

*A Review of the Centerville Creek and Hika Park
Restoration Project*

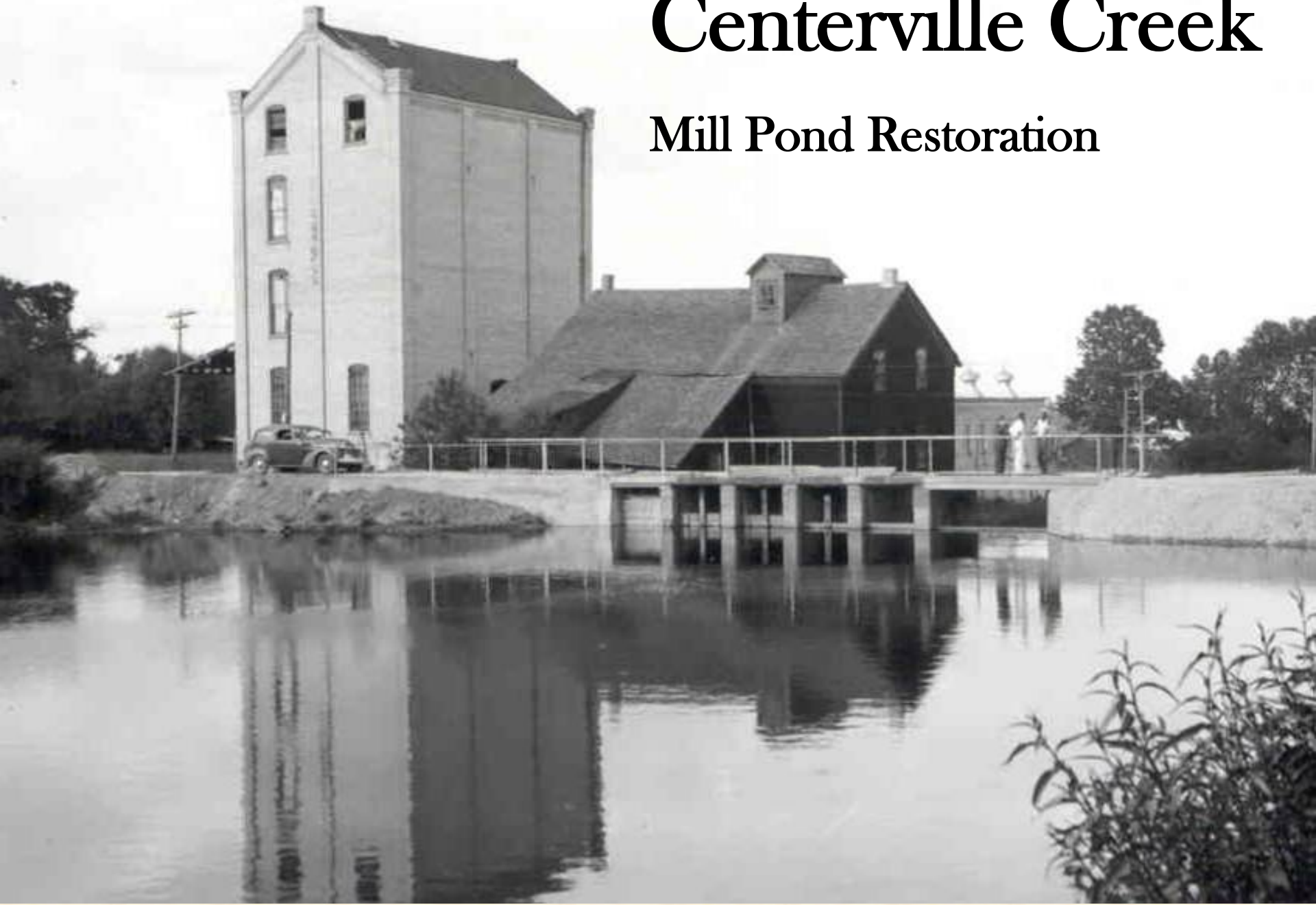
*A Partnership between the Village of Cleveland and LNRP
that helped form the Friends of Hika Bay*



Friends of Hika Bay
Calvin, Pine, Point, Fischer & Centerville Watersheds

Centerville Creek

Mill Pond Restoration



Centerville Creek

Mill Pond Restoration



WILD LIFE AND BOATING ON CENTERVILLE LAKE—BACK OF DAM

1936



LAKE FORMATION BACK OF CENTERVILLE DAM



CONFLUENCE OF NORTH AND SOUTH BRANCHES
OF CENTERVILLE CREEK

LOCATION OF FORMER DAM PREVIOUSLY REMOVED

HIKA SHORES NATURAL AREA

HIKA PARK BOAT
LANDING

CENTERVILLE CREEK RESTORATION AREA

VIEW OF CENTERVILLE CREEK AND HIKA SHORELAND PROJECT AREA



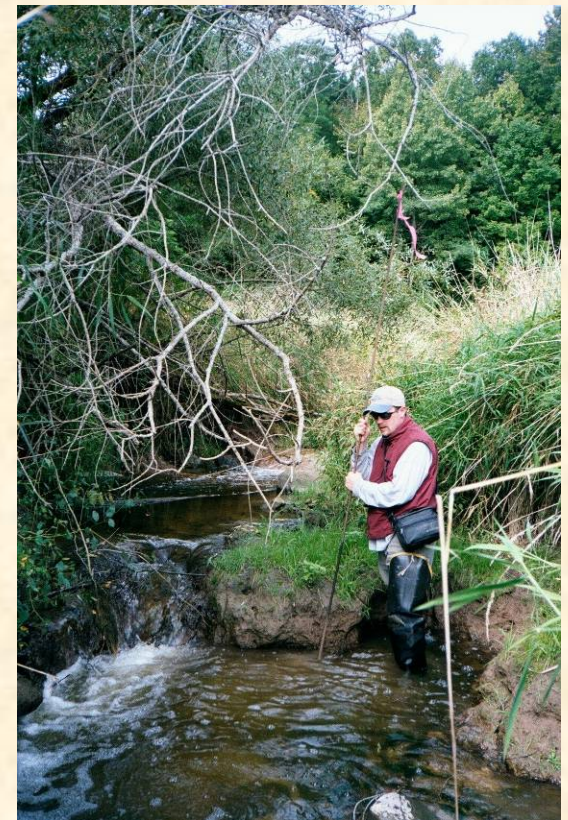
Centerville Creek Restoration Timeline

- 1996 Dam removed
- 2000-2001 WDNR River Planning Grant Assessment (Interfluve)
- 2002 USACE Section 206 initiated



River Planning Grant Assessment and Section 206

- Purpose: “to investigate possible restoration alternatives for Centerville Creek (in the impoundment area)
- Geomorphic assessment
- Topographic survey
- Concept plans
- Preliminary cost estimates of almost \$900,000 plus with a required 50% match



Centerville Creek Restoration Timeline

- 2003 Priority Restoration Project (PRP) Alternatives Analysis
- 2005 Wisconsin Coastal Management Grant Helped Purchase Hika Sands Property
- 2007 Village of Cleveland 20-Year Comprehensive Plan – Bay Lake RPC
- 2009 Village of Cleveland Municipal Facilities Report – Plunkett Raysich Architects
- 2009 Contract given to LNRP by the Village of Cleveland for a Feasibility Analysis

Inputs on Design Elements

- Citizen Advisory Committee
- Interfluve
- River Alliance
- UW Stevens Point – Watershed Studies
- County LWCD, DNR, and Invasive Species Coordinator
- D & H Land Surveys
- UW Madison – Landscape Designs



Open Space Planning and Design Course



HIKA BAY RESTORATION PLAN

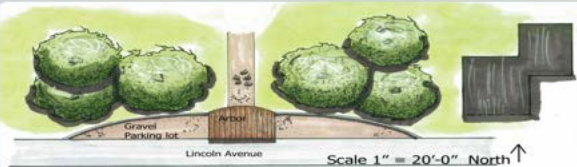
CONCEPTUAL MASTER PLAN



Scale 1" = 200'-0" North ↑

Lookout Entrance

The lookout entrance to the park is located on the North side of Lincoln Avenue and is intended to serve as a welcoming point for the community. The arbor will hold informational signs and maps about the park itself as well as the history of the Mill Pond which was once located directly to the North of the entrance.



Scale 1" = 20'-0" North ↑

Character Sketches

The Boardwalk

The Boardwalk will safely take people on a tour of the ridge and swale ecosystem, incorporating signage to educate people of the ecosystems importance.



Connections

A path underneath the bridge constructed of concrete will allow flooding while providing the asset of connecting the park while dry.



Walk to Lake Michigan

Section view showing the transition from the open recreation area by the pumping station to the pier. Native planting would resemble the swale ecosystem.



Scale 1" = 15'-0"

PROJECT STATEMENT

The Village of Cleveland WI recently received a grant for the restoration of Centerville Creek with the help of the Lakeshore Natural Resources Partnership. The creek runs from West of the town, to East into Lake Michigan. The restoration grant will provide the means for the Village of Cleveland to have sediment removed from the dry basin of the old Mill Pond. Sediment had been deposited over time as a result of a mill dam that was once in place. The project will also include recontouring the slopes leading down to Centerville Creek as well as the creek bed itself. The village hopes that this work will help to bring back trout to the creek, which is an active trout stream. The grant money also allowed the Village of Cleveland to purchase land on the East side of Lakeshore Road directly behind an active ridge and swale ecosystem. The main purpose of this project is to graphically explore multiple options of park design for the Village of Cleveland.

BENJAMIN MARK KARP
LA 463 PROJECT #13
4-28-2010
PROFESSOR SAM DENNIS

Project Goals

- Improve Site Connectivity throughout the Park
- Improve and exploit existing views, using Lake Michigan as a Focal Point
- Create a Secondary Entrance Closer to town along Lincoln Avenue
- Restore Land obtained through the grant to further expand the Ridge and Swale Ecosystem
- Create an Enjoyable and Educational Park Experience

Beachfront

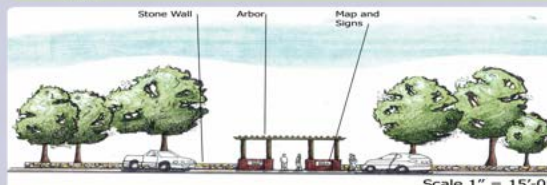
The beachfront zone of the site has been designed to improve views out to Lake Michigan. This has been accomplished by opening up lines of sight from the Western edge of the site and Lakeshore Road. Views from on site have also been improved by adding several small gazebos for people to gather in, as well as seat walls along the edge of the sand dunes. A pier has also been added to the site so that people can interact more freely with the lake. The pump station should be improved to allow for public restroom facilities and a concession stand.



Scale 1" = 50'-0" North ↑

Lookout Entrance

View of parking adjacent to the arbor which houses maps and informational signage. Information at this site would highlight the history of the Mill Pond.



Scale 1" = 15'-0"

Example of UW Madison Student Design

We received 19 student designs for the overall restoration plan.

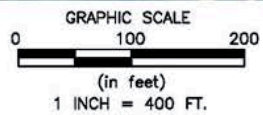
Centerville Creek Restoration

Our Aspirations:

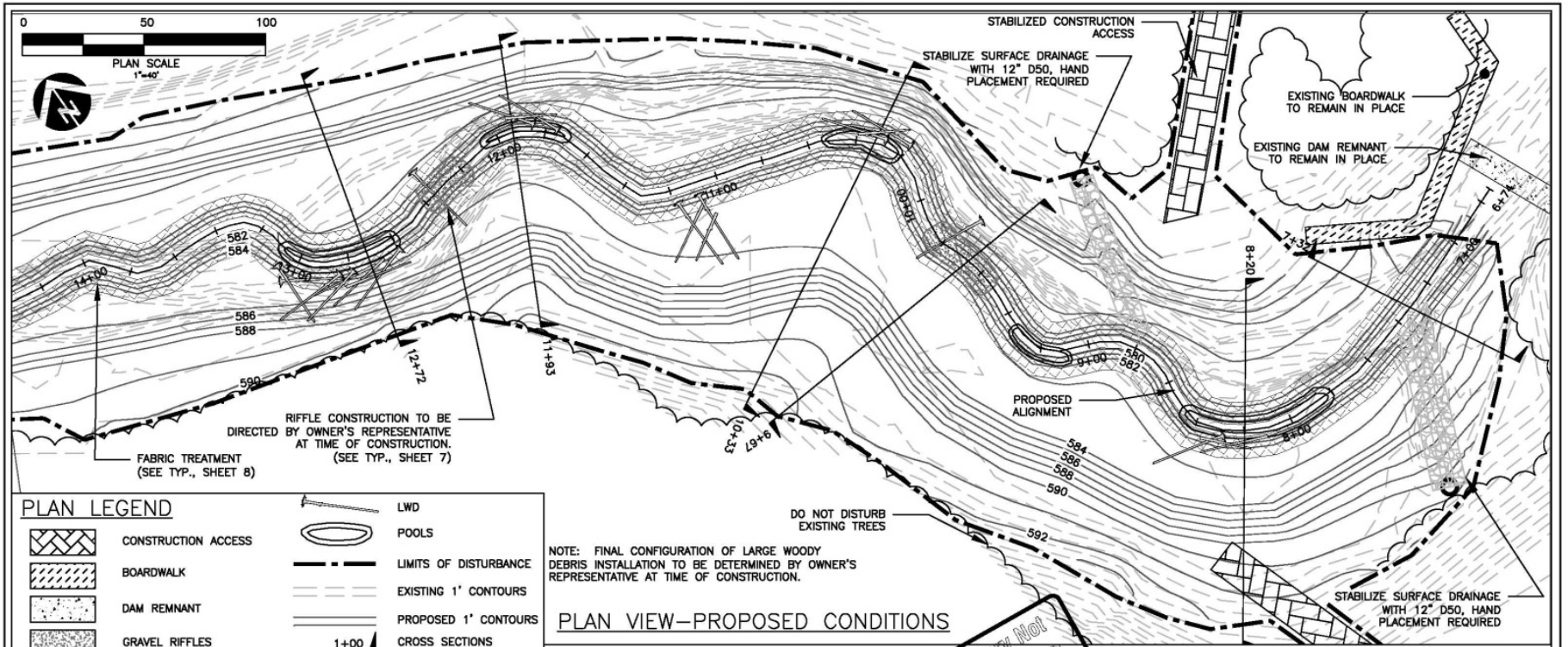
*A return to a
natural
appearing and
functioning
stream*

*Similar to the
upstream
character of the
South Branch*





PROPOSED CONDITIONS
CENTERVILLE CREEK
CLEVELAND, WI

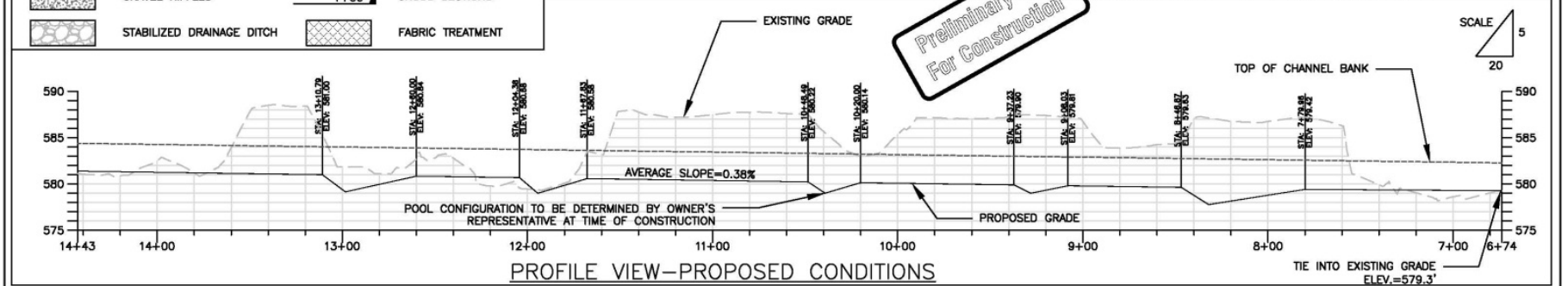


PLAN LEGEND

	CONSTRUCTION ACCESS		LIMITS OF DISTURBANCE
	BOARDWALK		EXISTING 1' CONTOURS
	DAM REMNANT		PROPOSED 1' CONTOURS
	GRAVEL RIFFLES		CROSS SECTIONS
	STABILIZED DRAINAGE DITCH		FABRIC TREATMENT
	LWD		POOLS

NOTE: FINAL CONFIGURATION OF LARGE WOODY DEBRIS INSTALLATION TO BE DETERMINED BY OWNER'S REPRESENTATIVE AT TIME OF CONSTRUCTION.

PLAN VIEW-PROPOSED CONDITIONS



PROFILE VIEW-PROPOSED CONDITIONS

NO.	BY	DATE	REVISION DESCRIPTION

BOL	BOL	GO, MJM
DRAWN	DESIGNED	CHECKED
GO, MJM	05/04/11	PROJECT
APPROVED	DATE	PROJECT

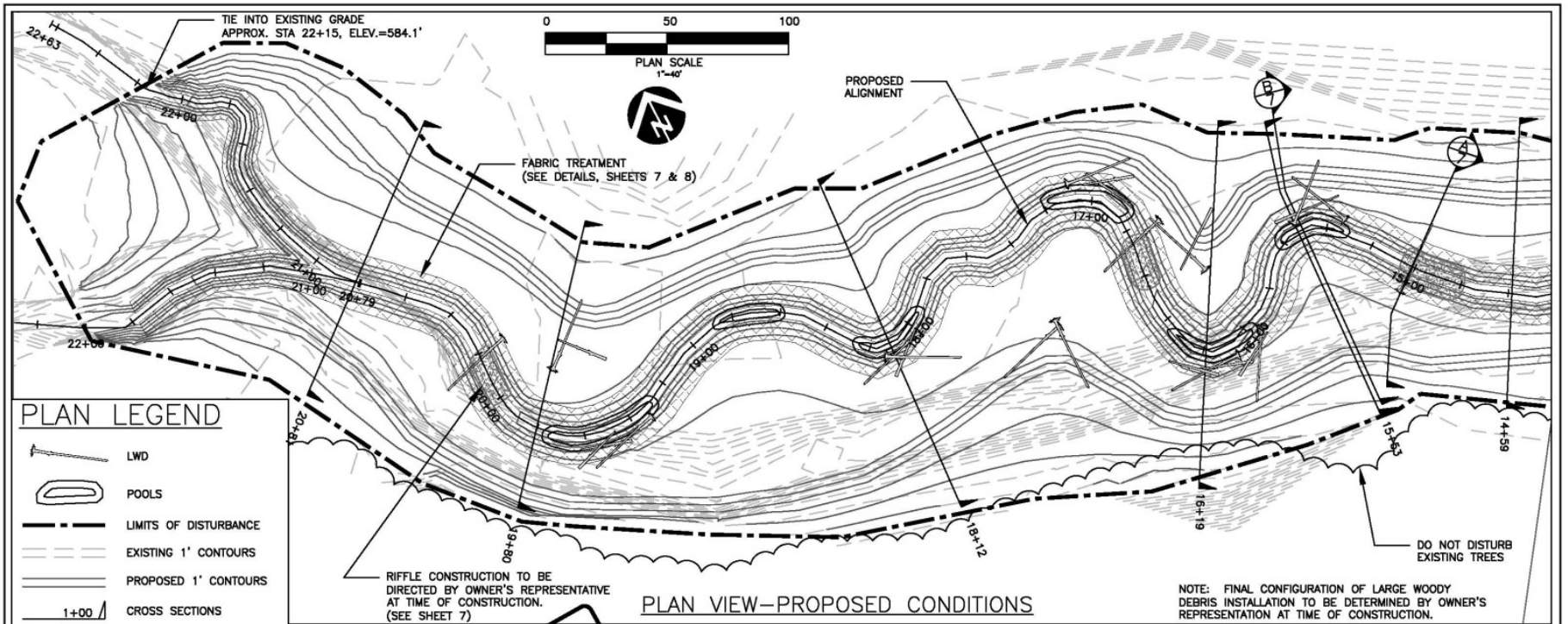
Village of Cleveland
Cleveland, WI
Centerville Creek Restoration

3602 Almond Avenue Suite 3
Madison, WI 53714
608.441.0342
www.inter-fluve.com

Proposed Plan View
and Profile

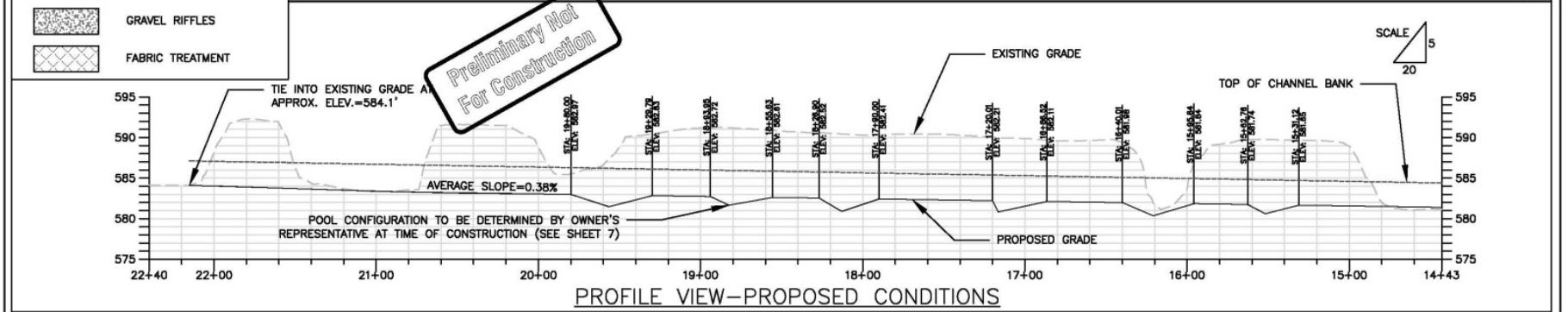
SHEET
3 OF 14





PLAN VIEW-PROPOSED CONDITIONS

NOTE: FINAL CONFIGURATION OF LARGE WOODY DEBRIS INSTALLATION TO BE DETERMINED BY OWNER'S REPRESENTATION AT TIME OF CONSTRUCTION.



PROFILE VIEW-PROPOSED CONDITIONS

NO.	BY	DATE	REVISION DESCRIPTION

BOL DRAWN	BOL DESIGNED	GO MJM CHECKED
GO MJM APPROVED	05/04/11 DATE	PROJECT

Village of Cleveland
Cleveland, WI
Centerville Creek Restoration



3802 Atwood Avenue Suite 3
Madison, WI 53714
608.441.0342
www.interfluve.com

Proposed Plan View
and Profile



Project Photos
October / November 2012



Project Photos
November 2012



Project Photos

Tree Planting

Spring 2013



PASSIVE - NATURE BASED

TRANSITIONAL

ACTIVE

RESTORE BEACH ... REMOVE WOODY PLANTS ... ENCOURAGE BEACH GRASSES AND DUNES

REMOVE INVASIVE SHRUBS AND OTHER PLANTS FROM WOODED AREA

WOOD BENCH (TYPICAL)

HIKING TRAIL LOOP SECTION ALONG EXISTING DUNE CREST

RESTORE AND EXPAND SWALE WETLAND

REMOVE OLD CONCRETE PIECES

TRAIL HEAD WITH KIOSK FOR PROPERTY AND LOCAL BUSINESS INFORMATION

COVERED VIEWING AREA AND SEATING CIRCLE WITH INTERPRETIVE GRAPHIC DISPLAYS

PEDESTRIAN BRIDGE ... PREFERRED LOCATION SHOWN. LOCATION TO BE VERIFIED WITH REVIEW AGENCY.



NATURALIZE TURF AREA ... CREATE WET MEADOW

RIDGES TYPE LANDFORM WITH FILL REMOVED FROM CENTERVILLE CREEK RESTORATION PROJECT. PLANT WITH NATIVE TREES

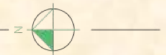
TRAIL LOOP SECTION THROUGH MEADOW

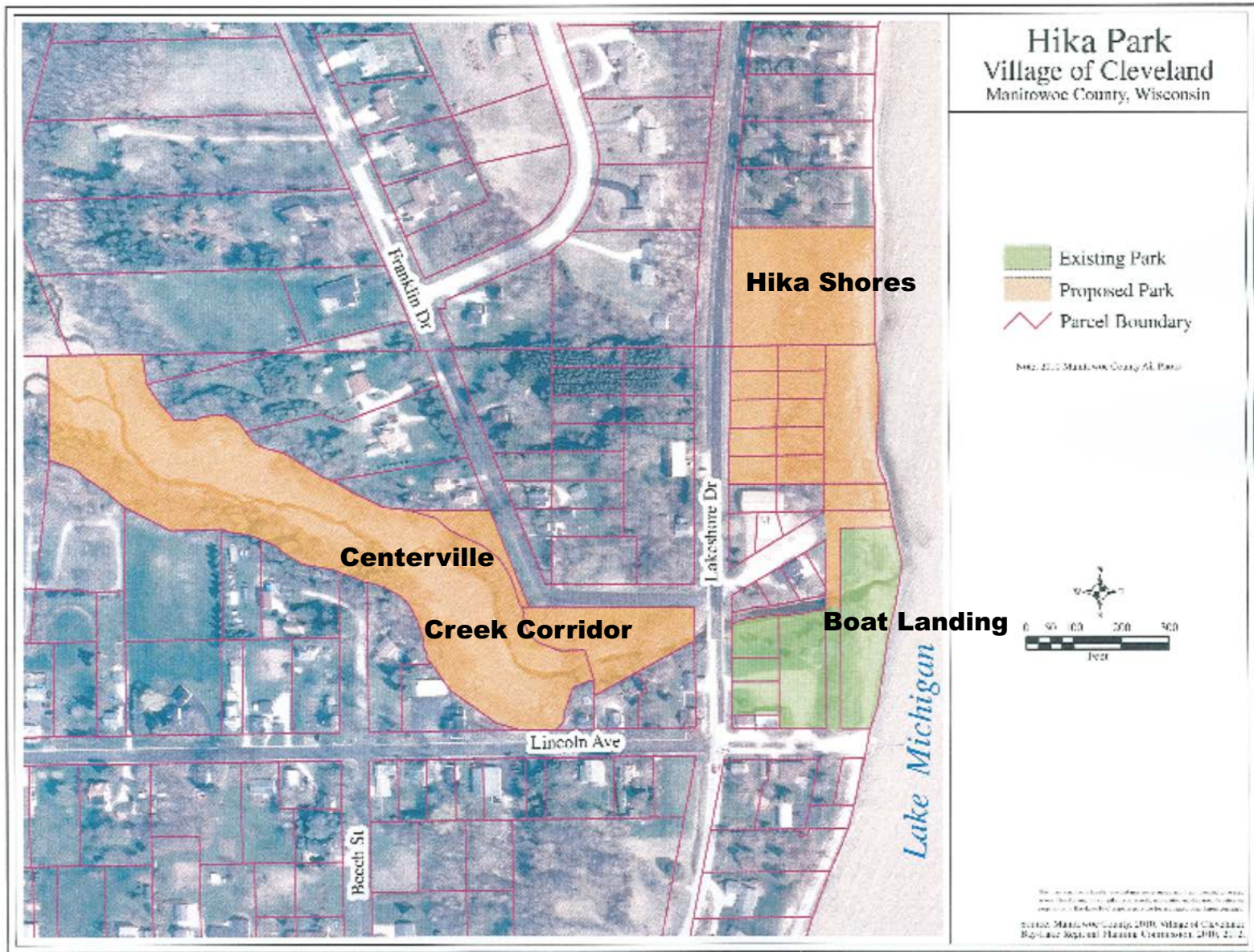
MOWED DITCH AND ROAD EDGE TO MAINTAIN "MANAGED" NATURAL LANDSCAPE PRESENTATION OF PARK

PARKING LOOP WITH CENTER GARDEN SPACE UPON FUTURE REMOVAL OF DPW GARAGE

POTENTIAL FOR FUTURE EXPANSION OF BOAT TRAILER PARKING UPON REMOVAL OF APARTMENT BUILDING

DESIGN CONCEPTS FOR HIKA PARK SHORELAND





In September 2012, Cleveland Village Board approved LNRP recommendations to expand Hika Park and delineate three areas: Boat Landing, Hika Shores, and Centerville Creek Corridor. The park area expanded 6.3 times from 2.21 to 13.85 acres, an increase of 11.64 acres.

Partnership UWGB-Manitowoc Ten Years 2010 - 2020

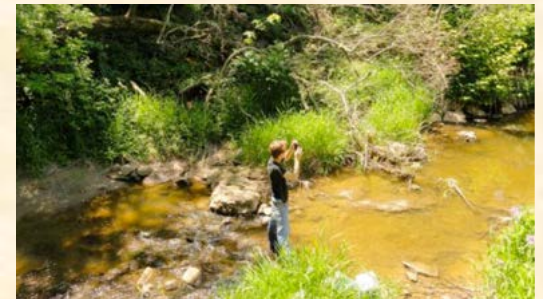


Student interns

- Baseline assessment
- 5 points in 2010, 7 points in 2011, 10 points in 2012, 14 Points in 2016
- Weekly measurements of physical, chemical, biological characteristics
 - pH, temperature, flow, turbidity, conductivity, dissolved oxygen, ammonia, phosphorus
 - *E. coli*

Lab Courses

- Macroinvertebrate surveys
- Repeated Measures on Centerville Creek



Pedestrian Bridge

**Designed and
Installed with
Additional Grant
Dollars**

**Links South and
North Portions of
the Park**



Interpretive Kiosks

Kiosk #1

Centerville Creek



Witness the renewal of Centerville Creek

"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has." Margaret Mead



CREEK RESTORATION PROJECT

REMOVING THE DAM POWERS STEWARDSHIP

After the dam was removed in 1996, decades of sediment, a severely degraded stream bed and an abundance of invasive plants remained. Sediment from the mill pond washed into Lake Michigan impacts fish habitat and causes algae blooms. *The Village begins restoration planning.*



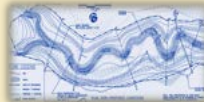
STRONGER TOGETHER

With a combined focus to improve water quality and wildlife habitat, restore the creek and increase recreation, partnerships form.

A CITIZEN ADVISORY COMMITTEE gathers many area groups to work together, ensuring the creek returns to a healthy, functioning ecosystem.

WATER QUALITY MONITORING

Students from UW-Manitowoc sample 14 sites in the watershed each year to better understand the overall impact that various land practices have on the quality of our lakes and streams and to assess any improvements to water quality after restoration. SEE THE DATA AT WWW.HIKA-BAY.ORG

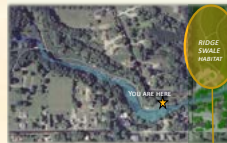


RESTORATION DESIGN Meandering, With A Purpose

To restore Centerville Creek back to a free flowing, meandering stream with native plantings that reflect conditions prior to dam construction.

ONE PROJECT'S LEFT-OVERS? ANOTHER'S TREASURE!

Truckloads of sediment from the creek were hauled away, across the street! The ridge/swale ecosystem of Hika Shores was in need of restoration and the leftover sediment from the creek project was just the answer.



Sediment removed from the creek was repurposed just down the road at Hika Park to restore the ridge/swale habitat, rebuild a section of dunes, and create a new naturalized ridge along the roadway. Creek restoration spurred other projects and improvement efforts to include the expansion of Hika Park from 2.21 acres to 13.85 acres, construction of the pedestrian bridge over Centerville Creek, bird monitoring and many stewardship opportunities.



EXPLORE THE UNIQUE RIDGE/SWALE AND SHORELINE HABITATS OF HIKA PARK

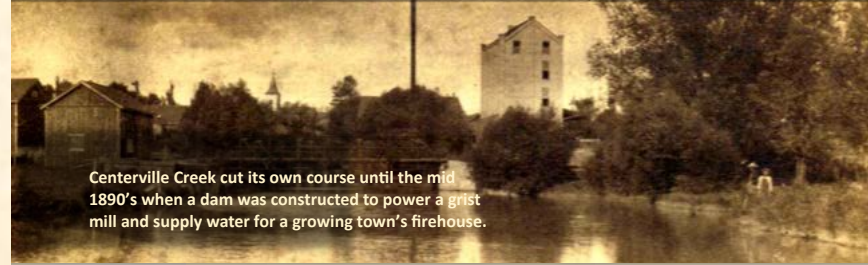
Walk to the park. Learn more about the unique ridge/swale and shoreline habitat restoration. Discover the rich diversity of plants and animals found there.

ADDITIONAL SUPPORT PROVIDED BY



A Village Shaped by Water

A history of growth and restoration for a community and its creek



Centerville Creek cut its own course until the mid 1890's when a dam was constructed to power a grist mill and supply water for a growing town's firehouse.



OLD MILL POND

The dam created the town's first mill pond and the site became a popular gathering place for the community. The creek and mill pond gave residents a place to grow an income, cast a line for a fish dinner or skate with family on the frozen water each winter.

The wooden dam collapsed in 1906 and a concrete dam was built. Then in 1924 the dam collapsed again and for the next ten years the community struggled with how to raise funds for a new dam and another *Old Mill Pond*.



A GALA EVENT

In 1934 residents arranged a *Gala Fall Festival* to raise funds for a new dam. The festival featured a picnic, dance and parade. Fortynents bought a ticket to the dance and twenty-five cents got a luncheon plate at the picnic.



"When the dam broke out ten years ago [1924] We have ever since tried to figure out ways and means how we could possibly reestablish this dam so as to get the pond back. We have now arranged a Gala Fall Festival with PICNIC and DANCE. There will also be a BIG PARADE at 1 o'clock. Don't miss it!"
Excerpt: An Invitation from *The People of the Little Village of Centerville 1934*



THE MILL POND RETURNS

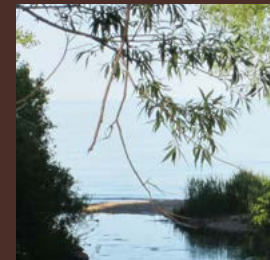
After two successful money making picnics, a new dam was erected in 1935, impounding 12 acres of the creek, bringing the mill pond back. Again, Centerville and Hika citizens enjoyed the benefits of their *Old Mill Pond*.

In 1942 a heavy rainfall washed away the soil at both ends of the dam and caused the Mill to collapse and wash away into Lake Michigan making ongoing repairs necessary.

THE CREEK RETURNS HOME

NO LONGER NEEDED FOR LOCAL INDUSTRY, THE DAM WAS REMOVED IN 1996

The creek was free to meander once more. But there was much work to be done, restore the natural floodplain, re-establish native vegetation and enhance recreational opportunities for the community.



REMOVING THE DAM BUILDING COMMUNITY

After the drawdown of the mill pond, decades of sediment and a stream bed full of invasive plants remained

In 2009, with a focus on water quality, restoration and recreation, the community gathers many groups who work together, restoring the creek to a healthy, functioning, ecosystem once more. **Water shapes the people and the land once more.**

Interpretive Kiosks

Kiosk #2 Ridge Swale



You are in a Migratory Corridor

"That such delicate creatures undertake these epic journeys defies belief."
— JAMES WELLS, 1840



LAKE MICHIGAN FLYWAY

SOUTHERN MANITOWOC COUNTY COASTAL ECOLOGICAL LANDSCAPE

A PLACE TO REST, FEED AND NEST

Millions of migratory birds follow this shoreline each spring and fall.

The Lake Michigan shoreline is a critical migratory corridor used by raptors, waterfowl, loons, grebes, shorebirds and songbirds.

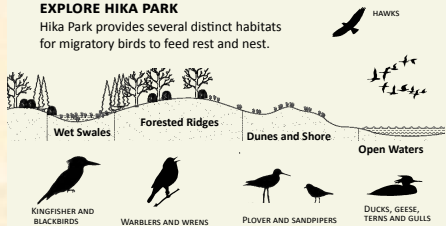
Using the shoreline as a landmark and guide, birds rest and forage along their epic journey.

This area is also an important wintering grounds for waterfowl and other water birds.

Hika Park is a key location along the Lake Michigan Flyway, providing critical habitat during migration.

EXPLORE HIKA PARK

Hika Park provides several distinct habitats for migratory birds to feed rest and nest.



ADDITIONAL SUPPORT PROVIDED BY

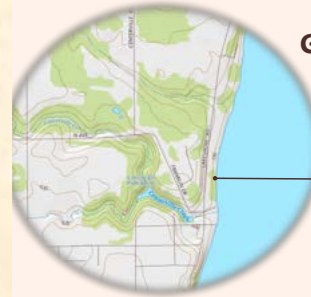


Preserving an Ancient Topography

Hika Park is home to rare coastal landscapes



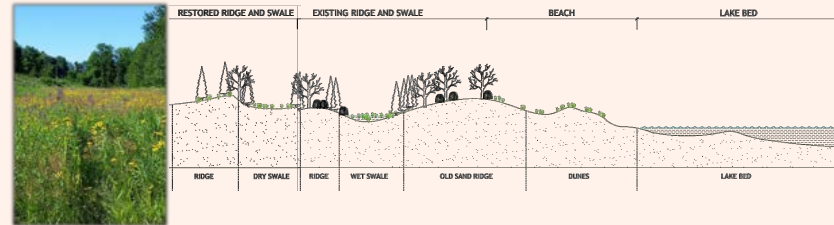
Thousands of years ago, the slow lowering of Ancient Glacial Lake Nipissing formed a series of sandy ridges and low swales parallel to the shore all along the western edge of what we now call Lake Michigan. Only remnants of this formation still exist.



GREAT LAKES RIDGE SWALE COMPLEX

DISCOVER ONE OF THE FEW REMAINING EXAMPLES OF GREAT LAKES COASTAL FORESTS AND WETLANDS

This narrow strip of land harbors a mosaic of microhabitats. Each forested ridge was once an active sand dune along the shoreline and each swale was once part of Lake Michigan. This unique landscape now supports a diversity of plants and provides critical habitat for wildlife.



LINKING PEOPLE WITH NATURE |

Walk the bridge across Centerville Creek. Explore the best in active and passive recreational opportunities.

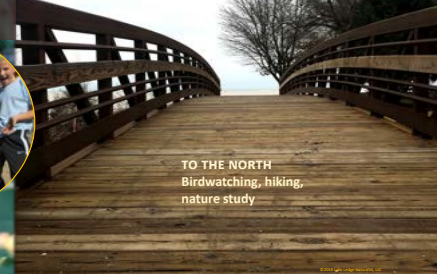
HIKA RIDGE AND SWALE HABITAT

Recently preserved and restored through a series of community outreach events to reclaim the natural landscape.



TO THE SOUTH

Fishing, boating and access to the Lake Michigan Water Trail



TO THE NORTH
Birdwatching, hiking, nature study

Lakeshore Natural Resource Partnership - Outreach

Newsletter: The Source

Websites: www.LNRP.org and www.hika-bay.org

Regional Outreach: Lake Michigan Stakeholders



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Email: jim@LNRP.org