

Public Health and Water Quality at Limitless Park

The shoreline and landscape of the Winona Lake Limitless Park are contributing to poor water quality and creating health and safety hazards for residents and park visitors. A new shoreline of glacial stones and native plants will reduce erosion and deter the exotic invasive Canada Goose population.

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Introduction

The shoreline and landscape of the Winona Lake Limitless Park are contributing to poor water quality and creating health and safety hazards for residents and park visitors. The old seawall is crumbling and the remaining shoreline is eroding, diminishing water quality by adding sediments and algae-inducing nutrients to the lake. The park's turf grass near the shoreline attracts an overpopulation of Canada Geese. The amount of goose droppings spread throughout the park's lawn, trails and Splash Pad, present a public health risk. This health hazard is particularly concerning for young visitors to Limitless Park who may already have compromised immune systems.

Imagine taking your family on a trip to spend the day at Limitless Park in Winona Lake. You swim at the beach, play on the playground, frolic in the Splash Pad and have a picnic lunch. You may even rest in the grassy lawn. However, you have a hard time avoiding the goose poop. Playing on the seawall feels dangerous. What if later that night a family member gets sick with flu-like symptoms. The perimeter of the park is not in synch with the park's core. The shoreline and landscape features are contributing to poor water quality and creating health and safety hazards. Further, the turf grass attracts Canada Geese and the amount of goose droppings spread throughout the park is public health risk. According to the U.S. Centers for Disease Control and Prevention, exposure to goose droppings can cause diarrhea, urinary tract infections or respiratory illness. Geese droppings can also contain salmonella and other germs that cause gastrointestinal issues. Large numbers of geese leave large quantities of feces. A single goose can defecate every 20 minutes (Valiela) for up to 1.5 pounds of feces each day (Parkhurst)

The Plan

A new shoreline of glacial stones with a native plant buffer will reduce erosion and help deter the exotic invasive Canada Goose population. A robust education and social marketing campaign will discourage the feeding of ducks and geese and bring about public behavior change at Limitless Park.

The KLA Team is working with The Watershed Foundation to bring together community partners, raise funds and implement solutions.

1. **Shoreline:** A large stabilization project is planned for the 500' linear feet of shoreline extending from the edge of the public swimming beach south to the mouth of Cherry Creek. What is remaining of the old seawall and rebar will be removed and replaced with a mix of glacial stones and native plants to stop the erosion. This healthier shoreline will improve water quality in Winona Lake. Calculations using the EPA Region 5 model, estimate that this project will directly stop 31.5 tons of sediment, 53.6 pounds of nitrogen, and 26.8 pounds of phosphorus from polluting Winona Lake every year – which equates to a reduction of 268,000 pounds of weeds and algae.
2. **Native Plants:** The shoreline stabilization project not only reduces erosion, it is a deterrent to Canada Geese. As an additional barrier, a wide native plant buffer will be incorporated along the shoreline, as well as incorporate landscaping throughout the park that is a deterrent to Canada Geese, but still attractive to visitors. Geese prefer not to feed or loiter in areas where they do not have a visual line of sight to avoid potential predators.
3. **Public Education:** A campaign will impact thousands of park visitors, as well as 400 lake residents and 5,000 Town of Winona residents.
 - a. It will be important to inform the residents and visitors about the healthy shoreline project, its benefits to the park and the lake, and the planned timeline. This explanation will be shared via signs at the park, newsletter/magazine articles, social media and news releases.
 - b. A robust campaign to *NOT FEED THE WATERFOWL* will be implemented to change behaviors. People believe they are helping the ducks and geese; they do not understand the consequences. It's bad for the birds, it's bad for the lake and it's bad for visitors to Limitless Park.
 - The adult-focused education and social marketing program will utilize the ClearChoicesCleanWater.org campaign, signs in the park, social media, electronic and printed materials including newsletter, newspaper, and magazine articles.
 - The youth-focused education and social marketing program will utilize the ClearChoicesCleanWater.org 'Clean Water Super Hero' campaign. The biggest component of this campaign is distributing 1,000 t-shirts to young Winona Limitless Park visitors. The Watershed Foundation will cooperate with the Parks Department to hold Clean Water Superhero pop-up events at the park (particularly during the free lunch time) where we will offer short hands-on educational activities, while distributing T-shirts, bookmarks, and stickers).

There will also be a Clean Water Superhero day during the Park's Superhero Week. These 1,000 children in their t-shirts will act as mini-billboards spreading the simple messages: Do Not Feed the Ducks, Pick up Your Pet's Poo, Grow Native Plants, and Recycle. Participants will also be encouraged to help let other park visitors know that it is not healthy to feed wild ducks and geese in the park – or anywhere.

The Partners

A. **Lead Partner:** *The Watershed Foundation*

Since 1997, The Watershed Foundation (TWF) has been protecting and improving water quality in the lakes and streams of the Upper Tippecanoe River Watershed. TWF's work to reduce and stop water pollution at its source improves downstream water quality impacts like toxic algae blooms, invasive weeds, sedimentation, and diminished fishing and recreational activities in our lakes and rivers. TWF focuses efforts on the Upper Tippecanoe River Watershed. This area covers 236 square miles and contains more than 60 lakes within portions of Noble, Whitley, and Kosciusko Counties. This area includes the towns of North Webster, Pierceton, Larwill, Warsaw and Winona Lake, as well as the Tippecanoe River.

TWF's Executive Director Lyn Crighton is the lead coordinator of this project. Lyn has 10 years of experience building partnerships and implementing these types of award-winning education programs and projects in the upper watershed. TWF's marketing and outreach specialist Eileen Oaks will prepare newsletter articles, news releases, website/Facebook updates, and conduct educational activities with youth in the park. Theresa Sailor, watershed coordinator for the Clean Waters Partnership, will also assist in sharing information. TWF is also working closely with Winona Lake Town Manager Craig Allebach and Director of the Winona Lake Parks Department Holly Hummitch.

- B. The Town of Winona Lake & Winona Lake Park Department have been active partners. The Town is considering changes to policy to discourage the feeding of geese and will provide the long-term maintenance for the new native plant areas.
- C. The Lilly Center for Lakes & Streams will conduct a student research project to enumerate water quality benefits and changes in goose population and goose poop quantities before and after project implementation.

The Timetable

PHASE I

Nov/Dec 2017	KLA team formed; hold meetings with Town of Winona Lake and Parks Department
Dec 2017/Jan 2018	Hold site visit with Indiana DNR staff; Contact environmental engineering consultants for design ideas and cost estimates
January 31, 2018	Apply for IDNR LARE (Lake and River Enhancement) grant to cover largest share of construction costs
February 1, 2018	Apply to K21 Health Foundation for permitting and engineering design
Spring-Summer 2018	Hire environmental engineering consultants to complete project design and finalize costs Obtain permits from the US Army Corps of Engineers, IDEM and IDNR
January – August 2018	Build community support for Phases II & III – Presentation of white paper by Kosciusko Leadership Academy team, develop partnerships; apply for grants and raise remaining funds
Spring – Fall 2018	Implement youth and adult education program: signage, social media, electronic and printed materials including newsletter/newspaper/magazine articles to inform residents and visitors
Summer 2018	Distribute Clean Water Superhero T-shirts, bookmarks, and stickers to youth at Winona Limitless Park during pop-up educational activities & events / Distribute www.ClearChoicesCleanWater.org postcards to parents and adult park visitors / Distribute materials at the Northern Indiana Lakes Festival
Summer 2018	Pre-construction goose and aquatic plant research by Lilly Center for Lakes & Streams

PHASE II

Fall 2018	Construction of project including installation of rocks and native plants on shoreline; planting rain garden adjacent to parking lot
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PHASE III

Spring 2019	If not completed in the fall of 2018, plant native plant buffer along shoreline; engage volunteers; train maintenance staff
Summer 2019	Continue public education and behavior change campaign concerning waterfowl/Post-construction goose and aquatic plant research by Lilly Center for Lakes & Streams at Grace College

Funding

The Winona Lakeshore Project is expected to cost \$160,866 to be fully implemented.

- A. **LARE:** The Indiana Department of Natural Resources (IDNR) has a grant program called Lake and River Enhancement (LARE) for which this project is an excellent fit. The LARE grant potentially funds up to 80% of the project's design and construction costs. An initial application was submitted on January 31, 2018. LARE funds aren't awarded until August, so additional updates to the grant are permitted as the project gains traction, i.e. additional funding. Permits and engineering designs are already being initiated to enable project implementation in the fall of 2018.
- B. **K21 Health Foundation:** K21 will support the project's up-front costs, including the project permitting and engineering design. This an essential step in the process. Completion of these tasks this spring would make it possible to adjust the construction costs in the LARE grant proposal before their final review in June/July. K21's contribution signifies a strong showing of local community support for the project and would make our LARE proposal more competitive and attractive to the reviewers.
- C. **Kosciusko County Convention Recreation & Visitors Commission:** KCCRVC has committed \$10,000 toward Phase II construction this fall.
- D. **Arrowhead RC&D:** This regional conservation partner has committed \$4,400 toward the Phase II construction this fall.
- E. **The Kosciusko County Community Foundation:** A proposal was submitted to KCCF to fund the public education and outreach campaign.
- F. **The Town of Winona Lake:** The Town of Winona Lake has committed to supporting 10% of the project's construction costs.
- G. **Kosciusko REMC EnviroWatts:** A proposal was submitted to support Phase II implementation costs this fall.
- H. **NIPSCO:** A proposal was submitted to support Phase II implementation costs this fall.
- I. **Additional Support:** If sufficient funds are not raised from these entities, TWF will approach the Dr. Dane and Mary Louise Miller Foundation, the Winona Lake Preservation Association, and private individuals in the community.

As of April 9, 2018, the project has grants and pledge contributions for \$58,642**Impact Metrics**

A. Research Project

In collaboration with the Lilly Center for Lakes & Streams at Grace College, students will conduct research projects on two outcomes:

1. To quantify the change in the number of geese or goose droppings (because of associated E.coli bacteria levels) in Winona Lake Limitless Park before and after the implementation of the shoreline project
2. To identify changes to types and quantity of aquatic plants in the adjacent nearshore area of Winona Lake before and after implementation of the shoreline project.

B. Education Campaign

We can enumerate the number of pledges taken to “Not Feed the Waterfowl” at www.IndianaClearChoicesCleanWater.org through our social marketing campaign. If the public education campaign to NOT FEED THE WATERFOWL is successful, it would be logical to use the Winona Lake Limitless Park program as a model to spread the positive behavior change messages to additional local parks & beaches. Ideas for expansion include the Warsaw Parks summer program on Center Lake, the YMCA day camp on Pike Lake, library summer programs, as well as the eight (8) summer camps operating on Kosciusko County lakes

C. Awareness Assessment

In addition, TWF is currently implementing a longer-term measurement of awareness, knowledge, and behavior change with respect to water quality and the feeding of waterfowl via a community-wide social indicator survey. This survey is presently underway, and a follow-up survey will be conducted again in five years.

Conclusion

This project is meant to improve a great asset within our community through innovative environmental design and positive changes in human behavior. KLA has emphasized the high-quality resources within the community. This project tries to build on the success of Limitless Park by making it a healthier and more environmentally-friendly destination.

If the behavioral changes work at Limitless Park, the Watershed Foundation is interested in sharing the effort with other area parks; Center Lake, etc. Invasive waterfowl are a problem throughout the Midwest. Behavioral change can be a significant part of changing this issue.

Appendix

Project Budget

Expense	Amount	Confirmed
Design, Permit, Construction Oversight	\$25,000	
Construction & Planning	\$110,000	
TWF Construction Project Administration	\$5,000	
Public Education Campaign	\$19,406	
Student Research Project	\$1,460	
Total Expense	\$160,866	
Income		
K21 Foundation (Private)	\$25,000	Yes
Town of Winona (Government)	\$13,500	Yes
The Watershed Foundation	\$4,782	Yes
Arrowhead RC&D	\$4,400	Yes
KCCRVC	\$10,000	Yes
Lakes & Streams	\$1,460	Yes
Kosciusko County Community Foundation	\$8,264	Pending
Winona Lake Preservation Association	\$2,500	Pending
LARE Grant (Government)	\$80,960	Pending
KREMC EnviroWatts	\$3,000	Pending
NIPSCO	\$5,000	Pending
Local community sponsors	\$2,000	Pending
Total Projected Income	\$160,866	