

STRAIGHT LINES

Winter 2022



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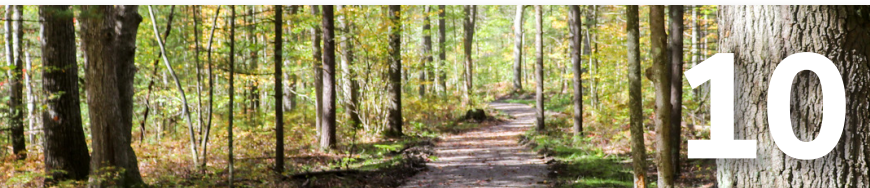
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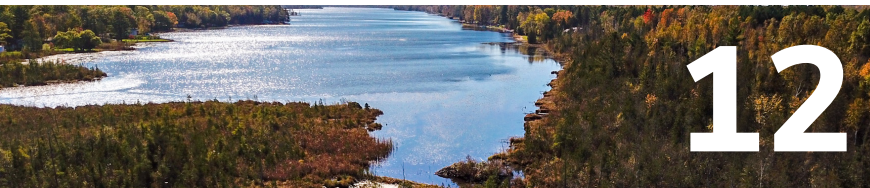
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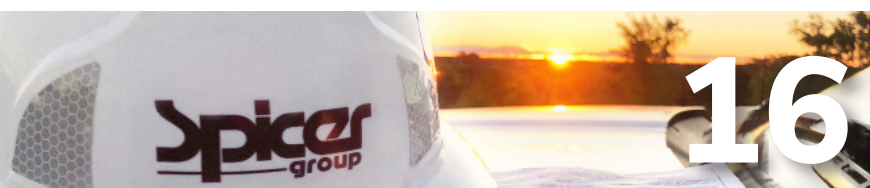
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New Hires



Steve Roznowski, P.E., Named as New Principal

After interning with Spicer Group for three years, Steve was hired on full-time as a Design Engineer in the Water Resources Service Group in our Saginaw office in August of 2010. From there, he was promoted to Project Engineer and then Project Manager. When our office in southeast Michigan opened, Steve made the move south to assist our clients there. He became an Associate at Spicer Group in 2013, a Senior Associate in 2016, and a Shareholder in the company in 2018. He continues to serve our clients from our Dundee office. He is a licensed Professional Engineer in both Michigan and Ohio and holds a Bachelor of Science in Civil Engineering from Michigan Technological University and a Master of Science in Civil Engineering from Colorado State University.



Phil Westmoreland, P.E., Named as New Principal

Prior to joining Spicer Group in 2012, Phil worked for various engineering firms in southeast Michigan. He was hired as a Project Manager and Senior Associate at Spicer Group and became a Shareholder in 2014. He continues to serve our clients in southeast Michigan from our Dundee office location. Phil earned his Bachelor of Science degree in Civil Engineering in 1995 from Michigan Technological University and is a licensed Professional Engineer in Michigan.

BEECHTREE DRAIN

Connecting the Pieces

GRAND HAVEN TOWNSHIP — The Beechtree Drain is located in the northwestern corner of Ottawa County and services a watershed of 590 acres. Originally established in 1884, it grew into a mixture of open drain and enclosed storm sewer as the agriculture land around it was developed into residential, industrial, and commercial land uses.

Located just over a mile from Lake Michigan, the Beechtree Drain begins just south of the Grand Haven Township Hall and conveys water to the Van Doorne Drain, which outlets to the Grand River. In recent years, the area has had high groundwater levels. After storm events, water would pond in low areas within the watershed because of limited infiltration caused by high groundwater. When combined with significant runoff from intense storms, flooding occurred throughout the watershed damaging homes and businesses.

These ponding areas did not have a connection to the drain and could not be conveyed downstream in a timely manner. This resulted in standing water in backyards, along roadways, and on the nearby golf course. Stagnant water sometimes sat for weeks resulting in unsightly algae growth and mosquito breeding areas.

One significant change within the watershed in recent years occurred on a golf course located on the western side of the drain. Originally opened in

1965, the Grand Haven Golf Club closed in 2018, was purchased by the American Dunes Golf Club, and then underwent a major redesign before re-opening in the spring of 2021. This redesign offered the opportunity to add infrastructure to connect golf course ponds to the storm sewer system.

Also, within the Beechtree Drain watershed, three smaller subdivision storm sewer drains were constructed over the years – the Lincoln West Subdivision Drain, the Golfview Subdivision Drain, and the Sanctuary Subdivision Drain. Once constructed, these drains were transferred to the Ottawa County Water Resources Commissioner (OCWRC) to maintain, but infrastructure was not put into place at the time of their development to connect the subdivision drains to the watershed's overall storm water system.

In August of 2019, the OCWRC received a petition from Grand Haven Township to consolidate the drains and alleviate the localized flooding issues. The OCWRC hired Spicer Group to assist with the inspection of the drain, developing a solution, and designing the improvements.

With the history of localized flooding and understanding that no construction work would take place prior to spring rains, the OCWRC and Spicer Group mobilized four temporary diesel pumps to manage excess water throughout the watershed in early 2020. Excess water was pumped slowly downstream to decrease the threat to local homes and businesses and provide additional storm water storage volume within the watershed.



A manhole structure being installed west of Retreat Drive for storm sewer infrastructure that connects detention ponds to the Beechtree Drain.



Water level control structures were installed as a part of the Beechtree Drain Improvement Project to allow the OCWRC to efficiently control storm water storage and flow along the drain.

On May 17 and 18 of 2020, Grand Haven Charter Township, like many areas of Michigan, was hit with a 50-to-100-year storm resulting in widespread flooding. The temporary pumps were instrumental in managing the excess storm water that was received and mitigating any flooding and damage. A state of emergency was declared in Ottawa County and with flooding threats not only known, but proven, the OCWRC and Spicer Group expanded the design of the Beechtree Drain improvement project to improve the entire Beechtree Drain, not just the specific area called out within the petition.

“Without expanding this project to include larger improvements to the watershed, Grand Haven Township residents would continue to have flooding issues,” Joe Bush, the Ottawa County Water Resources Commissioner, said. “By working with the American Dunes Golf Club and other landowners, we were able to improve the storage volume, and by expanding the project design we can now control the water level in local ponds.”

The project was expanded into a multi-faceted approach to provide a solution that would alleviate flooding, improve water quality, and be cost-effective for landowners within the drainage district.

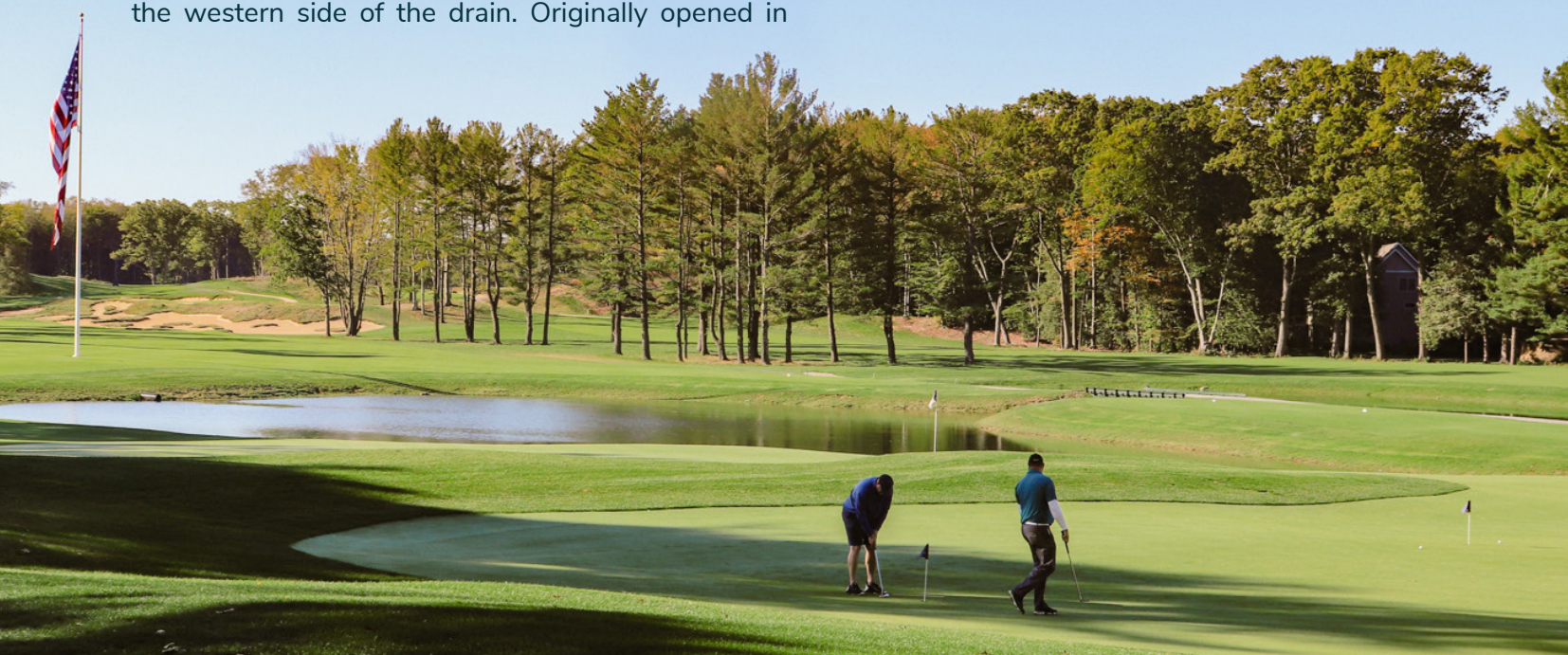
The solution included consolidating the three subdivision storm water systems into the Beechtree Drain and connecting them with infrastructure to the drainage system to provide a better outlet for the storm water runoff. It also included open channel drain maintenance that occurred throughout the middle and northern portions of the drain, and storm water storage was increased within the watershed by utilizing ponds on the newly renovated American Dunes Golf Club.

Water level control structures were installed to allow the OCWRC to control the amount of water stored within the watershed and the amount that is released directly to the drain. This infrastructure also allows the golf course to utilize the stored storm water for irrigation purposes.

“Facilitating infiltration is one of the best ways to manage storm water,” Paul Forton, P.E., the Spicer Group Project Manager said. “Infiltration allows for the water to be treated as it moves through the soil, it reduces flooding, and recharges the local aquifer helping to create healthy wetlands and generate baseflow for local streams and rivers. With the amount of impervious infrastructure being constructed every day, simply conveying excess storm water is not always the solution.”

Substantial completion of all the work for this improvement project was finished by the fall of 2021. Spicer Group was responsible for the inspection, design, survey, easement acquisition, bidding assistance, and construction administration and inspection on this project.

“Spicer Group put together a team that worked very well with our partners, residents and my team at the Ottawa County Water Resources Commission. As Commissioner, I am very satisfied with the final product of this project,” Bush said. “The residents have been very happy as flooding and water table issues have decreased and detention and retention in the area has increased. Property owners have some comfort knowing we are here to help.”





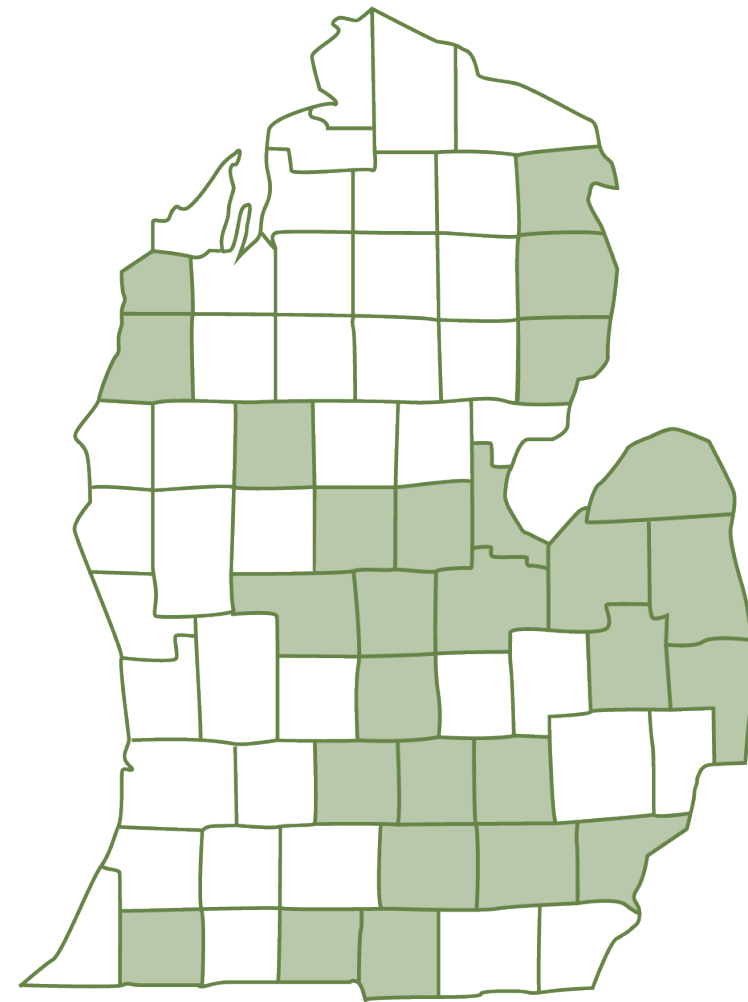
RECREATION GRANT FUNDING

Spicer Group Assists with Acquiring Nearly \$3 million in Recreation Grant Funding

In 2021, Spicer Group assisted multiple communities across Michigan with successfully writing 12 different recreation grant applications totaling \$2,995,200. The grants were funded through three different Michigan Department of Natural Resources (MDNR) grant programs: the Michigan Natural Resources Trust Fund (MNRTF), the Land and Water Conservation Fund (LWCF), and the Recreation Passport Grant program. Since 2011, Spicer has written over 110 successful MDNR grant applications totaling \$31,454,590. The following communities have received funding notices from the state, have begun working on designs for their projects, and hope to begin construction in late 2022 or early 2023.

Great Lakes Bay Regional Trail – Tittabawassee Township
Tittabawassee Township – MNRTF – \$71,300
 This grant will be used for the acquisition of one acre of land along Midland Road in Tittabawassee Township. The land will be used to expand an existing multi-use path and will provide a key connection for it to transition from a route along the Tittabawassee River to the road right-of-way and eventually to Hayes Park. This path is part of the larger multi-use Great Lakes Bay Regional Trail (GLBRT) and the state-wide Iron Belle Trail. It will extend the existing trail network which connects trail users to Freeland and Saginaw and is planned to connect to Midland.

Great Lakes Bay Regional Trail – Poseyville Road
Midland Township – MNRTF – \$300,000
 This funding will be utilized to extend the Midland Township Trail one mile south towards Gordonville Road. The existing trail covers 32.5 miles and will be extended one mile from where the trail currently



ends at Bullock Creek Elementary School. The project will also include a bridge/boardwalk to cross the Bullock Creek, and a bench and interpretive signage will be installed. This project is part of the Great Lakes Bay Regional Trail and the state-wide Iron Belle Trail.

Kawkawlin River Access Improvements
Monitor Township – MNRTF – \$273,000
 Monitor Township plans to improve river access at Herbert Steih Memorial Park, located off Monitor Road. The park is an access point along the Kawkawlin River-Saginaw Bay Blueways Trail. The funds from this grant will be utilized to provide improved launching for canoes/kayaks and stabilize areas along the riverbank. There will be a new pathway, pavilions, picnic tables, benches, and fishing access. These accommodations will offer ADA accessibility, and the canoe/kayak launch ramp will be repaved, regraded, and extended to reach the waterline since the current ramp stops before that point.

2011-21 GRANT

FUNDING SUCCESS:

\$31,454,590

TOTAL IN 2021
\$2,995,200

Smith Park
City of Essexville – LWCF – \$148,500
 The Smith Park Fishing Access and Walkway Improvements project is in Bay County near Woodside Avenue off Burns Street. The 1.5-acre park is located along the Saginaw River and offers shore fishing access including a floating fishing platform, a walkway, and benches. The new improvements will all be universally accessible and will consist of new benches, trash cans, and renovations to the floating dock and existing path. Seawall and shoreline stabilization will also be included with this project.

Williams Township Park Development
Williams Township – LWCF – \$195,000
 Williams Township Park is a popular recreational area located off Midland Road. The proposed renovations to the 22.35-acre park consist of a new entrance drive, signage, and ADA parking. There will also be upgrades to the tennis, pickleball, and basketball courts which will allow for more fitness opportunities within the community. Several new universally accessible benches will be installed throughout the park, and a rain garden with native plants will be installed.

Carrollton Iron Belle Trail Trailhead

Carrollton Township – MNRTF – \$134,500

The Iron Belle Trailhead in Carrollton Township is located off Mapleridge Road. These improvements will consist of a paved parking lot with ADA parking spots, paved pathways, a bike repair station, and bike racks which will be located on the newly paved area. There will also be four new benches, interpretive signage, and an entrance sign. A porta-john shelter and fencing will be installed, and a rain garden will help collect and filter storm water runoff.

Aldrich Park Pickleball Courts

Village of Capac – Recreation Passport – \$45,000

This project will expand recreational opportunities in Aldrich Park off North Main Street in Capac and improve universal accessibility by adding pickleball courts to the park. Other improvements include seating, trash bin, paved area and a rain garden.

Ackerman Park

Village of Elkton – Recreation Passport – \$150,000

Ackerman Memorial Park covers 30 acres of land off North Main Street and has various amenities including ball diamonds, soccer fields, tennis courts, basketball courts, picnic areas with pavilions, horseshoe pits, playground areas and historical buildings. The proposed project includes the development of a new paved pathway that will be ADA accessible and stretch just over half a mile. The path will begin at the entrance of the park and will lead visitors around the entire park. It will also feature fitness stations along the path which provides additional exercise opportunities. The project will include universally accessible parking, signage, and benches.

Clubview Park

Ypsilanti – LWCF – \$147,500

This project is located off South Huron River Drive at Clubview Park and will include the removal and replacement of the existing tennis courts with the addition of pickleball courts. The park was established 43 years ago and covers nine acres. The current tennis courts are over 20 years old and in poor condition. The crushed limestone path throughout the park will also have improvements made to it so that it meets the universal accessibility design criteria.

INGHAM COUNTY

Lake Lansing Park North Boardwalk/Trail Phase I

Haslett – MNRTF – \$300,000

Lake Lansing Park North covers more than 530 acres of wooded and recreational land in Haslett, MI. The project will replace 680 feet of deteriorated boardwalk which sits along a nearly two-mile stretch of trail. The trail will also be receiving renovations to add crushed stone to the pathway in order to make it more accessible. The project will include the installation of benches, interpretive signs, a new park entry gate, and entrance sign.

Burchfield Park-McNamara Cabins/Trail Delhi Township – LWCF – \$500,000

McNamara Landing in Burchfield Park is a popular location off Grovenburg Road that many people go to for launching canoes, kayaks, and paddleboats, along with enjoying fishing and other recreational activities in and along the Grand River. Ingham County will be upgrading the existing pathway near the landing which loops around a 5-acre pond at the park. This same pathway will also be connecting to two new canoe/kayak launches on the pond. The project will also include installation of five solar-powered cabins with accessible picnic tables and fire pits for each. There will be new ADA accessible parking spaces for each of the new cabins, and the existing well and pump house will be replaced to allow for an outdoor shower system.

Hawk Island Boardwalk Replacement Phase I & II

City of Lansing – MNRTF – \$300,000

City of Lansing – LWCF – \$430,400

Phase I and II of the Hawk Island boardwalk replacement project will include replacement of the deteriorated boardwalk with accessible floating boardwalk and an accessible sloped approach leading to the boardwalk. Hawk Island Park is 100 acres and located in Lansing off East Cavanaugh Road. The current boardwalk is roughly 25 years old and in poor condition. The new design focuses on the park’s goal of becoming more inclusive for all visitors. The railings along the new boardwalk will have multiple sections that only reach 34-inch height for accessible viewing and fishing, and interpretive signs will be added with information about the park and its natural features.

THESE GRANTS HAVE ASSISTED IN FUNDING:

- MULTI-USE PATHS
- TENNIS/PICKLEBALL COURTS
- PLAYGROUNDS
- LAND ACQUISITIONS
- BOAT LAUNCHES
- WATER FRONT ACCESS
- WILDLIFE VIEWING
- CANOE/KAYAK LAUNCHES
- FISHING DOCKS
- CAMPING CABINS
- TRAIL HEADS
- BASKETBALL COURTS



WEST RIVER ROAD PARK

Jerome Township has added a new park to its recreation opportunities.



to help fund the project. Spicer Group did several walkthroughs of the premise and worked with the Township to come up with a preliminary design. There was already a general idea in place of amenities that the Township wanted to implement, but Spicer Group worked with officials to finalize the design plans.

This included designing an eight-foot-wide nonmotorized trail, a tennis and pickleball court, and site furnishings including benches, interpretive signage, and trash receptacles. Pickleball is a popular hobby for many of the locals in the Sanford area, and the community had expressed a need for more pickleball courts to be built nearby. Spicer Group also provided survey, grant administration, permitting, bidding assistance, and construction oversight for the project.

The new 4,000-foot-long crushed aggregate trail loops around wetlands and wooded areas and connects to the Sanford Senior Activity and Dining Center. It also features seven boardwalk crossings through low areas. The entire trail meets the accessibility requirements of the Americans with Disabilities Act.

The neighboring Sanford Senior Services of Midland County Activity and Dining Center expressed enthusiasm at the idea of a park being so close to their facility.

“The members of the senior center are excited to be able to utilize the connecting pathway and park features,” said Joe Wright, Spicer Group project manager for the West River Road Park improvements. “The Center often hosts outdoor activities, which can now be held at the park such as Zumba, walking groups, and yoga.”

Challenges in this project arose as the COVID-19 pandemic heavily impacted the price of lumber and site furnishings, as well as the project schedule. The project was completed in late fall of 2021.

Sova Excavating and Trucking, Inc. was the general contractor that worked along with Spicer Group to complete the construction for this project. As construction for this project progressed, there was much anticipation from the community members of Jerome Township.

“Everyone was very eager to utilize the new park and its features.” Wright said. “There were even people lined up to be the first to use the tennis and pickleball court.”

JEROME TOWNSHIP RECENTLY WRAPPED UP AN EXCITING PROJECT THAT ADDED A NEW PARK TO THE AREA AND PROVIDES EASY ACCESS TO SENIORS FROM THE SANFORD SENIOR SERVICES CENTER.

The new park, named West River Road Park, is located about a mile north of the US-10 interchange and includes 40 acres of woods. The land was gifted to the Township by the Meridian School District. The new park site used to be the location of the original Jerome Township Hall built in 1910, which has since been moved to museum grounds in Sanford.

While Jerome Township has many recreational locations including Pine Haven Recreational Area, AuSable State Forest, and Sanford Lake Park, the Township’s Parks and Recreation Master Plan identified the goal of continuing to create an attractive community that meets the physical, social, and economic needs of its residents and businesses in an environmentally sensitive manner.

The 40 acres gifted to the Township was a great place to start achieving this goal since the Township had discussed its development for many years. The park’s close proximity to the Sanford Senior Activity and Dining Center also made it a very popular option to develop a park.

In December of 2018, Jerome Township received a Michigan Department of Natural Resources Land Water Conservation Fund grant for \$146,600



CEDAR LAKE

Lake Level Control Structure

Residents and users of Cedar Lake can rest easy due to recently completed improvements to a key piece of infrastructure that helps maintain the lake.

Cedar Lake is located in both Alcona and Iosco Counties near Oscoda, Michigan. The 5.9-mile-long lake is around 1,075 acres in size and is relatively shallow averaging less than five feet deep.

“Cedar Lake is unique because it has a very small drainage area and doesn’t receive any inflow from artesian or free-flowing springs or rivers,” Spicer Group project manager Warren Miller, P.E. said. “For the most part, the lake relies on direct precipitation from rain, snow and minor groundwater flows from the watershed to recharge its level.”

In 1954, as part of a circuit court order to maintain a legal lake level, a control structure was built on the north end of the lake where Cedar Creek outflows. Improvements were made to the control structure in 1979 and additional repairs were made in 2012. Although some repairs were made, the control structure still had other structural issues, and was given a failed rating by the Michigan Department of Natural Resources for 15 years straight.

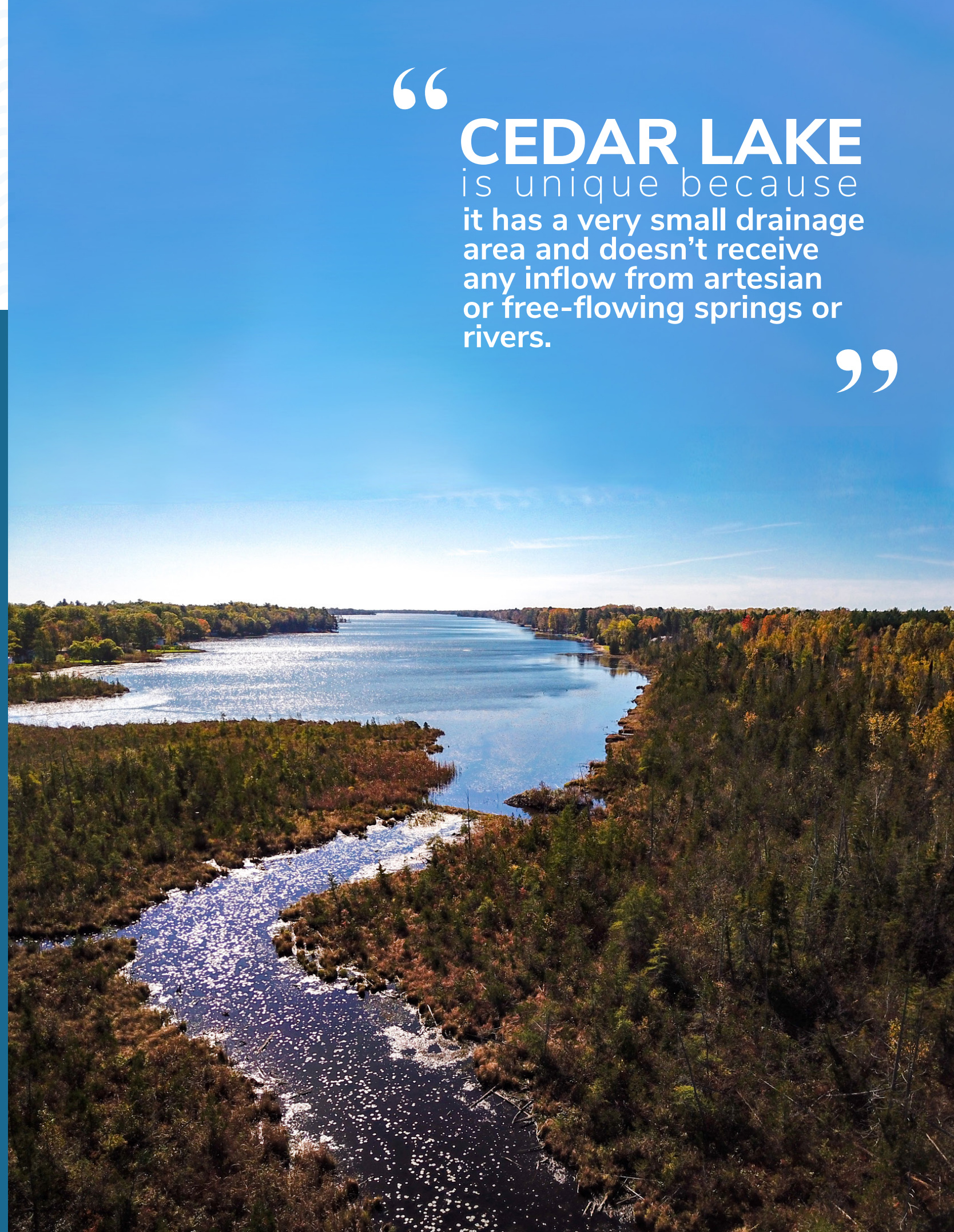
Cedar Lake outlets to Cedar Creek and flows downstream to Lake Huron. It becomes a dedicated cold water trout stream along the way. The original control structure was in poor condition and would become obstructed frequently by debris, which would result in higher water levels and flooding in various areas surrounding the lake.

“Because of the unique topography of the lake, many of the 800 landowners were subject to flooded properties if the lake elevation rose above its normal legal lake level more than 3 inches,” Miller said. “Flooding would cause structure damage and threatened septic systems around the lake. This fact, and the deteriorating ability of the original control structure to safely convey water out of the lake during times of heavy precipitation prompted the lake owners and the Alcona and Iosco County Drain Commissioners to pursue a reliable fix.”

Spicer Group was contracted to assist with designing a new control structure, amending the existing Part 307 Legal Lake Level, and establishing a special assessment district to fund these efforts. Improvements included removal of the old structure and constructing an entirely new structure that consisted of installing a sheetpile weir and a 7-foot by 3-foot box culvert.

The team had to come up with a crafty solution to construct a structure that would allow enough water to remain in the lake for users to enjoy it for fishing and boating, but also pass enough water to eliminate the threat of flooding during periods of heavy precipitation. This was done by designing and constructing a high-flow weir and a low-flow weir.

“CEDAR LAKE is unique because it has a very small drainage area and doesn’t receive any inflow from artesian or free-flowing springs or rivers.”



THE PURPOSE OF THE HIGH-FLOW WEIR IS TO QUICKLY CONVEY WATER THROUGH THE STRUCTURE AND ALLOW FOR MUCH GREATER CAPACITY AS THE WATER ELEVATION OF THE LAKE RISES.

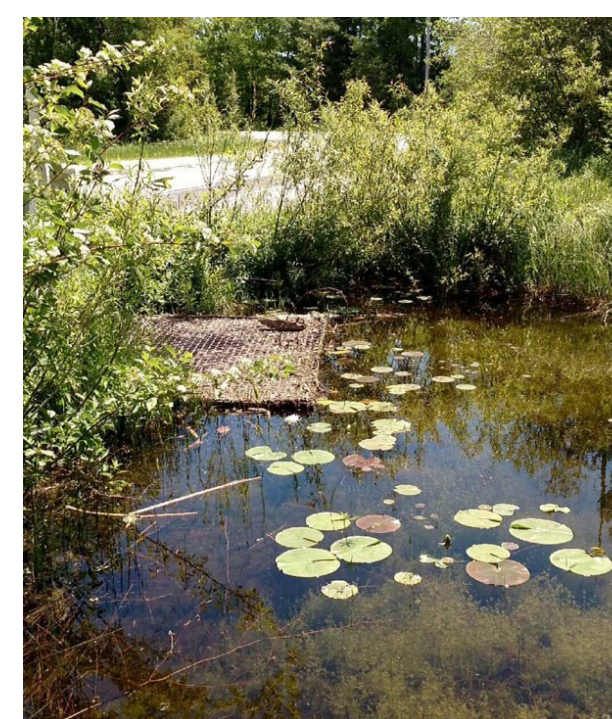


“The new lake level control structure was sized to convey the 100-year flood event, per the Department of Environment, Great Lakes and Energy (EGLE) Michigan Dam Safety unit,” Miller said. “The existing dual corrugated metal pipe structure was replaced by a pre-cast seven-foot span by three-foot rise concrete box culvert. The pre-cast structure, comprised of eight sections, allowed for expedited installation to minimize the closure to Cedar Lake Road, which is the primary method to round the lake from the north end.”

Upstream of the concrete structure, approximately 80 feet of steel sheet pile (SSP) was installed to span the upstream channel. The SSP served two purposes, the first being to aid in water control during installation of the box culvert, and the second being the permanent weir which would be set at two elevations to convey low flows and high flows.

The center portion of the SSP was constructed to be the low-flow weir which allows for normal flows to be conveyed through the structure and also maintain the Part 307 Normal Lake Level of 608.2 referenced to the North American Vertical Datum of 1988 (NAVD88). The low-flow weir is seven feet wide and is 1.8 inches lower than the remaining 73 feet.

Using hydraulic modeling, many iterations were performed to determine the appropriate elevations to set the high-flow weir. This was a delicate process as if the lake level exceeded the Part 307 level, more than 3” flooding was observed in various areas along the lake. Utilizing spot elevation data collected by the project’s survey crew, the team identified the low areas surrounding the lake and used that as the basis to set the high-flow weir elevation of 608.3 NAVD88. The purpose of the high-flow weir is to quickly convey water through the structure and allow for much greater capacity as the water elevation of the lake rises.



The original structure.

A critical design factor, in addition to regulating the Part 307 normal achieved lake level and reducing flooding, was by utilizing redundant inlets. This also provided additional capacity if any of the inlets became obstructed during a storm event. The new structure was designed to pass much more debris through the structure, and this is accomplished by the low-flow inlet, which is at the center of the structure. The low-flow weir’s two-foot by seven foot opening allows vegetative material and small woody debris to be flushed through the box culvert.

An area downstream of the structure was cleared, and a maintenance lane was established to allow for more routine maintenance and removal of deposited material. This process is much more efficient, unlike the previous structure where even the smallest material would obstruct the grating and would greatly reduce the capacity of the structure.

In addition to the main opening, four pre-cast concrete catch basins were installed adjacent to the structure to provide additional redundant inlet capacity. Lastly, immediately to the north of the main opening two, 2.5-foot by 3.75-foot grated openings were made part of the pre-cast end section of the box culvert. Again, this provides redundant inlet capacity in high flow scenarios.

The Cedar Lake project was originally scheduled to be completed during the winter but due to environmental restrictions the work had to be completed in summer. Thankfully the year of 2021 was rather dry, and the lake was naturally low which helped facilitate construction of the structure. If that was not the case, additional water control and temporary sheeting would have been needed to complete the project.

“The project was a success,” Miller said. “It took a lot of coordination with landowners, the contractors, and the drain commissioners, and residents can now be assured that their lake has a significant reduced risk of being affected by the old control structure, and their properties have reduced risk of flooding.”

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SPICER GROUP NEW HIRES

MATTHEW BORDEN: Matthew was recently hired as a Survey Technician in the Survey Service Group at our St. Johns office. He earned his bachelor's degree in Biblical Studies at Davis College, in New York.

JONATHAN FEISE: Jonathan was recently hired as a Crew Chief in the Survey Service Group at our St. Johns office. He graduated from Ferris State University with a bachelor's degree in Science-Surveying Engineering as well as receiving his associates in Applied Science-Surveying Technology. He also earned an associate degree in Business Administration from Lansing Community College and joins Spicer Group with more than nine years of surveying experience.

NILS LINDWALL, P.E.: Nils recently joined our Municipal Service Group at our Traverse City office as a Senior Project Manager and Associate. He earned his bachelor's degree in Civil Engineering from Michigan Technological University and his master's degree in Geotechnical Engineering from the University of Washington. He joins Spicer Group with more than 23 years of experience and is a licensed professional engineer.

RYAN ROBINETTE: Ryan was recently hired as a Construction Engineer in the Construction Service Group at our Saginaw office. He earned his bachelor's degree in Civil Engineering from Lawrence Technological University.