which Metropolitan Council data are available.

“It has been a very good fishing lake,” Vlach said. A community of fish houses pops up during the winter.

Anglers target crappies in early spring, walleye in the summer, and muskies well into the fall.

“It’s been a good muskie fishery in the past. There’s some big muskies in there.” Vlach said.

A technical adviser to the WMC, Three Rivers coordinated the project. Minnesota Native Landscapes of Otsego was the contractor. Wenck Associates of Maple Plain handled project design and construction administration.

Work was made possible by a \$416,000 Clean Water Fund grant from the Minnesota Board of Water and Soil Resources (BWSR). A \$59,500 Hennepin County Opportunity Grant from the county’s Environment and Energy Department, plus \$44,500 cost-share among the WMC, park district, Lake Independence Citizens Association and the cities of Independence and Medina covered the balance.

“Clean Water Funds by all means enable a project like this,” Baker said “The cities of Independence, Medina and a small part of Maple Plain as the cities of benefit just really would not have the funds for that. We’ve had great support from BWSR as well as Hennepin County and Three Rivers Park District to

ultimately pull the funding together.”

Construction finished in mid-February.

The project was designed so park visitors won’t see a trace of construction.

“The site looks very good,” Seth Bossert, a landscape architect and project inspector with Wenck, said after a late-May visit. “We had good germination rates of the seed. It was probably 4 to 6 inches tall, so it’s starting to look more emerald-colored.”

Native plants — seven species of wildflowers and nine grasses — were planted in the dirt covering rock riprap and topped by an erosion control blanket. In mid-December, the Minnesota Native Landscapes crew was installing riprap and re-sloping the ravine’s banks. Newly constructed rock cross-vanes, which serve as grade-control structures, stood out against the snow.

The 2,200-foot channel stabilization was delayed one year to obtain a U.S. Army Corps of Engineers permit, required because of the project’s scope. Vlach said the delay resulted in more lead time and therefore lower bids.

Pending BWSR approval, the projected surplus could fund smaller projects within the 7,632-acre watershed. Those

might include native plantings in Baker Park rain gardens, Lake Independence shoreline restorations, a carp barrier on the Ardmore Channel, or erosion control projects elsewhere in the watershed.

The grant expires in December.

The Hennepin County Environment and Energy Department is developing other cost-share and locally funded projects within the watershed. Department staff provide technical assistance and support to Pioneer-Sarah Creek WMC, operate a grant program, and conduct landowner outreach.

“We want to be able to demonstrate that we can deliver projects, and there’s a lot of interest from landowners in this area,” said Karen Galles, Land and Water Unit supervisor.

Nearly 500 private landowners’ properties drain directly to Lake Independence or to Lake Ardmore, which are connected by a channel. About half are lakeshore or suburban; half are rural residential or agricultural.

Three Rivers’ continued water-quality monitoring and a re-evaluation of the TMDL will help to determine where in the watershed to focus next.