



STRAIGHT

LINES

SUMMER 2018

**Spicer**  
group

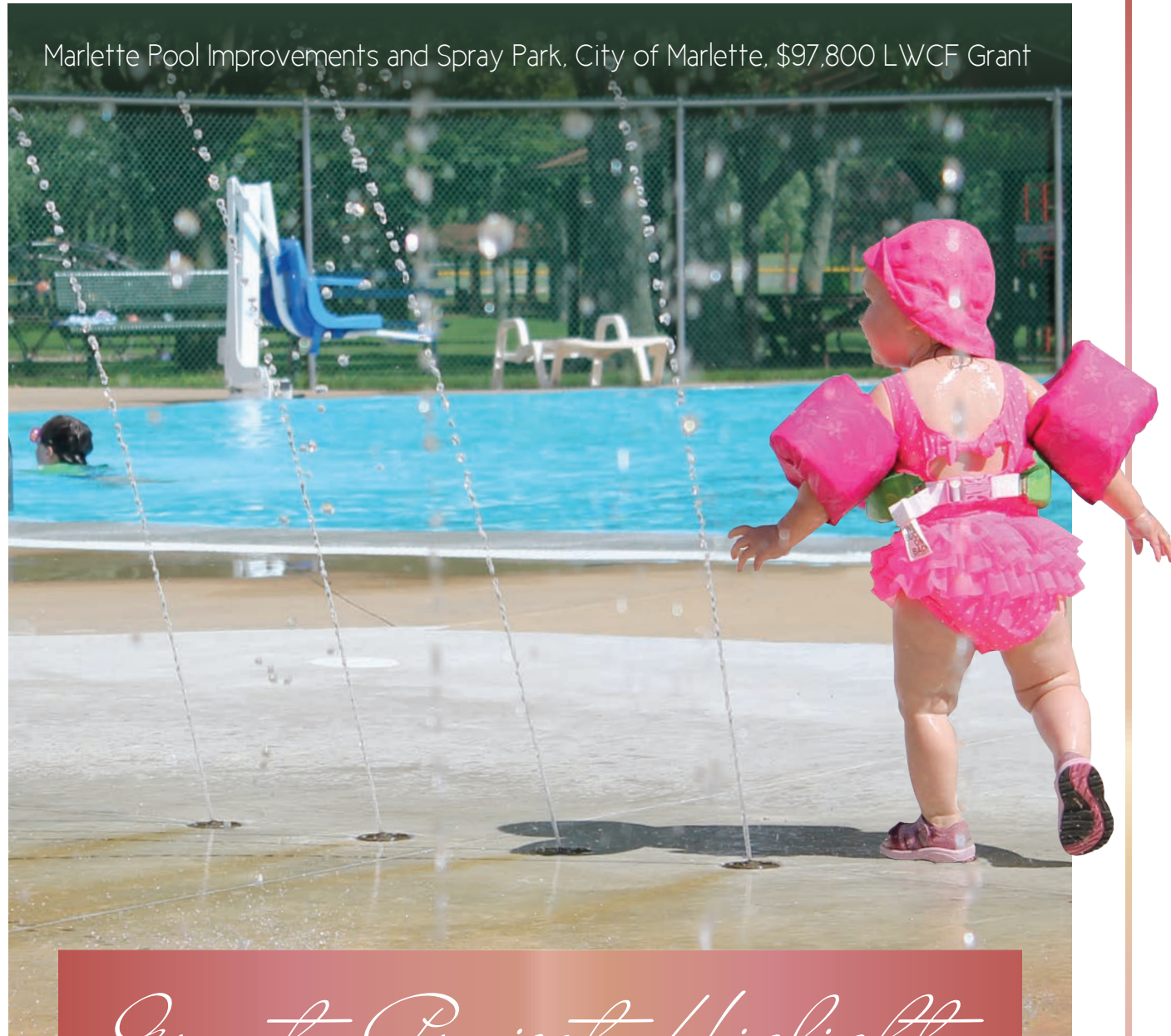
# SUMMER 2018

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FRONT COVER: JUNCTION ROAD, FRANKEMUTH  
INSIDE COVER: WILLIAMS TWP PARK, BAY COUNTY

Marlette Pool Improvements and Spray Park, City of Marlette, \$97,800 LWCF Grant



## Grant Project Highlights

Out of the 16 recreation grant applications that we wrote and assisted with in 2017 on behalf of our clients seeking funds for recreation projects, 12 of them were funded. A total of \$2,554,800 was secured for our clients and will support efforts to enhance recreation resources in their communities. These funds are being used for a variety of enhancements including land acquisition, park improvements, and multi-use path improvements. View the list to the right to see what projects were funded.

Over the last 7 years, we have helped our clients acquire a total of \$15,572,488 in funding. In this quarter of Straight Lines, we revisited some of the projects we've been a part of to remind our readers of the possibilities that recreation grant funding can provide. Contact Tanya Moore if you are interested in learning more about how grant funding might help your community.

Williams Township Playground, Bay County, \$100,000 MNRTF Grant



## Grants Awarded in Dec. 2017

- \$372,000 Thomas Township Nature Center Acquisition, Thomas Township, MI - MNRTF Grant
- \$108,700 Alcona Township Park Development, Alcona Township, MI - MNRTF Grant
- \$403,800 Randall Lake Land Acquisition, Branch County, MI - MNRTF Grant
- \$244,800 Lake Lansing North Park Improvements, Ingham County, MI - MNRTF Grant
- \$140,000 Bad Axe Trail Improvements, Bad Axe, MI - MNRTF
- \$150,000 West Park Improvements, Carson City, MI - LWCF
- \$209,200 GLBRT Trailhead Development, Saginaw County, MI - MNRTF Grant
- \$222,000 Platte River Acquisition, Homstead Township, MI - MNRTF Grant
- \$71,100 Magoon Creek Park Improvements, Filer Township, MI - MNRTF Grant
- \$220,000 Penfold Park Development, Village of Elberta, MI - MNRTF Grant
- \$98,400 Jaycee Park Access, City of Grand Ledge, MI - MNRTF Grant
- \$47,800 Valley Farms Park Path, Dewitt Township, MI - MNRTF Grant



Great Lakes Bay Regional Trail, Frankenlust Township, (Bay County) and Saginaw County \$964,400 MNRTF Grants



Cass River Water Trail, Bridgeport Charter Twp., City of Vassar, \$213,700 MNRTF Grant



Andiamo Trail, Dearborn, \$280,000 MNRTF Grant & \$301,000 MDOT TE Grant



DeWitt Water Trail, City of DeWitt and DeWitt Township, \$142,400 MNRTF Grant



Jonesville Rail Trail, City of Jonesville, \$296,000 MNTRF Development Grant



Memorial Park Improvements, City of Frankenmuth, \$225,000 MNRTF Development Grant



Saginaw Valley Rail Trail, Strobel Road, Saginaw County, \$251,000 MNTRF Grant



Leppien Park Improvements, City of St. Louis, \$161,000 MNRTF Grant



Sunrise Side Path Extension, Alabaster Township, \$718,160 MDOT TAP Grant



Camp Dearborn Improvements, City of Dearborn, \$268,900 MNRTF Grant

Habina Park Improvements, Merritt Township, \$95,000 LWCF Grant





Cole Park Improvements, Village of Chesaning, \$268,000 MNRTF Grant

Lincoln Township Park, \$144,700 MNRTF Grant

Bridgeport Cass River Trailhead, Bridgeport Charter Township, \$275,800 MNRTF Development Grant



# NEW HIRES

**Lucas Beard:** Lucas was recently hired into the Survey Group in our St. Johns Office as a Survey Technician. He comes to Spicer with over five years of experience.

**Brian Birk:** Brian was recently hired into the Survey Group at our Atlanta, GA office as a Survey Technician. He comes to Spicer with more than 20 years of experience at Comcast Cable Communications, Inc.

**Robert Bowman:** Robert was recently hired as a Geospatial Technician in the Applied Technologies Group in our Lansing Office. He interned for more than a year at Spicer and earned his bachelor's degree in Geographical Information Sciences from Central Michigan University.

**Matthew Finley:** After interning for one year at Spicer, Matthew was recently hired as a Design Engineer in the Structural Group in our Saginaw Office. He earned his bachelor's degree from Lawrence Technological University.

**Hannah Garner:** After interning for a year at Spicer, Hannah was hired as a Design Engineer in the Applied Technologies Group in our Lansing Office. She earned her bachelor's degree in Environmental Engineering from Michigan Technological University.

**Imants Gerrits:** Imants was recently hired as a Construction Services Technician in the Construction Services Group in our Saginaw Office. He earned his bachelor's degree in Environmental Conservation from Northern Michigan University.

**Jared Johnson:** After interning at Spicer for two years, Jared was recently hired as a Crew Chief in the Survey Group in our Manistee Office. He earned his bachelor's degree in Survey from Ferris State University.

**Kristopher Koko:** Previously an intern at Spicer since 2014, Kristopher was recently hired as a Design Engineer in the Water Resources Group in our Dundee Office. He earned his bachelor's degree in Civil Engineering from Lawrence Technological University.

**Marcus McNamara:** Marcus was recently hired as a Project Manager in the Municipal Group in our Dundee Office. He earned his bachelor's degree in Engineering from Michigan State University, and his master's degree in Civil Engineering from Wayne State University.

**Lucas Richardson:** After interning at Spicer for two years, Lucas was recently hired as a Design Engineer in the Municipal Group in our Manistee Office. He earned his bachelor's degree in Civil Engineering from Trine University.

**Abram Ritz:** Abram was recently hired into the Construction Services Group in our Saginaw Office as a Construction Services Technician. He earned his associate's degree in Applied Science from Ferris State University.

**Nathan Sleight:** Nathan was recently hired into the Survey Group in our Saginaw Office as a Survey Technician. He earned his bachelor's degree in Fisheries and Wildlife Management from Lake Superior State University and his master's degree in Geography from the University of Oklahoma.

**Daniel Smith:** Previously an intern for Spicer since 2014, Daniel was recently hired into the Water Resources Group in our St. Johns Office as a Design Engineer. He earned his bachelor's degree in Civil Engineering from Michigan State University.

**Sean Stacey:** Sean was recently hired as a Survey Crew Chief in the Survey Group in our St. Johns Office. He earned his associate's degree in Civil Engineering from ITT Technical Institute.

**Emily Upton:** After interning for Spicer for two years, Emily was recently hired as an Administrative Assistant in our St. Johns Office. She earned her associate's degree in Business Administration from Lansing Community College.

**Steven Witt:** Steven was recently hired as a Construction Services Technician in the Construction Services Group in our Saginaw Office. He comes to Spicer with over 10 years of experience.

*Saginaw's*

# WATER TREATMENT PLANT

RENOVATION

## NEARLY 90-YEAR-OLD WATER TREATMENT PLANT

### BUILDING REMAINS AN ICON OF SAGINAW

*CITY OF SAGINAW* - Since 1929, the City of Saginaw's Water Treatment Plant, located on Ezra Rust Drive, has been providing clean, reliable, and safe drinking water to customers across the region.

Originally built to pump, treat, and filter water from the Saginaw River to its customers, the water treatment plant was upgraded over the years and now has a rated capacity to treat more than 52 million gallons of water from Lake Huron per day and serves more than 172,000 customers across Saginaw, Bay and Tuscola Counties.

What has remained the same, however, is the unique monolithic tower and façade that has now become a landmark in the City of Saginaw.

"People had civic pride during that period of time and were excited about what they could do as a community," Paul Reinsch, Superintendent of the Water Treatment Plant and Field Operations, said. "There was more of a focus on beauty along with function than there is today."

Reinsch said that maintenance is key and on-going in preserving the nearly century-old building. Over the years, several small-scale projects have taken place to extend the life-cycle of the building.

In 2014, Spicer Group did an extensive structural and architectural inspection of the building after City staff had experienced water leaking into the lobby and deterioration of the masonry on the tower and turrets.

"A repair project had been done more than 20 years ago and some of the masonry was cracking and moving. We discovered that when that project was done, they used a modern grout sealer, like a modern building," Darrick Huff, P.E., project manager for Spicer Group, said. "That building was not designed to be sealed."

Because of the amount of water in the building and especially in the tower – which houses a large, open water tank – the structure was designed to breath and allow moisture to wick in and out through the joints and the masonry.

Sealing the building caused the humidity inside to get worse and masonry began cracking, Huff said. A solution was designed that included removing all of the modern grout that had been used in the joints between the masonry and replacing it with the same type of grout used in the 1920's so everything could function as it had been originally designed.

Masonry that was irreparably damaged was replaced, and vents were added to the tower to allow better air movement, Huff said.

"The masonry repairs are always an ongoing maintenance thing to have to do, like tuck pointing, but those repairs should last 15 to 20 years," he said.

Along with the masonry repair on the building's tower, the project also included refurbishing the iconic gothic-shaped windows in the tower.

All of the windows in the tower were from the original 1929 construction, and rusting had occurred at the contact points the window frames had with the masonry. The windows were removed, blasted, repaired where needed, powder coated, and new double-panes inserted, before being reinstalled.

"We wanted to maintain the beauty of the building with those windows," Reinsch said.

Spicer also assisted in designing and overseeing the repair of concrete pads that were built to hold large pumps for the water treatment plant in the 1960's. Water caused rust on metal in the pad which in turn damaged the concrete base. The pump sets were lifted off, the pads jackhammered out, and new base pads were built to properly secure the pumps. The work on refurbishing and repairing the building took nearly a year to complete.

"This kind of building is beautiful, but it takes work," Reinsch said. "It looks great and it functions just as well as it ever did. I'm very happy with the outcome of the project."



**B**uried beneath the dirt and clay along Junction Road in Saginaw County is a long length of ductile iron transmission main that supplies residents and businesses in the City and Township of Frankenmuth with drinking water.

Installed in the 1970's, this 20-inch water main runs from Reimer Road to Churchgrove Road. A smaller 12-inch line also splits off from the 20-inch and continues south down Dehmel Road. Given the 100-year life-cycle of ductile iron pipe, these should have lasted the City decades before a replacement was necessary.

"This is relatively new in terms of pipe," Steve Rutkowski, P.E., the project manager for Spicer Group, said. "When we think of old pipe, it is usually something installed in the 1930's or 1940's."

However, in 1994, a break in the pipe occurred and when investigated, the City found extremely corrosive soils had eaten away at the pipe's wall.

"Due to the corrosive soils, we experienced large blow-out holes in the pipe," Ken O'Brien, the Water Superintendent for the City of Frankenmuth, said. "There were places in the pipe where only the cement lining was left showing. The problem got progressively worse every year."

Ten more breaks in the pipe followed in the next two decades along Junction Road, with five occurring in 2016 alone.

"We knew this could lead to bigger problems for the City," O'Brien said. "We've had some situations, where we've still had adequate pressure, but it gets to the point where you're treading on thin ice."

A lack of pressure could mean contamination in the water system, and because the pipe was the only transmission main for drinking water into the City of Frankenmuth, every time it had to be shut off to fix a break, the City was

depending on their smaller water mains and their two elevated towers to keep water pressure up. If pressure was to fall below 20 PSI, a boil-water notice would have to be issued for the entire City and Township.

"As soon as this pipe broke, they were up against the clock," Rutkowski said.

Spicer Group worked with the City of Frankenmuth to design a replacement transmission water main that would run just south of the original water main's route. The nearly 3.5 miles of new transmission main includes more than 10,000 feet of 20-inch PVC and more than 3,000 feet of 20-inch fusible PVC.

This route includes several culvert crossings and county drain crossings. To save money on construction, engineers designed the route beneath these crossings using fusible PVC.

"Using fusible PVC allowed us to use a smaller diameter pipe, which saved on material and construction costs," Rutkowski said.

Transmission main projects like this one would typically use HDPE pipe, instead of PVC. The use of the PVC gives the City of Frankenmuth an advantage on any future maintenance for the transmission main.

An original budget of \$4 million was cut down to nearly \$3 million when construction bids finally came in. The project was awarded to Eric Construction, based in St. Charles.

Once construction is finished, the original ductile iron water main will be abandoned.

"The biggest thing is that we have a reliable line to provide the city water now," O'Brien said. "It takes a lot of stress and worry off us on if the pipe is going to fail or not. Now that it is a new pipe, we should eliminate that risk."





# SPICER'S MOBILE MAPPING SERVICES CONTINUE TO EXPAND

Recent project in Louisiana highlights the benefits of utilizing this highly mobile and accurate technology

Leeville, LA - Spicer Group has been offering Mobile LiDAR services to clients for over four years. As the first company in North America to own and operate a Leica Pegasus Mobile Mapping system, we employ some of the most experienced Mobile LiDAR specialists in the country. We have collected 1000's of miles of survey-grade data across the country to support a multitude of different projects.

Spicer Group's LiDAR team was recently in Leeville, LA completing a design survey along the marshes of the Mississippi Delta to support the design/replacement of a new bridge. The mobile LiDAR survey was completed in one day, and the data delivered to the client four days after the Mobile LiDAR data was collected in the field. Spicer Group's crews were able to mobilize within 36 hours of notice to proceed, and complete the field collection within that 36-hour window.

The Mobile LiDAR data was processed to achieve 1.5cm global accuracy, at 95% confidence, using control targets surveyed along the project corridor. The data was delivered to the client in a format (.las) that allows the data to be used in any CAD platform (Microstation, AutoCAD Civil 3D). In this universal format the data can be used to analyze any visible feature within the project limits, analyze existing conditions, and create topographic CAD models to support design improvements. The Mobile LiDAR data was classified, to enable our client to view, and analyze the bridge deck for any infrastructure flaws that may change the design. The ability for Spicer Group's LiDAR team to provide

360 degree LiDAR coverage within a week allowed our client to stay on schedule, and provide a superior product to conventional surveying methods.

The portability of the Leica Pegasus system allows Spicer's LiDAR team to mobilize anywhere in the country within a few days. The Pegasus Mobile LiDAR system does not rely on vehicle power, which allows the system to be shipped, and quickly mounted to the roof rack of any vehicle, as well as a boat or ATV.

Spicer Group has completed projects across the country to support:

- ▷ DOT Design Surveys
- ▷ Asset Management Collection
- ▷ Telecom Make Ready Design
- ▷ Pavement Condition Analysis
- ▷ Environmental Surveys
- ▷ Bank Stabilization

If you're in need of trusted, and reliable Mobile LiDAR and mapping services, please contact Spicer Group, Inc.



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## Spicer Group, Inc. Has Relocated its Grand Rapids Office to Byron Center

*Byron Center, MI* - For the past eight years, Spicer Group has been providing professional services in the greater Grand Rapids area. Now, to continue serving our clients on the west side of the state and accommodate a growing staff, we have relocated our office to Byron Center.

Senior Associate and Project Manager Paul L. Forton, P.E., is the head of our new Byron Center office. He has been working with local communities in Kent County for more than a decade.

“I am excited to continue serving western Michigan from our new office location in Byron Center. The new office has provided much needed space for our current growth and affords us space as we expand in the future. We look forward to serving our clients here for years to come,” Paul Forton, P.E., said.

Along with his wife and four children, Forton moved to Byron Center last year.

The new Byron Center office, located at 2464 Byron Station Drive SW, Suite C, will employ half a dozen professionals to serve our clients.

For more than 74 years, Spicer Group has been providing professional engineering, surveying, architectural and community planning services to clients throughout the state of Michigan. Our firm has grown from a one-man, home-based operation, into a corporation that employs over 200 professionals. Our headquarters is in the City of Saginaw, and we have additional offices in St. Johns, Manistee, Lansing, Dundee, and Atlanta, GA.